

**EXAMINING THE NEW EDUCATION EXPERIMENT IN CHINA:
AN EXPLORATORY STUDY OF PARTICIPATING TEACHERS'
CHANGED VIEW OF COMPREHENSIVE EFFICACY**

By

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Preface

It was a moment of extraordinary excitement for me as a doctoral student when I got the email from Professor Zhu Yongxin¹, Vice Chairman of the Central Committee of China Association for Promoting Democracy², initiator of the New Education Experiment (NEE) project, declaring that I was permitted to embark on NEE as a researcher. That day was September 15th, 2009. Since then, Professor Zhu and the members in the Research Institute of NEE have never stopped supplying me with wonderful sources, unpublished documents, and restricted publications that are of immeasurable use to my research work.

My interest in the New Education Experiment can be traced back to seven to eight years ago when I was an ordinary teacher at a college, who happened to log on their website <http://www.eduol.cn>. I was engrossed in Zhu's fabulous insight and well-expounded thought in education, and the educational stories recorded by the frontline k12 teachers across the country also captured me immediately. Nevertheless, I did not realize that I would become an NEE researcher and come to contact with NEE in zero distance some day.

Nobody disputes the fact that China is a country with a long history valuing education under the influence of Confucianism. Conventional wisdom has been accumulated ranging from *why to educate*, to *what, whom, and how to educate*. However, in this modern and postmodern world of multiplicity and pluralism, the previous one-size-fits-all rules and principles prescribed by our ancestors are hardly applicable to all contexts any more, thus encounter a problem of constant upgrading and development. One Japanese scholar Sato Manabu (cited in Zhong, 2003, p. 206) pointed out that the discourse on teachers in pedagogy has always centered on a prescriptive topic on *what a teacher should do*, and a generative one of *how to be a teacher*, but

has relatively ignored the existential problem of *why I am a teacher*, and *who I am as a teacher*.

It is in this aspect of existential matter that the NEE teacher development model contributes enormously to the Chinese educational world. That also explains why teachers are so enthusiastic to embrace it---it changes their perspectives of looking at themselves as well as their educational universe.

The process of completing a Ph. D. dissertation is a collaborative experience involving the enormous efforts and support of many people and institutions. First of all, I am greatly indebted to Prof. Zhu Yongxin. My thankfulness toward him is more than I can say. Thanks should also be extended to his secretary Lin Hai, and many of his loyal followers including particularly Doctor Xu Xinhai, Director of NEE Project Administration Center, and Chen Lianlin, Office Director of NEE Research Institute. Without their help, I couldn't have the privileges to take the free offer of attending their conferences, visiting experimental school districts, and doing fieldwork, nor did I have any access to their invaluable internal papers and confidential documents.

The Ford Foundation not only supported my three-year-long Ph. D program but also provided me with a grant for travel and research. What's more, it sent fabulous people to work on my program together with me, they are: Mr. Keith Clemenger, the director, and Ms. Jiang Lili, my contact person and friend, in IIE Beijing Office, Ms. Hodgie Bricke and her assistant Celeste Morgan Yaluk in the International Program Office at KU, and Ms. Tammy Longan and her successor Ms. Maura Cassells in New York Headquarters. They offered me super services that enabled me to concentrate on nothing but my academic goal during the past three years. I not only appreciate their support but also cherish the friendship nurtured through these years.

I should take this opportunity to thank the many teachers, administrators, educational officials and students in my fieldwork site and visiting school districts, the names of whom I can not enumerate completely. Here are only a few of them: Chairman of the School Board Mr. Zhang Zhibin, Principal Ms. Kan Qigen, Vice Principal Ms. Niu Ying, school teachers Le Zhongdong, Wu Ying, Zhang Wenjun, and Zhang Jing; Deputy Chief of Qiaoxi District Ms. Deng Xiaomei, Vice Director of Qiaoxi Education Bureau Mr. Zhang Jike, Section Chief Ms. Ma; Director of the Education Bureau in Jiang County Mr. Chen Dongqiang, Section Chief Ms. Niu; Section Chief of the Education Bureau in Jiaozuo City Ms. Zhang Shuoguo. It goes without saying that all of the people, some named but many more not, have not only helped me but also inspired me by their engagement and commitment to the New Education. I should also say thanks to the students at the school where I conducted fieldwork for 11 weeks, who came to chat in my bedroom almost every week. Their talks on a variety of topics not only provided me with invaluable information and student perspective, but also accompanied me through many meaningful and interesting nights.

I am grateful to the many individuals who helped me with survey data collection, input, analysis, and bibliography. I should especially single out two persons to send my special thanks: Mr. Wang Weimin at Pingxiang College where I used to work and am still working, and Mr. Yan Yueqi, assistant researcher and Doctoral candidate at the University of Kansas, both of whom worked intelligently and painstakingly to help me with my data input and analysis. Their help means so much to me, and I am most thankful. My favorite faculty member Ms. Zhang Yangrui edited the bibliography for me. Her carefulness and patience demonstrated impressed me immensely.

I have also benefited from the courses taken at the University of Kansas, where each of my teachers invested many hours and much time in helping me acquire a solid knowledge foundation. To them I send my most sincere thanks, and their influence on me will get strengthened rather than fade away as time goes by.

Needless to say, my most heartfelt thanks and respect cannot but go to my dissertation committee members. My adviser Dr. John Rury, by his act, and by his publications as well, set a good example for me to follow. As an excellent teacher, he succeeded in stimulating “apparently ordinary people to unusual effort”, and making everyone a high achiever beyond his/her own imagination. To this, and much more, I express my sincere respect for him. No words whatsoever can express my heartfelt thanks to Dr. John Kennedy. In the eye of a traditional Chinese student, the image of a highly respected professor can hardly go hand in hand with that of a close friend as a result of Hofstede’s so-called DISTANCE culture, but John made the two so much inseparable and indeed, he is both my most helpful mentor and best friend.

Due to the many conflicts caused by my defense which was scheduled at an inconvenient time of summer holiday, three members were replaced. Thanks to the timely help and fullest consideration of Dr. Bartholomew Dean, Dr. Dongbin Kim, and Dr. Argun Saatcioglu, my defense was “saved” and held at exactly the scheduled time. Dr. Kim was the first Oriental professor I knew and studied under at KU. As a Chinese student, I feel naturally close to this young, pretty, and scholarly Korean professor. Her outstanding performance in teaching and research at KU has been a big inspiration for my resilience to stress, persistence in adversity, and determination to academic pursuit. Dr. Dean discussed with me about my dissertation proposal a long time ago, and contributed enormously to its improvement. The intellectually stimulating talks between us will become one of the few never-forgettable memories in my life. His

naturalistic teaching style not only impresses me, but also helps make himself an outstanding ethnographer. Dr. Saatcioglu had guided me in my dissertation writing long before he served on my committee. Regardless of his young age, he is the only professor that I love and respect on the one hand, but fear on the other. He had extensive training in quantitative and qualitative research methods, and was recognized as an expert in quantitative data analysis. His question bombardment in class often forced my inert brain to work fast---never fast enough, though.

The other three initially selected committee members were Dr. Susan Twombly, Dr. Donald Stull, and Dr. Jennifer Ng. Dr. Stull, a respected professor in cultural anthropology, taught me a lot about the type of teacher and researcher I want to be. In his class, he listened to students attentively, showed understanding and respect for differences between students, he was also “skeptical about claims for which there is little or no evidence, and provided criticism in ways that help students to improve without diminishing the desire to keep trying.” (Fenstermacher & Soltis, 2004, p. 48). Dr. Twombly, Chair of the ELPS department, has impressed me as an excellent curriculum developer and syllabus designer. In her class I learned much more than the subject matter: both my cognitive and meta-cognitive abilities in terms of how to make a strategic course plan were greatly enhanced. She also provided me with good learning opportunities by engaging me in writing a monograph on international education although I withdrew later due to the time conflict with this dissertation. I do appreciate and hope we can collaborate in the future. Last but not least, I expressed my sincere thanks to Dr. Ng. By leading me to the field of multiculturalism, she opened a new world, and a new perspective for me to view the world. Never before was I so skeptical about many of the beliefs and values I took for granted for several decades. For her help to reinvent myself and my profession of education, I extend my thanks and respect.

It is with complex emotions when I mention Pinxiang, particularly Pingxiang College, a place where I have been working since 1996, a place I love and hate most, and a place for which I oftentimes shed tears and blood. To make her a better place to study and teach may be one of the most powerful driving forces that pushes me to constantly seek opportunities for self enhancement. Here thanks should first go to the college CPC Secretary and President Mr. Yin Jiguo, who gave the strongest hand to support me; then to all vice presidents and other members of the college leadership team who have shared my responsibility during the past three years. My best friend, Dean of the Foreign Languages Department Mr. Chen yongguo was always ready to help, and indeed he helped immensely in the most needed way. Mr. Wang Liping, Section Chief in the Party and Administration Office, offered to edit the table of contents for me when he saw my awkwardness in this aspect. My personal drivers, assistants and friends, first Mr. Peng Haijun, later Li Bo, Li Bingzhao, and Zhu Yong, offered me most satisfying services and safest driving during my stay in Pingxiang for winter and summer holidays. For all of this I thank them. Outside Pingxiang College, special thanks must be extended to Vice Mayor of Pingxiang Municipal Government Dr. Cui Chuanpeng, former Director of Organization Department of Pingxiang Municipal Committee Mr. Chen Songyuan, and other important governmental and Party officials in Pingxiang. Without permission and strong support from them, even my first step out of the country was impossible³.

The much valued and valuable friendship strengthened or newly developed in the past three years has warmed me in my long scholarly pursuit in the U. S.. Listed below are only a few of their names: my former English teacher and lifelong friend Professor Steven Hardy in Ohio, my old friend Ben Butler in Chicago, my newly made friend Assistant Manager Andrew Smith in Brick Solutions in Seattle, my classmates, doctoral students Prince, Sanae, Chunmei, Karen

and Cooper. Special thanks should particularly go to my dearest friend Hongde Hu, Assistant Chancellor at California State University at Monterey, who has never lost his firm belief in me that I am capable of doing better. I hope he can understand how much he has meant to me.

I acknowledge a great debt to my family, particularly to my elderly parents. Although both of them are almost illiterate themselves, they never in any moment dissuaded me from going to study overseas. During all these years, my mother-in-law and my husband assumed the full responsibility of taking care of our only child. My husband Wu Derong is the most considerate and most dependable man in the world. His wisdom, gentleness, care, and love are the most solid pillar on which my soul rests. It was he who consistently and powerfully stood by me side accompanying me through many helpless days and nights in the academic journey. My charming young son is the primary motivator stimulating me to work harder. For a better life, and a better education of him as well as other kids in his generation and thereafter, I was determined to take the thorny road of studying abroad. Thank you, Wu Ti, for understanding your mum and forbearing her absence for so long.

It would seem to be inappropriate or even absurd to extend thanks to oneself. Yet I do wish I could thank myself for completing such an amazing task within three years of time. As any researcher may know, conducting the research means 1) long hours reading in the library 2) several months even years staying in the field investigating, interviewing, observing, recording, 3) lots of time sitting in front of the computer inputting, editing, transcribing, and analyzing, 4) and much, much more unspeakable hardships that only those who underwent can understand. Even a single task of literature review would take you numerous days and nights without much sleep or rest. I particularly shared my painstaking experience with Brooks (2006, p. 84) who vividly expressed so in his writing:

I came to think that doing a literature review was a lot like dating. Both processes are a needle-in-the-haystack search for that one thing that will make the whole opaque mess crystal clear, the only difference being that the literature reviewer chases ideas, not partners. I went on a lot of promising conceptual dates as I conducted this study. I read sophisticated analyses about locus of control, disaffection, anomie, deskilling, and burnout. I learned about existentialism, communitarianism, and professional community. I came to know more about closed-door autonomy, organizational silos, and professional bureaucracies. I worked through utopian, dystopian, and empirical school reform literature that suggested promise of change, if change was implemented properly. I even read poems and novels about loneliness, isolation, and alienation, trying to make sense of the stories teachers related to me in the field. Yet each intellectual dalliance, no matter how promising or seductive, failed to satisfy. Each explained part, none explained whole.

Nietzsche (1966, p. 40) stated, “Of all that is written I love only what a man has written with his blood.” I wrote with my sweat mixed with blood, and I hope, at least a few could understand the difficulty to write in a foreign language, and come to love what I have written.

Abstract

The New Education Experiment (NEE) in the People's Republic of China has been given very little attention by researchers although it has been implemented in k12 schools for about 10 years since 2002.

This study examines how teachers' view of the NEE model (TVM) mediates between participating teachers' demographic and contextual factors, and their changed view of comprehensive efficacy as a result of NEE implementation. It is hypothesized that teachers' backgrounds (demographic and contextual variables), and number of years and level of NEE participation would directly contribute to the change of comprehensive efficacy beliefs. In addition, they would contribute to the change in teachers' comprehensive efficacy indirectly through teachers' view of the NEE model.

Quantitative data from 2,173 teachers at different school levels across 12 out of 28 school districts in China indicated that, when TVM was not considered, factors that affected TVCE were fewer and misleading. However, these results were modified when the mediating effect of positive TVM was considered: 1) school's geographic contexts, which had been unrelated to positive TVCE, became related not only to negative TVCE but also to positive TVCE; 2) the non-significant variable of *professional title* became a significant predictor of both positive and negative TVCE; 3) the variable of *years of NEE participation*, which had been non-significant to negative TVCE, became significantly associated with it; 4) *ten years or more teaching experience*, which had been related to higher level of negative TVCE, became unrelated to negative TVCE. Specifically, when teachers' positive view of the NEE model was controlled, teachers with high professional titles, five years or less teaching experience, and working in

junior high schools had higher level of positive comprehensive efficacy, while teachers who taught English, in midland or rural schools had lower level of positive comprehensive efficacy; the level and number of years of NEE participation were also related to high positive TVCE when positive TVM mediated. Between the same immediate background variables and negative TVCE, there was an inverse relationship on the condition that positive TVM was controlled: teachers who taught in junior high, with less experience and higher professional titles, participated in NEE for longer time and at a higher level, were likely to have lower level of negative TVCE. In addition, teachers who were in suburban or eastern schools also had lower level of negative TVCE, whereas teachers who were in midland or rural schools, and who taught English or math, had higher level of negative TVCE.

In contrast, the qualitative part of the study based on one-year extensive observation and eleven-week intensive ethnographic study of one particular NEE school, provided sufficient evidence to support the quantitative conclusions except for one aspect. Like the findings from the quantitative study, the qualitative data revealed that less experienced and high-ranked teachers and teachers with longer time and higher level of NEE participation had higher positive TVCE, so did teachers who worked in suburban and eastern schools. However, the one-school ethnographic study did not support that junior high teachers were more likely to have higher level of positive TVCE. In addition, the qualitative study concluded that NEE implementation varied greatly both within one school and across different schools; and that belief change and behavior change were reciprocal and interactive.

Conclusions and implications were summarized such as the effect of NEE on TVCE, and the effect of TVM on TVCE, either as an independent contributor or as a mediator between other predictors and TVCE. More importantly, the study concluded that successful implementation of

the New Education reform depends on 1) a willing heart, a positive attitude, and high comprehensive efficacy beliefs; 2) advocating and creating a more decentralized policy making mechanism, and more equitable environment; 3) a balanced consideration of reform model specificity and teacher autonomy, and 4) a balanced consideration of belief change with behavior change to achieve better implementation effects. Finally, by contextualizing NEE in the broader historical, cultural and social reality of today's China, some constraints and possibilities for NEE's sustainable development were also touched upon.

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Chapter 1 Introduction

Scientific studies and discoveries often begin from the observation of phenomena. Three observations have given rise to the current study on the New Education Experiment (NEE): first, the incredibly rapid expansion of this movement as a bottom-up reform model. It began with one school's involvement with only 300 students and teachers in 2002, which eventually led to the participation of 862 schools with over one million students and teachers across China in 2010. All schools or school districts participate on a voluntary basis and with no financial incentives. Second, since September of 2009, I read systematically about NEE and talked with the people acknowledged. With the absence of a convincing theory, scarcity of analyzable solid data, and lack of scientific assessment of the reform outcomes, the NEE program presented the question of why this model is so attractive, and so full of vigor and vitality. Third, although NEE has become a media event with over 50 influential high-profile reports and publicity over these years, Chinese researchers and educators have not responded with investigations, and neither did foreign scholars who I think experience a language barrier. To dig out the story under the surface of such a successful movement, I decided to embark on the quest, hoping to find clues to answer the questions and address doubts held about this program.

Contingency Theory: a preliminary lens to interpret China's educational reform

My preliminary literature review directed me to search for the possible explanation of China's educational reform from the perspective of contingency theory, which argues that there is no single best decision-making approach, particularly when decision makers are constrained by time, insufficient information, and an unclear ends (Tarter & Hoy, 1998). Different from American theory-driven education reform (e.g., New American Schools), which is often guided

by an articulated theoretical framework, a specific set of requirements, detailed instruction of daily operation/management, and by a rigorous data-based monitoring and assessment process, education reform in China, the grassroots, bottom-up model in particular, is based on action-driven theory building. Today economic reform in China has achieved success attracting the world's attention, yet it was not strategically planned at the very beginning. "Cross the river by feeling the stone" was what the late CPC (Communist Party of China) Secretary-General Deng Xiaoping encouraged the reformers to do in late 1970s and early 1980s. In other words, China's economic reform was initiated without a pre-arranged strategy to learn from, nor a theory to refer to. "What is most striking is the succession of incremental, steadily accumulating measures of economic reform that have gradually transformed the economy in a fundamental way" (Naughton, 1995, p.20). Similarly, NEE began its experiment without well-planned management strategies, predictability of reform outcomes, and capacity to monitor and assess the reform process and performance, yet it keeps moving on and expanding. "The strategy of not having a strategy", or the strategy of "muddling through" (Naughton, 1995, p.7) may be most appropriate in interpreting the successful story of NEE.

Just as there is no best way to make decisions, there is no best way to run a school, to organize, to teach, or to do research. The effectiveness of the approach depends largely on the situation and the people in the situation. Perhaps, this explains at least partially why so many schools and individuals participate in the New Education Experiment with such enthusiasm. Nevertheless, once the approach (i.e., NEE) was agreed on, the concern becomes: how, and to what extent does it motivate or inhibit the energy and talent of the people needed for its implementation? In particular, how does the NEE reform impact teachers, the fundamental change agents in the school system?

The landscape of K12 educational reform in China

This study does not aim to present a comprehensive account of contemporary K12 educational reform in China. Nevertheless, in placing the concerns the study addresses in Chinese social, political and economic contexts, it will assist and facilitate readers' understanding of the themes and issues it discusses.

Education in Chinese society is highly valued, both individually and institutionally. From the personal perspective, education is viewed as one of the most effective tools for upward social mobility, whereas from the government's perspective, education is a key factor in the revitalization and reconstruction of national identity and economy. The phenomenal success of economic reform in the 1980s, when the extensive reform movement and the "Open Door" policy took hold, called for a corresponding reform in the education sector to meet the urgent demands of the new socialist market economy for a large number of well-trained experts and qualified workforce. The enacting of *the Decision of the Central Committee of Chinese Communist Party on the Reform of the Education System* in 1985 marked the starting point of the reform campaign particularly in K12 education (which is also called basic education). Thus, the basic education system has experienced significant transformation. As a highly centralized authority, the Chinese government was crucial in transforming the basic education system in a fundamental way. Its decisions included moves to decentralize educational governance, universalize 9 years of compulsory education, improve literacy, and diversify educational financing. By the end of 1990s, some efficiency and effectiveness was achieved in the basic education sector in terms of what Levin and Lockheed (1993) called the three matters: growing participation (enrollment, completion, and achievement), more effectiveness (lower dropouts and repetition, and positive learning results), and increasing resources (more expenditures per

student, annual recurrent public educational expenditures, qualified teachers, facilities, textbooks, and others).

Notwithstanding these achievements, education in China has always been the target of criticism. On the one side, rising educational inequality has been generated as a result of regional economic inequality and policy shifts like fiscal decentralization. The income gap between urban and rural areas, and between coastal and inland places increased markedly since the late 1980s (Khan & Riskin, 1998). And the decentralization of the administration and finance of education widened the gap in personal economic and educational disparity (Tsang 1994, 1996, 2000; Qian & Smyth, 2007). For instance, in the poorest school communities in the 1990s, schools could only meet the minimum requirements of “*yiwu liangyou*” (one “have-not” and two “haves”)---no school should have dangerous school buildings or facilities; every school must have classroom buildings and every student must have a desk and stool in the classroom (Cheng, 1993). In contrast, most formal public schools could achieve, and some went far beyond the “*ba peitao*” (eight supplements) advocated in the Ministry of Education guidelines. Specifically, every primary or secondary school must be supplemented or outfitted with a bounding wall and a school gate for safety, a garden, necessary toilets, a recreation center, a laboratory, a library, and a sports ground. In addition, quite a few poor rural schools were still struggling to realize “*santong*” (three connections); that is, water, electricity, and road connections guaranteed to every school.

The issue of education quality is another concern. Given the common practice of prioritizing academic performance and the pressure of gaining access to tertiary education by passing the national college entrance examination, students “are overburdened with homework, crammed with too many intellectual facts and blindly working for high grades in exams under an

ossified teaching method.” According to Wu Changshun, a teacher and NPC (National People’s Congress) Deputy. Faced with this challenge, China aimed to focus on “quality education” to prepare the nation for international competition in the globalized knowledge economy. In 1993, the CPC Central Committee and the State Council jointly issued *Guidelines for the Reform and Development of Education in China*, pointing out that the development of education should not only emphasize quantity, but quality and efficiency as well. In 1999, the Central Government ratified *The 21st Century Action Plan for Revitalizing Education* formulated by the Ministry of Education, initiating the national curriculum reform labeled “the New Curriculum Reform,” and in-service teacher training. In the same year, another policy was promulgated: *the Decision of the State Council of the CPC Central Committee on Deepening Education Reform and Comprehensively Promoting Quality Education*, mandating that changes in educational structure, system, aims, curriculum, and teaching methods, must meet the needs of social development in the 21st century. In 2001, *The Outline of Basic Education Curriculum Reform* was enacted and the reform was attempted first on a small scale, and then in a nationwide implementation in 2005. In 2010, China issued *National Outline for Medium and Long-term Education Reform and Development 2010-2020*. The strategic goal that is to be attained by 2020 is to “modernize education, bring a learning society into shape, and turn China into a country rich and strong in human resources.” Like other past reforms in China which used to lack specific guidelines, this outline relies on pilot reforms to determine ways to make China rich and strong in human resources. Ten pilot reforms will be carried out in the years up to 2012. Given this, it remains to be seen how China will reform and modernize her education system “to cultivate talents, foster innovation and develop scholarship in the next decade” (Zhao, 2011, p.3).

To date, as a result of governmental persistence, education equity has improved significantly. A financial support system for students from poor families has been set up and improved. The policy of “two remissions and one subsidy” for compulsory education has been implemented throughout the country, providing all students in 9-year basic education with remissions of tuition and miscellaneous fees, and providing boarding students from poor families with living allowances. National scholarships and financial support systems have been established for students in regular higher education institutions, secondary and higher vocational schools, which, together with student loans, make up the main body of the national support system of “scholarship, financial support, loans, subsidies and remissions”. Such a system also includes work-study programs, stipend for students with special difficulties, and the exemption of tuition and fees. Special education is promoted and the right of the children of migrant workers as well as stay-home children in rural area to receive compulsory education is secured through laws and regulations. A relatively balanced emphasis is placed on increasing educational investment and regulating the collection of education fees. Such efforts have effectively curbed irrational and haphazard educational charges (Ministry of Education, 2009).

Regardless of the financial and policy support from government, the improvement in education quality still remains a problem. The success of basic education curriculum reform is regarded as modest, with key problems like test-oriented teaching and lack of innovation left unchanged. The failed aspect of this top-down government directed reform model might be at least partly attributed to the negligence of the supposed reform agents, namely the teachers, and their willingness to respond. As Levin and Lockheed’s (1993, p. 13) idea of “three solutions” suggests, “basic inputs,” “facilitating conditions,” and the “will to act” in the government and communities (and the teacher community in particular) are the three essential factors for creating

effective schooling in developing countries. Along these lines, Shi and Xia (2008) summarized the three drawbacks of the top-down education reform:

First, it requires government at all levels to prepare for the possible political cost and assume great responsibilities for ensuring sufficient public resources for the operation of the reform. In case the reform did not achieve the expected outcomes or damaged the interests of some students and parents, the government would become the object of public criticism and media attention, which would degrade its authority and further affect its legitimacy. Secondly, the top-down reform model leads to inertia in schools and school teachers and gradually deprives them of their initiative and creativity. A majority of the frontline teachers may form the collective unconsciousness¹ and habit of waiting for orders from above or outside of the reform arena. Thirdly, it would lead to the insufficiency or biased generation of theory, information, and data to support the reform particularly when the researched schools and subjects play a game of “being good” (p. 30).

Dissatisfied with the achievement of the basic education curriculum reform, some frontline teachers (classroom teachers), principals and university professors began seeking other ways in which to improve education quality. There are two strands of non-governmental reform that have an impact on the development of educational theory and practice (Ye, 2007, cited in Landowe, 2008). One is the university-school collaborative educational change projects, often led by university professors conducting long-term collaborative experiments in one or more schools or school districts. Typical cases are the *Comprehensive Curriculum Change Project* conducted by a university-school team directed by Yun Zhaoshi, a professor at Shanghai Normal University, the *Subjective Education Project* led by Pei Dina, a professor at Beijing Normal University, and the *New Basic Education Project* held by Professor Ye Lan from East China Normal University. As Ye notes these efforts, “they always start with one educational theme such as curriculum or classroom instruction, and then extend to strategies fostering comprehensive school improvement.” (Ye, 2007, cited in Landowe, 2008, p. 16).

The other reform initiative is grassroots educational projects initiated by schools or individual teachers or professors. Considerably influential ones include *Happy Education* by the

No. 1 Affiliated Primary School of Shanghai Normal School, *Success Education* by the No. 8 Junior High of Shanghai Zhabei District, *Situational Chinese Teaching Method* created by Li Jilin, a teacher from the Affiliated Primary School of Nantong Normal School, and the nationally prominent *Dulangkoju Model* by *Dulangkou* Junior High, a rural school in Shandong Province. In addition, the New Education Experiment is a grassroots movement from the bottom of the education administrative hierarchy. The following section discusses NEE first in the general sense, then the various aspects of its theoretical foundation, core values, basic principles, and critiques in particular.

The New Education Experiment

The New Education Experiment is an exploratory movement, which aims to help teachers and students “lead a happy and integrative educational life” through showing sincere concerns about their personal life, teacher professional development and “six actions”. By “educational life”, it suggests that education in itself and by itself is a life, a special kind of life, that everyone in the schools treats and experiences education as an indispensable part of his present experience in need of permanent enrichment and improvement, rather than takes it merely as an occupation, a tool, a job or an event. The New Education is characterized by an ethos of educational idealism, fieldwork orientation, collaborative consciousness, and public good priority (Zhu, 2009).

This section offers an overview of the New Education Experiment by an explanation of its core values, practices, and visions, followed by a presentation of the 3 R’s reading model, the 3 L’s ideal classroom model, and the 3 P’s teacher development model. It also discusses the theoretical foundations of the NEE model, and finally it concludes with some critiques on it.

Five notions, six actions and four transformations

Centering on its task of helping teachers and students lead a happy and integrative educational life, NEE promotes an action-oriented model with characteristics of five notions, six actions and four transformations.

The five notions are: 1) limitlessly trust the potential of both teachers and students; 2) focus on a spiritual state, advocating successful experience; 3) emphasize on personality development and characteristic education; 4) present students with lifelong useful and usable lessons; 5) keep teachers and students communicating with lofty human spirit.

By putting forward the five notions, NEE attempts to gather “birds of the same feather.” However, teachers who share the same educational dream cannot have their dream fulfilled until they start to do something for change. Thus, “action” is the word most valued in NEE. That “Gains will come natural as long as we engage ourselves in actions” becomes a motto of all NEE members. They believe that NEE is not presupposed but generative, which requires exploration and creation of every participant. In the long-term experiment process, they have identified six actions which are regarded as effective in operationalizing the notions. The six actions refer to 1) construct a book-enticing campus; 2) teachers and students co-write stories; 3) listen to the voice coming out of school; 4) develop good speaking skills; 5) create the ideal classroom; and 6) build a digital society².

These six actions seek to serve the realization of four transformations: 1) transform the students’ living state; 2) transform the teachers’ working mode; 3) transform the schools’ developing model; and 4) transform the traditional education and research paradigm (Zhu, 2004, 2009).

Although the New Education Experiment was initiated by the professor-turned-into-official figure Zhu Yongxin, who has a governmental background in the political arena, it was a Non-Governmental Organization of the most grass-root nature (He, 2006). Its NGO-like grass-rootedness lies in the fact that NEE does not establish requirements for membership, nor does it solicit any fees. Participation is contingent on whether a person or a school has a strong desire for an ideal education and a willingness to take action. It is also embodied in its voluntary nature: Except for a few full-time research positions, all the work at NEE has been done by volunteers---a band of enthusiastic and enterprising teachers. The government does not provide funding or incentives for NEE full-time workers, or volunteers, or participating schools and individuals. Their operational expenditure depends on donation from philanthropic organizations, and Professor Zhu not only invests most of his private time but also money earned from copyrighted publications, according to Lu Zhiwen, Xu Xinhai, and many others at the Research Institute of NEE.

The Three R's Reading Model

Reading is emphasized in the New Education Experiment. In the first of its “six actions”, reformers proposed to build a book-enticing campus, and the “three R's reading model” (i.e., morning recital, midday reading and evening reflection) contributes significantly to the successful actualization of Action No. 1 of building a book-enticing campus.

The Three R's model is a way to lead the children, by means of reading, to a simple but healthy life rather than the complex life full of test pressure, violence, video games and other negative influences and stimuli (Zhu, 2009). The first R, Morning Recital, refers to poems and lyrics reciting, which can be extended to 1) morning poem reciting, 2) daily poem reciting, 3)

situational poem reciting, and 4) birthday poem presenting. The second R, Midday Reading, is individual reading of storybooks and other children's books selected to match the students' level and interest. The third R, Evening Reflection, concerns reflecting and recording what students have accomplished that day in the way of writing. Specific tasks include topical drawing, confidential diary, interactive diary, observational diary, cooperative class diary, and story/literature composing. Reading, thinking and writing cannot be divorced from each other; as Zhu often said, "If reading means marching forward on the shoulders of the great, writing is climbing upward stamping on your own shoulders" (2009, p. 67). The principle permeating the Three R's is jointly building a meaningful life with students, teachers and parents. As a result, collective reading, reciting and writing are promoted as the new life style of the students, teachers and parents.

The Three L's Ideal Classroom Model

At the transformational NEE Beijing Seminar in 2006, the aim of building an ideal classroom was defined as "a pursuit of highly effective and personal classroom which, by nurturing a classroom atmosphere of equality, democracy, harmony, and happiness, combines knowledge accumulated in the human history with students' life experience in an organic manner." Guided by this, they proposed to construct an ideal classroom by reaching three levels (3L's) one after another: implementing the effective framework for teaching; excavating the intrinsic glamour of knowledge; and harmonizing knowledge with social life and teacher/student life experience (Zhu, 2008). Later on, Zhu (2008) even suggested using six "degrees" to assess the effectiveness of classroom teaching: the degree of teachers' amiability, the degree of subject matter integration, the degree of students' participation, the degree of in-class practice, the degree of freedom, and the degree of knowledge extension.

Level 1: Implementing the effective framework for teaching

The NEE framework for teaching is outlined by Gan Guoxiang (2009) to be composed of six components: texts for teaching, and teachers' comprehension of the texts; determination of teaching objectives; students' guided preview of the texts; rigorous teaching sections (including teaching contents and procedures); presupposed classroom learning activities; and reflections on teaching.

The NEE framework for teaching provides guidelines on what a teacher does before, while, and after teaching. It is regarded as a tool to ensure effective teaching, and a basis for understanding and evaluating teaching effectiveness. The benefits of having a framework for teaching are several. First, it provides a structure and shared vocabulary for discussion among teachers. With it, experienced teachers can identify the focus for professional development and instructional improvement. For novice teachers, it offers a pathway to excellence, and serves to help them participate in communicating with experienced teachers sharing the same language (Gan, 2009, p. 3).

NEE acknowledged that the framework was developed on the basis of Charlotte Danielson's (1996) model, which includes 4 domains, 22 components, and 66 elements. Below are the four domains that were presented in Danielson's framework for teaching:

Figure 1.1 Danielson’s framework for teaching

<p><u>Domain 1: Planning and Preparation</u></p>	<p><u>Domain 2: The Classroom Environment</u></p>
<ul style="list-style-type: none"> •Demonstrating Knowledge of Content and Pedagogy •Demonstrating Knowledge of Students •Selecting Instructional Goals •Demonstrating Knowledge of Resources •Designing Coherent Instruction •Assessing Student Learning 	<ul style="list-style-type: none"> •Creating an Environment of Respect and Rapport •Establishing a Culture for Learning •Managing Classroom Procedures •Managing Student Behavior •Organizing Physical Space
<p><u>Domain 3: Instruction</u></p>	<p><u>Domain 4: Professional Responsibilities</u></p>
<ul style="list-style-type: none"> •Communicating Clearly and Accurately •Using Questioning and Discussion Techniques •Engaging Students in Learning •Providing Feedback to Students •Demonstrating Flexibility and Responsiveness 	<ul style="list-style-type: none"> •Reflecting on Teaching •Maintaining Accurate Records •Communicating with Families •Contributing to the School and District •Growing and Developing Professionally •Showing Professionalism

Source: *The Framework for Teaching*, Retrieved 15 December, 2010 from www.socsd.k12.ny.us/curriculum/framework_for_teaching_c_danielson.pdf

Domain 1: Planning and Preparation The components in Domain 1 outline how a teacher organizes the content of what students are expected to learn---in other words, how the teacher designs instruction. These include demonstrating knowledge of content and pedagogy, demonstrating knowledge of the students, selecting instructional goals, demonstrating knowledge of resources, designing coherent instruction, and assessing student learning.

Domain 2: The classroom Environment The components in Domain 2 include the interactions that occur in a classroom that are non-instructional. These consist of creating an environment of respect and rapport among the students and with the teacher, establishing a culture for learning, managing classroom procedures, managing student behavior, and organizing the physical space.

Domain 3: Instruction According to Danielson (1996), the components in Domain 3 are what constitute the core of teaching --- the engagement of students in learning contexts. These include communicating clearly and accurately, using questioning and discussion techniques, engaging students in learning, providing feedback to students, and demonstrating flexibility and responsiveness.

Domain 4: Professional Responsibilities The components in Domain 4 represent the wide range of a teacher's responsibilities outside the classroom. These include reflecting on teaching, maintaining accurate records, communicating with families, contributing to the school and district, growing and developing professionally, and showing professionalism. Teachers who demonstrate these competencies are highly valued by their colleagues and administrators, and more likely to be seen as true professionals.

L2: Discovering the intrinsic glamour of knowledge

NEE advocates believe that knowledge possesses inherent value, and the function of the teacher is to discover the intrinsic glamour of knowledge. “Teaching is not repeating knowledge generated by our ancestors, it is replaying the process of knowledge discovery, re-experiencing the puzzlement and rejoice when knowledge was discovered.” (Gan, 2009, p. 69). In this era obsessed with celebrity, sports, television, and computer games, teachers are seen as shortchanging students in a futile effort to be instrumental (Zhu, 2009). Noting a decline in the number of students studying history and classics, NEE members feel committed to forging a new age of reading classics and rediscovering their significance to living today. For example, the monotony and boredom of literacy teaching used to be condemned by all, however, when teachers make efforts to trace the evolution of every word they teach, students begin to have some idea of how it was created in ancient China and feel the elation and surprise of their ancestors while naming things in the world. Before teaching in class, teachers are encouraged to read the texts in depth, to explore the different meanings of words, and to dig out hidden connotations. By displaying the graceful and appealing aspects of knowledge itself, teachers engage their students in learning, in opening a door for themselves that may have never been opened before, and in thinking about what they may have never thought of before. More importantly, students are directed to thoughtfully relate themselves to the world where ancient people lived hundreds or thousands of years ago, to listen, and to have conversations with the great deceased.

L3: Harmonizing knowledge with social life and teacher/student life experience

If L2 emphasizes intellectual learning, then L3, poetic learning, is transferring from dialoging with textual knowledge, and with others (teachers, students, writers and other readers), to dialoguing with oneself, and reaching a harmonious state with knowledge, others, and one's self. (Gan, 2009, p. 124). Teachers at this stage need to have a capacity to connect the students and the subject being studied, and to connect student with others as well as themselves. The third level is said to be not facile to attain, and it is not necessary to strive to attain regardless of contextual constraints. Level 3 comes out as a teaching insight which is arrived at only after a lengthy process of hard work and painstaking study of the subject matter. There is not much theoretical illustration regarding this point but illustrative teaching cases meant to demonstrate the realization of L3 realization are not scarce.

One such case I observed occurred in a class where a teacher taught an ancient Chinese poem about a fisherman fishing lonely in the wind and rain. After students got mastery of the poem, she tried to lead them to “the third level” by telling how the poet retreated from an important government position and became a recluse across rivers and lakes. This facilitated students to reflect on the whole poem, particularly the last two lines (four lines in English):

青箬笠，绿蓑衣，

斜风细雨不须归。

In a deep-green bamboo-leaved hat

And a light-green rain cape

There is no rush to go back

Regardless of the slanting wind and rain.

Then the conversation between the teacher and students started, aiming to have a dialogue between the poet, the teacher, and students, with each other, and within themselves:

T: Now I am the fisherman. How can the worldly hurly-burly bother me? In this room, this small classroom grows my spring, and my dream of life. Living this way, I feel “斜风细雨不须归 (Regardless of the slanting wind and rain, there is no rush to go back).”

T: We have lots of great stories, and we are fond of them. We are so intoxicated that we don't care those attracting toys, or fancy clothes, or luxurious life. We talk with the great people in the stories, feeling what they felt and experiencing what they experienced. Now we feel---

Ss: “斜风细雨不须归”.

T: We've learned so many poems, from children's poems to ancient poems. Particularly in the winter vocation when other kids played and laughed outside, we were still immersed in learning our poems of calyx canthus, showing no interest in joining them. Then we feel---

Ss: “斜风细雨不须归”.

T: Every class is full of intelligence tests and challenges. But we work even harder, attentively listening to, seriously thinking and actively discussing about every question the teacher raises. Then we feel---

Ss: “斜风细雨不须归”.

T: We practice calligraphy, we play the traditional Chinese music instrument, we approach the nature, and we love everything beautiful and get deeply engaged in it. Now we feel---

Ss: “斜风细雨不须归”.

The Three P's Teacher Development Model

Different from many educational reforms, the New Education Experiment has taken teacher development as a starting point. As Zhu notes, “there will not be student growth without teacher development; nor will there be students' pleasure without teachers' happiness.” (2009, p. 76). The NEE in-service teachers are developed through the 3P's model of professional reading, professional writing, and professional development community.

Professional reading

Reading is NEE's most valued and fundamental activity. "One's history of spiritual maturity is his reading history; and a nation's spirituality depends on the reading ability of the nation." (Zhu, 2009, p. 78). Teachers are key figures for reading. A teacher who does not love reading is less likely to kindle students' passion for reading. Based on predetermined beliefs as to what teachers need to know, both in theory and practice, NEE developed a map for teachers' professional development which consists of three components: 50% ontological knowledge (i.e., subject knowledge); 30% educational expertise; and 20% background knowledge in science and liberal arts.

A variety of reading approaches and manners are recommended and practiced, among which the "co-reading, co-writing, and co-living" approach is the most appreciated. Some describe NEE professional reading as "a sincere and intense romantic love." According to Tiepigu³, "it demands that one invest all his passion, feeling happy for him, shedding tears for him, going crazy for him, and getting resentful of him. With a sincere but humble heart, you listen to him, feel him, bravely undergo pains, doubts, conflicts, and of course, trembling surprises as well, till you recognize yourself from him and melt into one." (2009, p. 1).

Professional writing

Writing and reading are supposed to benefit and enhance each other if they are integrated. It is held that NEE teachers write not for professional advancement, nor for fame, nor for publication, but for "living a fabulous life and doing a fabulous job." By writing, they record what they did and thought, thus document their own educational life. By co-writing, they weave

a network to communicate with others and their inner self. In a word, they write for none of the worldly purposes except to record their own life and satisfy their own spiritual pursuit.

Teachers are encouraged to write frequently. At the initial stage, they can write their life experiences in a free and casual way. As their professional thinking gets deepened, NEE require them to write more professionally. Professional writing is categorized into five modes: daily educational narrative; educational reflection; co-writing among teachers, and between teachers and students; recording educational cases and analysis; and recording instructional cases and analysis. NEE argues that the five writing modes have different characteristics and functions, and from different levels they lead teachers to reflect on educational practice, promote educational thinking, and ameliorate daily teaching (Zhu, 2008).

Professional development community

To communicate and dialogue on the basis of reading and writing is an effective way for academic enhancement as well as a means to fight against isolation and alienation, strangers working together at the same school.

One noticeable community for teacher development is the NEE virtual community. The online education web was set up in the winter of 2002 as an answer to the call of some of Zhu's doctoral students, such as Li Zhenxi, Yuan Weixing, and Jiao Xiaozun. In fact, Professor Zhu, who used to be a book lover with a limited level of internet literacy, discouraged his students from making such a move. He did not realize this online website created a culture different from other websites from the very outset. And very soon, it became a spiritual home for teachers at the frontline of education reform. Teachers read books, posted writings, participated in discussions, and explored teaching problems with unprecedented zeal and excitement because it required

them to use real names, and “was highly constructive, and stood for mutual sincerity and respect” (He, 2006, p. 30). In addition, it valued idealism, professionalism and pragmatism, and broke the boundary of traditional rank, seniority, age, and status to create a democratic environment for equal discussion and communication. After that multiple online teacher clubs, learning communities, and education blog groups grew.

Theoretical foundation of NEE

By reading the NEE books, papers and reports, I identified at least two sources of its theoretical foundation: 1) the educational philosophy of John Dewey and his Chinese student Tao Xingzhi, and Deweyian derivatives of contemporary U. S. educational theories like reflective teacher development, action research, teacher narratives; and 2) the educational thought of Vasyl Sukhomlinsky, the giant humanistic educator of the former USSR.

Theories of Dewey and Deweyian derivatives

Opposed to Plato’s (1979) epistemology that knowers are separate from their ideas and that ideas in their ideal forms have their own transcendental existence, Dewey (1916, 1920, 1933; cited in Johnson & Golembeck, 2002, p. 4) held that “we are all knowers who reflect on experience, confront the unknown, make sense of it, and take action.” Knowledge is not something external to us or objective to us, instead we as knowers are directly connected to knowledge, for we are constructing it. Dewey (1916, 1938) argued that teachers are like students and referees in the sense that on the one hand, they continue to grow themselves, thus modeling education as lifelong learning; on the other hand, they are referees who help maintain a sense of negotiated order in the democratic classroom community. By seeking to make sense of their

educational experiences, teachers play an active role in constructing their lives as well as knowledge.

Dewey advocated hands-on learning or experiential education. In order to design effective education, we must understand the nature of how humans have the experiences they do. Dewey argued that we learn something from every experience, either positive or negative, and one's accumulated experience influences the nature of one's future experiences. Thus, on the one hand, every experience in some way influences all potential future experiences for an individual, and on the other hand, one's current experience can be understood as a function of his past experiences interacting with the present situation. This explains the maxim of "one man's meat is another man's poison". Any situation can be experienced in profoundly different ways because of unique individual differences. For example, one student loves school, while another hates the same school. This is important for educators to understand. While they can not control students' past experiences, they can try to understand those past experiences so that better educational situations can be created for the students. Ultimately, all a teacher has control over is the design of the present situation. The teacher with good insight into the effects of past experiences which students bring with them better enables him to provide education that is relevant and meaningful for the students (Neill, 2005).

Dewey's education theory influenced a number of Chinese scholars including Tao Xingzhi (Tao Hsing-chi), Hu Shi and Zhang Boling while they studied under him at Columbia University. And his influence on Chinese intellectuals grew significantly after he visited and stayed in China for two years in 1920s (Wang, 2007).

One of Dewey's graduate students, Tao Xingzhi, contributed enormously to promoting his theory (Hoyt, 2006; Wang, 2007). After graduating in the United States, Tao went back to China and taught at the National Nanjing Teachers College. Then he quit his job and went into the countryside to promote mass education. In March, 1927, he set up his own experimental teachers' school, Xiaozhuang Teachers School, to actualize his educational beliefs as well as those of Dewey. Tao's school emphasized doing, and learning by doing, exemplifying Dewey's influence on his educational philosophy. However, at Xiaozhuang, Tao promoted the concept of "schools without walls." He reformulated Dewey's approach to learning by declaring that "life is education," and "society is school" rather than the other way around as Dewey had it.

According to Chinese philosophy, knowing is prior to doing. Only when you know, can you do. Dewey argued that doing comes first, and that by learning while doing, you will actually know. Tao Xingzhi acknowledged the difference in these philosophies and agreed with Dewey. Tao, previously named Zhixing (knowing-doing), changed his name to Xingzhi (doing-knowing) after he embraced Dewey's philosophy and later even going so much further to Xingzhixing (doing-knowing-doing) as a mark of new development of Dewey's educational theory in China. In fact, Tao built on the ideas of the teachers new education theories suited to Chinese circumstances, and the concept of "New Education" (*xin jiaoyu*) was actually originated from Tao's democratic and practical "Life Education" over 80 years ago in opposition to elitist and impractical traditional education in China's schools.

The current practice and research paradigm in U. S. teacher education, such as reflective teacher development, action research, practitioner/teacher research, and teacher community development, all have contributed, directly and indirectly, to the construction of NEE theory and practice. And these derivatives draw from the thinking of Dewey, who suggests that the primary

purpose of teacher preparation should be to help would-be teachers become reflective practitioners or teachers as researchers. This is actually in opposition to the traditionally dominant technocratic mindset of training teachers by indoctrinating them with well-established education theory and knowledge.

In another country far from the United States, a great figure emerged as a practitioner researcher in the educational world. And the “practical pedagogy” he developed gave rise to a growing movement in China. This man is Sukhomlinsky, and the country is the former USSR.

Sukhomlinsky's theory and practice

Sukhomlinsky, an influential educator in the former USSR, is perhaps the biggest influence not only on the construction of NEE theory, but also on the whole population of Chinese teachers. Sukhomlinsky's works on education were mainly introduced to China in the era of economic reform and opening-up. Chinese scholars (Zhu, & Zhang, 2006) divide the process of importing Sukhomlinsky into three stages: The middle 1980s focusing on presentation and translation of Sukhomlinsky's works, the middle and later 1990s for application and exploratory education practice, and the early 21st century for further experiment and systematic research on Sukhomlinsky's thought. The extent of the transplanting of his educational theories at different stages, according to Zhu and Zhang (2006), was related to both Chinese educational practice and the characteristics of Sukhomlinsky's ideas.

It is difficult to explain why Sukhomlinsky gave rise to such a following among Chinese teachers. Three factors may contribute to better understanding his influence in China.

Multiple roles of a classroom teacher, a principal, and a researcher/great educator In his short life of 52 years, Sukhomlinsky never really separated himself from educational practice

and created an influential model of “practical education”. In their book *Education of teachers in Russia*, Long & Long (1999) reported that in their 1994-1996 surveys of teacher trainees, teachers, and professors in Pskov, Vologda, and St. Petersburg, “Vasilii Sukhomlinsky was invariably the person most often mentioned as one who exerted a significant influence on their educational thinking” (1999, p. 105). Although such a survey has never been conducted in China, there is reason to believe that the conclusion would be similar. Teachers at K12 level in China are of mixed backgrounds and many of them are lack of systematic academic training. The complicated body of education theory borrowed from western countries is largely beyond their understanding, let alone acceptance and application. These theoretically handicapped teachers are empowered when they discover, after discarding technocratic rationality, that they can be participants in knowledge construction by reflecting and investigating their own teaching practice and classroom instruction. In other words, K12 teachers in China are inspired by the role model of Sukhomlinsky, who demonstrated himself that it is not only likely but also realistic for an ordinary frontline teacher with limited formal education to grow into an influential educator if he devotes to education and persists in learning from his own reflective thinking.

The central position of the individual child in the educational process In the book entitled *To Children I Give My Heart*, Sukhomlinsky wrote, “it is the child and the child’s interests, needs, aspirations, problems, and stages of emotional, physical, and intellectual growth---not the academic content, not the lesson---that must be the center of attention in schools and in teacher-training institutions” (Cited in Long & Long, 1999, p. 106). This child-centered idea is not new theoretically, but never before did it seem to have such an impact on Chinese teachers. Its particularly high currency springs from not only his inspiring account, but also the invaluable worth of children in the “one-family-one-child” era in China. Nowadays, more

importance is placed than ever to the respect of the personality of the child, the attention to his inner world, and the rounded development of his natural faculties. The recognition that the child's existence is sacred is more commonly shared in the current Chinese society.

Ideological alignment in terms of teacher's double responsibility All through his life, Sukhomlinsky fought forcefully against authoritarian pedagogy that oppressed children. He argued that teachers should take lifelong efforts to understand and love children. Teachers should not only love children but also be demanding in the sense to educate them to be well-disciplined, morally upright, kind to people, "lovers of beauty in the arts and in nature, activists engaged constantly in good deed, and exceptionally hard workers who do not shy away from trying to conquer the impossible" (Long & long, 1999, p. 106). To love and to discipline is in alignment with Chinese culture and ideology. One most important responsibility of the teachers, according to Sukhomlinsky, is to instill the confidence in students that they can conquer the impossible and help them to achieve it. Sukhomlinsky provided teachers with multiple methods to perform their responsibility:

By believing in a child's ability to achieve the impossible; by instilling in them the desire to learn by appealing to their natural interests and by showing them how to learn and to have successes in learning on a daily basis; by showing them constantly in many ways that you are interested in them and believe in their natural gifts; by showing them that joy in learning or any other activity in life can come about only through diligence and hard work; by engaging children in activities that allow them to see the products of their labor; by treating children humanely and being sensitive to their inner world...(Long & Long, 1999, pp. 106-107).

Throughout his career, Sukhomlinsky continued to list many methods and requirements to teach children, including ensuring time for children to devote to reading, writing, and reflecting; enlisting parents' active involvement in their children's education; and teachers'

mastery of subject matter, enthusiasm about education, and careful study on the mental activity of the children.

His practical theory kindled the passion of Chinese teachers and educators in the education reform era, and his role as a frontline teacher, a principal and leader set a compelling model to emulate for Chinese teachers who are ambitious to develop themselves as well as improve education quality. His lifelong devotion to making the rural school into a holy place for learning, his understandable interpretation of the abstract educational theory into enjoyable everyday experience of teaching and research, and the depth and simplicity of his educational philosophy enabled the Chinese teachers to embrace him and led to the Chinese desire to learn from him. Wei Shusheng (2008, p. 1), the so-called “Chinese Sukhomlinsky” once said, “to make the school a learning community, for many years I’ve been advocating to learn Sukhomlinsky, implement Sukhomlinsky, and starting with reading educational classics, I have made the lifelong reading plan for the purpose of realizing our educational ideal.”

Of all Sukhomlinsky’s beliefs in teacher education, another priority is reading. As was mentioned above, Sukhomlinsky argued that it is the children, not the academic content, that the whole process of education should be focused on. Thus teachers must gain knowledge and insight in understanding the mental operations of children, and this knowledge and insight can only be obtained through reading, reading, and reading again. In Sukhomlinsky’s words, the real intellectual wealth of a teacher is “first and foremost their individual reading. The true teacher is a book-lover.” “A principal who is a teacher educator will develop an intellectual climate in his school in which each teacher feels a strong need for wide reading”(Long & Long, 1999, p. 107). This, of course, is quite consistent with the NEE.

Critiques of the New Education Experiment

“The Chinese way of looking at life was not primarily through religion, or philosophy, or science, but through art.” (Rowley, 1947, p. 3). This is what I felt when engaged in my research on the New Education Experiment. I became passionate while reading its literature, but I did not have the slightest idea of how to examine it from the researcher’s perspective. There are some underlying paradoxes.

Paradox 1: Considerably desirable production in practice and less desirable theory building

It is claimed that NEE has achieved outstanding outcomes and embraced by an increasing number of schools in each passing year. According to the latest statistics, the number of participating schools is 862, extending to 28 school districts and 24 provinces. Below are some data from the 2008-2009 NEE Yearbook:

- The Research Institute conducted five 2+5 days’ on-the-spot training sessions in five different districts.
- NEE teachers had fifteen books and numerous articles published, not including those shared on line in individual and group blogs.
- Dozens of teachers, such as *Shi Guahua*, *Ni Yinjuan*, *Chang Lihua*, stood out from obscurity into the national spotlight as star teachers or “Special Rank” teachers⁴.
- Online thematic reading groups, children curricular development, and “one conduct a month” (*meiyue yishi*⁵) activities continued to engage an increasing number of teachers with intense emotion and deep interest. They read books, exchanged thoughts, shared experience, discussed lesson plans and student problems, each feeling excited to talk with other teachers in

“similar size” (teachers who share the same body of knowledge, educational ideal, and use the same mutually understandable language).

- More than 30 media agencies nationwide kept a sustained interest in and attention to the New Education, interviewing NEE people and reporting NEE achievement from different perspectives.

Nevertheless, NEE has been criticized for lacking scientific rigor. Its goals are seen as too broad and ambiguous and hardly measurable. The day-to-day management, process monitoring, and product assessment are neither clear nor controllable. In a word, the model is problematic, at least in the scientific or strictly rational sense. As a planned research project of educational science of the National 11th Five-Year Plan, the evaluators gave NEE mixed reviews---criticism about its theoretical contribution and praise for its practicality. Faced with the project evaluators who critiqued the inadequacy of NEE theory building, Professor Zhu, the NEE initiator, once rebutted, as he recounted later in my interview, “Don’t merely examine our theoretic achievement, let us show you 10 to 20 outstanding teachers fostered by this model every year.”

My personal discussions with some educational experts during the 2010 annual conference suggested similar evaluative ideas regarding the NEE model. One expert from China National Institute for Educational Research (*zhongyang jiaokesuo*) expressed the following concerns in an informal interview during the conference: Their research outcomes and publications are generally substandard; and the reform model is predominantly implemented in elementary schools.

By many measures, the NEE reforms should not have been so widely espoused due to their relative inconsistency with the academic standards. However, the weakness of the model

examined from researchers' perspective seems to be the strength when interpreted by the K12 teachers, most of whom are not so academically oriented. It recognizes the value of teachers as human beings, and respects their right to happiness and development. The books and articles are written in the form of stories and reflections of the teachers who are like the teacher-readers themselves working in small schools. For many teachers, NEE is humanistic, personal, demonstrating compassion, sensitivity, and responsiveness to the joys and pains of teachers and students who are struggling in the context of exam-oriented education. Yang Dongping, Professor of Beijing University of Science and Technology, once concluded (cited in Xu, 2010, p. 3), "the appealing of New Education lies in its value of mass education, and its exploring spirit of 'doing prior to knowing'. It originated from seeking solutions to the practical problems in China's education, not from academically oriented educational experiment."

Paradox 2: Poetic art and rigorous science

Teaching is more viewed as an art than a science in China (Paine, 1990). This may partly explain the first paradox, the imbalance between NEE theory and practice. Entering the NEE world, either in the theoretical or practical domain, one can sense the lyrical quality and the romanticized flavor of idealism. It seems that it does not teach you anything specific, not at least in the technical or scientific sense, yet it provides a kind of beauty and power. It touches the heart and impacts participants, and oftentimes elevates them from the state of ego to a higher level of superego. NEE advocates emphasize not only the importance of probing the aesthetic dimension of texts and subjects that teachers teach, but also the aesthetic meaning of doing almost everything. Take, for example, a conference presentation on school culture development. It did not follow the conventional format of presenting a research paper, instead, it began with a poem, some pictures of a few wild flowers, and reeds growing in the middle of the school pond,

and then the presenter's wild imagination about the association between the school culture and the reeds, and how the reeds symbolized and conveyed the richness of the school culture. The presentation was like telling a beautiful fairy tale, expressing a spiritual pursuit of the aesthetic concern for secular transcendence.

By very few measures are the conference papers and presentations empirically testable or verifiable. Sometimes, I even take it to be more like a religious ritual than an academic conference. I once had a long dialogue with an America-based university faculty member who had observed the New Education for several years. "It has baffled me as a quantitative researcher," he confessed, "I know nowhere to start the research or conceptualize it in American standardized research format. I end up writing nothing about it although I have tried several times."

This leads to a concern: Where to start research? Is contingency theory too general to be applied as a framework for the study? Am I too ambitious to examine the whole NEE program in a dissertation?

Efficacy Theory: a conceptual framework for analyzing NEE teachers

I have learned that scientific inquiry emphasizes the importance of empirical test of hypotheses using rigorous research designs and multiple data sources. The goal is "to produce theory that can offer a stable encapsulation of 'facts' that generalizes beyond the particular." (Shavelson & Towne, 2002, p. 51).

One well accepted way to evaluate the effectiveness of a reform initiative is to measure and compare students' achievement before and after the reform is implemented. In the case of NEE this is difficult due to the huge body of participating students (more than one million) and

lack of records of test scores in the past. Moreover, when interviewed in the focus group, most teachers admitted that it has not produced a marked difference on test scores. What it has changed is students' habitual and affective development, including loving schooling, self-motivated learning, and more engagement in academic pursuits.

Considering that an important target group that NEE focuses on is teachers, who are regarded as the key change agents in school improvement, I began to examine the feasibility of doing some research on teachers. My committee member Dr. K, after reading my survey questionnaire, convinced me that narrowing the research to the teacher cohort and their view on the NEE model, as well as on themselves as efficacious teachers, could be a manageable task. Moreover, Bandura's efficacy theory, which emphasizes the effect of self-efficacy on people's behavior and goal attainment, would be highly relevant to the current study because both NEE reform and fostering the development of self-efficacy share the common stated goal of helping people live a more productive and happy life.

According to Bandura (1982), efficacy beliefs are developed on past performance, accomplishments, and emotional arousal. Moreover, efficacy beliefs are "prompts for the initiation of behavior, the expenditure of effort, and influences persistent in behavior" (Slone, & Hancock, n. d., p. 4). The relationship between personal efficacy beliefs, behavior in response to the environment, feedback and emotional arousal may lead people to decisions about whether or not to continue to engage in some action.

Judging from NEE teachers' unwavering insistence upon the reform initiative, it is assumed that they are efficacious, or have developed high perceived efficacy beliefs in the process of NEE implementation. The selection of efficacy theory as the framework for studying

NEE teachers was further reassured by Pajares (1996), who stated that efficacy judgments are “excellent predictors of choice and direction of behavior” (p. 570). By studying NEE teachers’ efficacy beliefs, and how, why, and in what conditions their efficacy beliefs may change, the New Education Experiment may be better informed of its downsides, and advantages concerning teacher development.

Defining the concepts in relation to the study

To understand what we meant by “efficacious teachers”, one needs to draw upon the academic literature concerning the basic concepts involved in efficacy research.

What is efficacy? What is the difference between efficacy and confidence; and between self-efficacy and collective efficacy? What is teacher efficacy or teacher efficacy belief? How has teacher efficacy evolved into a multifaceted construct? What do we mean when we use a new concept of comprehensive teacher efficacy? These are the fundamental questions I discuss in this section.

Efficacy is the capacity or power to produce a desirable effect. When one says efficacy, it conventionally means individual efficacy rather than organizational efficacy, or self-efficacy rather than collective efficacy. Efficacy beliefs begin in early childhood as children deal with a wide variety of experiences, tasks, and situation. However, the growth of self-efficacy does not end during youth, but continues to evolve throughout life as people acquire new skills, experiences, and understandings (Bandura, 1992).

Self-efficacy is, according to Bandura (1995), “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situation.” (p. 2). Concepts like self-concept and confidence are different from self-efficacy. Self-concept is a perception of the

self based on environmental interaction (Shavelson, Hubner & Stanton, 1976). “Self efficacy is a context-specific assessment of competence to do something specific; self-concept is a more global construct that contains many perceptions about the self, including self-efficacy.” (Hoy, Hoy, & Davis, 2009, p. 628)

Self-efficacy also differs from confidence: Confidence is a nondescript term that refers to strength of belief but does not necessarily specify what the certainty is about. one can be supremely confident that one will fail at an endeavor. Perceived self-efficacy refers to belief in one’s agentic capabilities that one can produce given levels of attainment. Confidence is a catchword rather than a construct embedded in a theoretical system. (Bandura, 1997, p. 382)

Self-efficacy is concerned about individual’s beliefs about bringing about a desired outcome. In contrast to personal self-efficacy is collective efficacy, which is defined as “a group’s shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainment”(Bandura, 1997, p. 477). It is the representation of aggregated individual efficacy in an organization; thus, it is often a concept in relation to organizational construct.

Efficacy theory applied in the research field of teacher development derived a hyponym called “teacher efficacy.” As Goddard, Hoy and Hoy (2004) contended that the term teacher efficacy is often confused with the term teacher effectiveness, so they suggested using teachers’ sense of efficacy, or teacher efficacy beliefs. Teacher efficacy is “the extent to which the teacher believes he or she has the capacity to affect student performance” (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977, p. 137). It is actually the same as teacher efficacy beliefs, which are defined as a teacher’s beliefs about his or her own ability to bring about student engagement and

success in both motivated and less motivated students (Tschannen-Moran & Woolfolk Hoy, 2001). Researchers actually use the terms of teacher efficacy, teachers' sense of efficacy, and teacher efficacy beliefs interchangeably.

The construct of teacher efficacy is elusive (Tschannen-Moran, Woolfolk Hoy, 2001), and involves multifaceted dimensions. In 1984, Patrica Ashton published a study that fundamentally expanded the concept of teacher efficacy to include two identified dimensions: general efficacy, the extent to which a teacher believes his or her students can learn; and personal efficacy, the extent to which a teacher believes that his or her students can learn under his/her instruction. Ashton argued that teachers' beliefs about their ability to bring about desired outcomes in their classrooms, and their beliefs in teaching in general, play a pivotal role in their abilities to effectively teach their students. Correspondingly, Gibson and Dembo (1984), while developing a 30-item measure of teacher efficacy, found a two-factor structure in an analysis of the items. Consequently, they named one of them *personal teaching efficacy* (PTE), and the other *teaching efficacy* or *general teaching efficacy* (GTE).

Taking Gibson and Dembo's measure as a foundation, many instruments of teacher efficacy were further developed and adapted to fit in research in different contexts. Some researchers added a subject matter dimension, and defined teacher efficacy as both context and subject matter specific. For instance, Riggs and Enochs (1990) developed an instrument to measure efficacy of teaching science---*the Science Teaching Efficacy Belief Instrument* (STEBI), and Koul and Rubba (2002) constructed individual internet teaching efficacy to evaluate teachers' efficacy in teaching through internet. Other scholars extended the teacher efficacy scale to reflect the domain of classroom management. Emmer (1990) once adapted the Gibson and Dembo's scale and made it a 36-item measure with efficacy for classroom management, one of

the three subscales, included. Still some others explored *culturally responsive teaching efficacy* (Coladarci, & Breton 1997; Siwatu, 2007) in special education, and *reform efficacy* (Castelli & Rink, 2003) in educational reform.

In terms of the number of question items covered in teacher efficacy scale, it varied from the briefest version including one single item only to the long form of 52-item Ohio State teacher efficacy scale (OSTES) developed by Tschannen-Moran and Woolfolk Hoy (2001). For example, to measure teachers' efficacy, Raudenbush, Rowen and Cheong (1992) merely asked teachers one single question, "To what extent do you feel successful in providing the kind of education you would like to provide for this class?" To demonstrate his objection to this oversimplistic tendency of teacher efficacy measure, Bandura developed a 30-item instrument with seven subscales: efficacy to influence decision-making, efficacy to influence school resources, instructional efficacy, disciplinary efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement, and efficacy to create a positive school culture. Moreover, based on Bandura's scale, Tschannen-Moran and Woolfolk Hoy constructed a full length of 52-item scales including three subscales: teaching strategies, classroom management, and student relations.

A lengthy review of the concept of teacher efficacy did not offer facility in picking one conception out to fit the current research: instead, it increased the conceptual confusion and left a dilemma of uncertainty. As a matter of fact, none of the existing teacher efficacy scales is useful for the study because it does not intend to test how much belief teachers have in their capability in bringing about reform-designed change. The concern of the study is how much *more* confident teachers feel not only in their capability but also their willingness, efforts, behaviors, and commitments in generating desired reform outcomes, compared to before they participated in

NEE. To keep a balanced consideration of reviewed teacher efficacy measure and purpose of this study, I formulated a new term *comprehensive teacher efficacy*, which includes multiple dimensions within and beyond teacher efficacy in the general sense. *Comprehensive teacher efficacy* or *comprehensive efficacy* (CE) in relation to the NEE reform initiative refers to the general construct of teacher efficacy that contains multiple, mutually supportive attempts, efforts, motivations, and capabilities to bring about the effective implementation of a reform initiative. More specifically, it includes, but may not be limited to:

- Self-efficacy (with an add-on affective dimension);
- Collective efficacy (including school collective efficacy as well as NEE community collective efficacy);
- Collaborative efficacy;
- Reform alignment efficacy;
- Efficacy doubts (vs. efficacy beliefs).

I will further discuss this *Comprehensive Efficacy* construct in details in the *instrumentation and materials* section of Chapter 3.

Research purpose and research questions

As will be seen in the literature review of Chapter 2, prior research investigated factors influencing teacher efficacy basically from three perspectives: the effects of teacher demographic and contextual variables on teacher efficacy; the effects of intervention programs on teacher efficacy; and the effects of teacher attitude toward the reform initiative on teacher efficacy.

Findings were mixed, and explanations were diverse, but one shared view appeared to be that teachers' ideas and attitude toward the innovation program influenced teacher efficacy and behavior. Teachers' view of the program is vital not only for program implementation but also for development of efficacy beliefs: if teachers understood the meaningfulness and shared the values of the program, they would become more motivated and committed to it, and more likely perceive the implementation process as a happy act of empowering themselves. Consequently, their sense of efficacy would be enhanced. Based on this analysis, the current study shifted its focus from merely on the simple, direct relationships between the antecedents and teacher efficacy to the more complicated relationships between the two through the mediating effect of teachers' view of the reform model.

The purpose of the research is to identify both the direct and indirect factors that predict the changes of the NEE participating teachers in viewing themselves as efficacious teachers. The general hypothesis is that teacher background (including personal factors, contextual factors, and NEE participation) affects teachers' view of comprehensive efficacy both directly, and indirectly through their view of the NEE model. The fundamental research question is: How do participating teachers perceive the NEE model and what is its impact on their comprehensive efficacy? And what leads to their current, changed perception of their comprehensive efficacy? To be more specific, the following sub-questions have been formulated:

1. What is the current state of the participating teachers' view of the NEE model?
2. What is the current state of the participating teachers' view of their own comprehensive efficacy?

3. Does the individual teacher background predict how teachers view the NEE model?
4. Does participation in NEE predict how teachers view the NEE model?
5. Does the individual teacher background predict teachers' view of comprehensive efficacy?
6. Does participation in the NEE predict teachers' view of comprehensive efficacy?
7. Does teachers' view of the NEE model (TVM) predict teachers' view of comprehensive efficacy (TVCE)?
8. Does TVM mediate the relationship between the independent variables of individual teacher background and participation in NEE, and the dependent variable of TVCE?
9. How is it manifested in specific school contexts that the individual teacher background and NEE participation yield changes in teachers' view of comprehensive efficacy as well as their view of the NEE model?

Questions 1-8 will be examined by using quantitative methods, while Question 9 will be addressed by qualitative methods. The ultimate aim of the quantitative part is to investigate the more complex relationships among individual teacher background, participation of NEE, TVM, and TVCE in addition to their simple, direct relationships. The qualitative part aims to provide a more in-depth interpretation for understanding how teachers perceive NEE, assign meanings to it, and respond to it in the educational reform setting.

Chapter 2 Literature Review

As indicated in the first chapter, the New Education model appears to be an activists' campaign, a call for teachers to actually do something to address the perceived malady of the current test-oriented education in China. It focuses on teacher emotional engagement, affirmation of teacher efficacy, and commitment to education. It highlights the value of doing, and fostering a love of reading among teachers as well as students. This chapter, however, presents a literature review for the current study. It begins with some discussion about Chinese teachers' roles and functions defined and redefined in the traditional and postmodern times, followed by some introduction to teacher education in China, with which Western readers would feel less difficult to understand the rest of the study. Then it moves to review the body of literature on teacher efficacy research: its theoretical underpinnings, empirical studies, cross-cultural studies, studies in relation to educational reforms, and studies done in China. Finally it concludes with a critique of the reviewed literature, and a discussion of the significance of the current study.

How teachers are defined in the Chinese context

As a Chinese person, I held many taken-for-granted views on American education, most of which are incorrect and even absurd from an insider's perspective. For instance, I used to believe urban schools in the U. S. were superior to suburban and rural schools because that is the fact in China. Also I thought each classroom was assigned to a particular class of students, and it was teachers rather than students who had to move to different classrooms for their courses, until some day I visited a junior high school in Lawrence, discussing the problem with the principal in confusion while witnessing students move between classes. To help Westerners avoid such embarrassment and understand the study better, I think it is necessary to provide for some

common-sense background knowledge with regard to teachers' roles and teacher education in the Chinese context. Each part in this section starts with a cited story capturing certain aspects of the characteristics of Chinese education.

Traditional roles of Chinese teachers

My lessons with Teacher Wei had come to involve more than reading and writing assignments. She was a teacher in the Chinese tradition, taking responsibility not only for my academic progress but for my development as a person. She had advice for me concerning my family and friends, my diet, my clothing, my study and exercise habits, and my attitude toward life. At times I got impatient with her and explained that in America, children leave for college and like to make decisions for themselves after that. She was appalled. "Don't your parents and teachers care about you?"

---Salzman, 1986, p. 36

This quote from Salzman in *Iron and Silk* captures the essential features of a typical Chinese teacher that make him different from his Western counterparts. For thousands of years, due to the fact that China had little or no contact with Western countries, education was practiced and theorized in a way distinct from Western tradition. Teachers in China are often likened as "engineers of the human soul," and "gardeners of young minds." Teachers generally take the dual responsibility of a mentor and parent for the all-round development of the students. Teachers in China are highly respected, but they are also "expected to behave like mentors, to involve themselves in the students' lives, to know about them as people, and to guide them closely in moral, personal, or educational decisions" (Leki, 1992, p. 56).

Since ancient China, education has been taken as a political and moral tool. The ruler of the empire who wished to transform people and to perfect their manners and customs were exhorted to start from lessons at school. Likewise, the country should be ruled by the superior men who were fostered with virtue and wisdom. The Communist government of the People's

Republic of China has inherited this educational tradition and manifested the political, moral orientation in educational policies and practice.

To accomplish this mission of cultivating people with those desirable qualities, teachers, due to the fact that “example is better than precept”, are often expected to be an exemplary model, that is, a noble person with virtue and knowledge. This idea is manifested in *the Teachers Professional Ethics* (2009), *the Education Law* (1995), and *the Teachers Law* (1993), each of which attaches importance to teachers’ obligation of imparting knowledge and educating people, and their role as a person with a firm political stand of socialism, a noble moral character, a deep knowledge base, and commitment to the educational cause.

The dominant rhetoric of “imparting knowledge,” “memorization,” and “test score”

The trouble with Chinese teachers is that they’ve never done any real teacher training courses so they don’t know how to teach. All they do is follow the book. They never give us any opportunity to talk. How in the world do they expect us to learn?

---An Australian student studying in Shanghai in 1988

Australian teachers are very friendly but they often can’t teach well. I never know where they’re going; there’s no system and I just get lost. Also, they’re often badly trained and don’t really have a thorough grasp of their subject.

---A Chinese student studying in Sydney in 1990

The two comments quoted by Tang and Absalom (1998, pp. 177-178) illustrate a commonly observed distinction between Chinese and Western instruction models. In China systematic knowledge transmission is an essential element for teaching effectiveness. Both the teacher and students value the mastery of subject content rather than development of critical thinking. This mirrors the long term influence of Confucianism (Guo, 1987), which proposes “*shu er bu zuo, xin er hao gu*”, literally meaning “recounting but not composing /creating,

believing and loving what is ancient.” The traditional idea of seniority and teacher authority was extended and deepened by some other historically influential figures such as Xun Kuang (298-238 B. C.), Han Yu (768-824), and Liu Zongyuan (773-819) (Sun, 1992). Xun advocated “*shi yun yi yun*,” that is, “saying whatever the teacher says.” He further illustrated that if one talks without mentioning his teacher, he is a betrayer, and if one teaches without naming his teacher, he is a traitor (*yan er bu chen shi wei zhi pan, jiao er bu chen shi wei zhi bei*).

In line with the idea of teacher centeredness and book knowledge priority, memorization and imitation inadvertently become the predominant learning approach, and the test score turns out to be the most significant, if not the only indicator demonstrating learning outcomes. Memorization or rote learning as a Chinese learning approach has received much criticism from many Western scholars. However, studies of some researchers (Marton, Dall’Alba, & Tse, 1996; Wong, 1999) revealed that Chinese rote learning is not the end in itself but is used as a strategy for achieving deeper understanding. Dahlin and Watkins (2000, cited in Li, 2004) also found significant cultural differences in using rote learning. They reported that, different from British students who generally used repetition as a strategy to check if they really remembered something, Chinese students used it to create deep impressions to lay a foundation for developing understanding. Moreover, understanding was viewed by British students as a process of sudden insight, but for Chinese students, it is believed to be a long process that requires extensive mental effort.

Chinese students believed that learning is a gradual process that requires tremendous dedication and methodical steps. Generally, they adopt four steps to accomplish any learning task (Pratt et al., 1999, cited in Li & Fischer, 2004)). Initially they commit the new material to memory; next they try to understand the intention, style, and meaning of the material. Then they

try to apply their understanding to situations that call for use of such knowledge, and finally they enter a deeper level of questioning and modification of the original material. Except for the last step which is verbally interactive by nature, the first three steps may call for more solitary learning and contemplation, which De Bary (1983) reported to be an important aspect of Chinese intellectual tradition. “Clearly this style is not bound by the immediate verbal exchange at the moment but can extend over a period of days, weeks, months, and in some cases even several years (as a doctoral student may publish a paper to challenge his mentor’s ideas with which the students disagreed several years earlier)!” (Li, & Fischer, 2004, p. 393).

Paine (1990) recalled her childhood experience of studying Chinese brush painting, and acknowledged that only after months of copying the teacher’s work did she come to understand the Chinese rationale that expression of our creativity comes only after mastery of the form. “Mastery precedes creativity.” “Practice makes perfect.” These ideas are deeply rooted in Chinese educational philosophy and embodied in daily educational practice like teaching of calligraphy, painting, literacy, and numeracy.

The teacher as virtuoso

Finally, I got an opportunity to have a public class teaching “*Wang Erxiao*¹.” All were overturned and redone, one lesson design after another, one trial teaching following the next. The public class was to be held the next day. That afternoon I was left to do the final trial teaching after office hour. In my eyes, rows of empty seats in front of me were my lovely students...I was so engrossed that I totally forgot to pick my kid in the pre-school. Losing her patience to wait any longer, the teacher sent my kid to where I was. But the class was not completed...thus I went on with the rehearsal with my kid in one hand, and chalk in the other...

---Dou Guimei, special rank literacy teacher

From: http://www.ljedu.gov.cn/html/jymj_963_4587.html

Influenced by the basic conception of learning as absorption of knowledge in a systematic way, teaching in China is characterized as methodically conventional, both the textbook (the source of knowledge) and the teacher (the presenter of the knowledge) are of central position for the class learning activities. Paine (1990) beautifully labeled teacher of this type as virtuoso because “the focus in teaching was on performance, the goal to produce a virtuoso performance.” (p. 50). However, “true virtuosity involves not simply ‘technical wizardry,’ but also ‘heart.’ For teachers, this means that teaching requires mastering the technical (i.e., knowledge) base, but the ideal is to be able to transcend that.” (p. 54).

Teachers in China, especially those at k12 educational level, generally do not think much about what to teach, but find their fulfillment in how to teach the designated content well, how to achieve the best teaching and learning outcomes skillfully and artistically. The making of good teachers, in addition to their teaching flair, lies in the mastery of subject matter on the one hand, and familiarity of students on the other. Just like a good musician can always bring his audience into the performance, a good teacher must successfully engage his students into active learning and stimulate their thinking. Excellence of teaching is embodied in such qualities as effectiveness of classroom management, grace of the calligraphy, elegance of teaching language, incisiveness of text analysis, and uplifting moral power. “Teaching can be performed with such skill and grace that, for the student as well as for the teacher, the experience can be justifiably characterized as aesthetic.” (Eisner, 1979, p. 153).

Chinese teachers redefined in the postmodern global context

The students get rebellious; the classroom is chaotic; the teachers become indifferent; and on the four walls are all blackboards!

Compared with the feeble and empty educational theories, the whirlwind of *Dulangkou*, which is powerful enough to pull down all old conventions, has not created, at the level

of China's educational reality, any dazzling "miracles," nor unreachable "wonders," but "libido" for stronger and more prosperous life of education.

—Li, 2006, p. 2

"Schools are remarkably traditional places" (Walker, D. F. & Soltis, J., 2004, p. 81).

Teachers nowadays in China have not changed much compared to those who taught a few decades ago. Nevertheless, in this era of globalization, they are constantly challenged and destabilized by new ways of teaching that derive from the Western traditions of education. The traditional Chinese way of teaching is criticized, both home and abroad, as spoon-feeding, lack of interaction, and creativity killing. The nationwide new curricula reform advocated a shift from teacher-centered to student-centered teaching, and from "a subject matter focus that designates a common knowledge to be learned by all students, to a concern for how that knowledge relates to the life worlds of individual students." (Zhang, 2006, cited in Carson, n.d., p. 1).

The new curricula reform has brought drastic changes and challenges in terms of curriculum contents, teacher identity, student learning, and even the role of school (Carson, n. d.). Worse than this, some local implementation under the principal's leadership went to the extreme. A radical instructional reform forcefully imposing this change to student-centeredness is the 10+35 *Dulangkou* model (Li, 2006), which means in any class at *Dulangkou* school, teacher talk can only take the maximum of 10 out of the 45-minute class time, whereas 35 minutes must be left to students. Traditional teachers who had difficulty in adapting themselves to the new model were even forbidden to talk at all in class, and this is the so-called extreme form of the "0+45" model. Below is a brief description of how this model has been implemented:

While teachers are imposed to successfully conduct "three classes" (demonstration class, standard-reaching class, and follow-up class), they are faced with the punitive measure of

“talking, warning, and stopping”. If a teacher were unable to reach the standard for the first time, the principal would point out the problematic points and direction for future work by “talking” to him/her in person about the instructional requirements, about teachers’ role, about student performance, about classroom discipline, and about reform purpose; if he/she were unable to reach the standard for the second time, a “warning” would be announced in the meeting for subject-shared teachers; and if it were the third time failing, the teacher would be ordered to “stop” teaching for one week, only to audit classes conducted by outstanding teachers, to study educational reform theory and instructional skills. The professional leader is responsible for tutoring him/her.

Having this obsessive goal of drastically changing our education in a short period of time, some radical educators transform the educational reform into a revolution like the *Dulangkou* model in Shandong Province (Li, 2006). Consequently, teachers suffer miserably from the loss of their familiar professional identity. Since the curricula reform sets a new tone for teacher development departing from China’s educational past and Confucian tradition, and radical reformers push it forward without considering teachers’ acceptability, and teachers in China are faced up with threatening challenges in the 21st century. However, to break away from the centralized teacher/subject content authority, which is deeply rooted in centuries of Chinese education, is definitely a tremendous project that may require enormous effort and dedication involving generations of teachers themselves, and even members of the whole society.

Regardless of the Western impact, the dual function of “teaching the book and educating the people,” and the traditional emphasis of “the most knowledgeable makes the teacher, and the most virtuous makes the example,” (*xue gao wei shi, de gao wei fan*) which is still presented in

the *National Outline for Medium and Long-term Education Reform and Development 2010-2020*, is established as the cornerstone for teacher education in China.

Teacher education in China

Pre-service teacher education

The training of new teachers for elementary and secondary schools is largely the responsibility of normal colleges and universities although some comprehensive higher educational institutions also participate. Overall, students of the 341 normal universities/colleges accounted for 55% of the total enrollment of normal institutions. Students who are admitted as future teachers in comprehensive higher educational institutions accounted for 45%. Comprehensive higher educational institutions participating in fostering future teachers added up to a total of 214 (Ministry of Education of China, & Chinese National Commission for UNESCO, 2008).

The whole program in higher learning is basically the same, involving elements of academic learning, field visit and class observation (*jianxi*), pre-internship teaching (*shijiang*), and teaching practicum (*shixi*). The curriculum framework for pre-service teacher education reflects an academic and intellectual orientation (Shen & Xu, 2001). About 70% are subject specialized courses, education coursework (psychology, pedagogy, teaching methodology) only accounts for 6-10%, public courses (politics, political economics, English, ethics and law, philosophy) account for about 15%. Teaching practicum, which is often planned in the third or fourth year, lasts about 8 weeks. It normally includes one week of preparation and orientation, six weeks working in the schools, and one week of “summing up.” During the six weeks at school, student teachers not only observe and practice academic teaching, but also perform the

role of *banzhuren*, a certain subject teacher with additional responsibility for the intellectual, physical, and spiritual development of a whole class of students. It is through this experience that student teachers get into close contact with students, and develop understanding and love toward students.

In-service teacher education

In the United States, a teacher took 30 students to learn swimming at the beach. The teacher ordered:

“Jump!” “You have to struggle! Or you’ll drown!”

Finally, 20 drowned, 10 learned swimming.

In China, in the same swimming class, the teacher first instructed and demonstrated in every detail, and then took the students to the beach. Nobody drowned, and all learned how to swim.

The ten Americans who learned swimming must be super, but the cost was the other 20 lives; the 30 Chinese all learned swimming, but nobody knew who were the 10 gifted swimmers who could learn by themselves.

The conclusion is both educational models have merits and demerits. An intelligent way is to seek the “middle ground.”

---Gu Lingyuan, in a conference address, 2004

Teacher professional development is always made an important issue in China. Teachers are required to get rotating training every five years. And their training-related performance serves as a key index to be considered for teacher compensation or promotion.

To ensure the effectiveness of in-service teacher education, three administrative levels are involved, with responsibilities well defined. The top level of the educational system (Ministry of Education) is to make relevant policies, organize researchers and educators to conduct experiments exploring new approaches, and institutionalize the best practice and norms related to teaching. Every district and county, as a result of educational policy shift to decentralization, is

responsible for organizing the local in-service training activities, timetable, management and evaluation. At the bottom of the school level, school-based teacher development is strengthened and practiced according to its own status quo. Nevertheless, during the period of the national New Curricula Reform when all teachers were required to receive training before teaching the new curriculum (Ministry of Education of China, 2001), a national teacher training program was organized by Ministry of Education with the assistance of lower educational administrative departments. It used a cascade model (Su, 2003), which means “seeding reform-minded ideas through the training of ‘backbone’ (*gugan*) teacher trainers,” (Paine & Fang, 2006, p. 282), and then using these backbone teacher trainers to lead full-scale training across China.

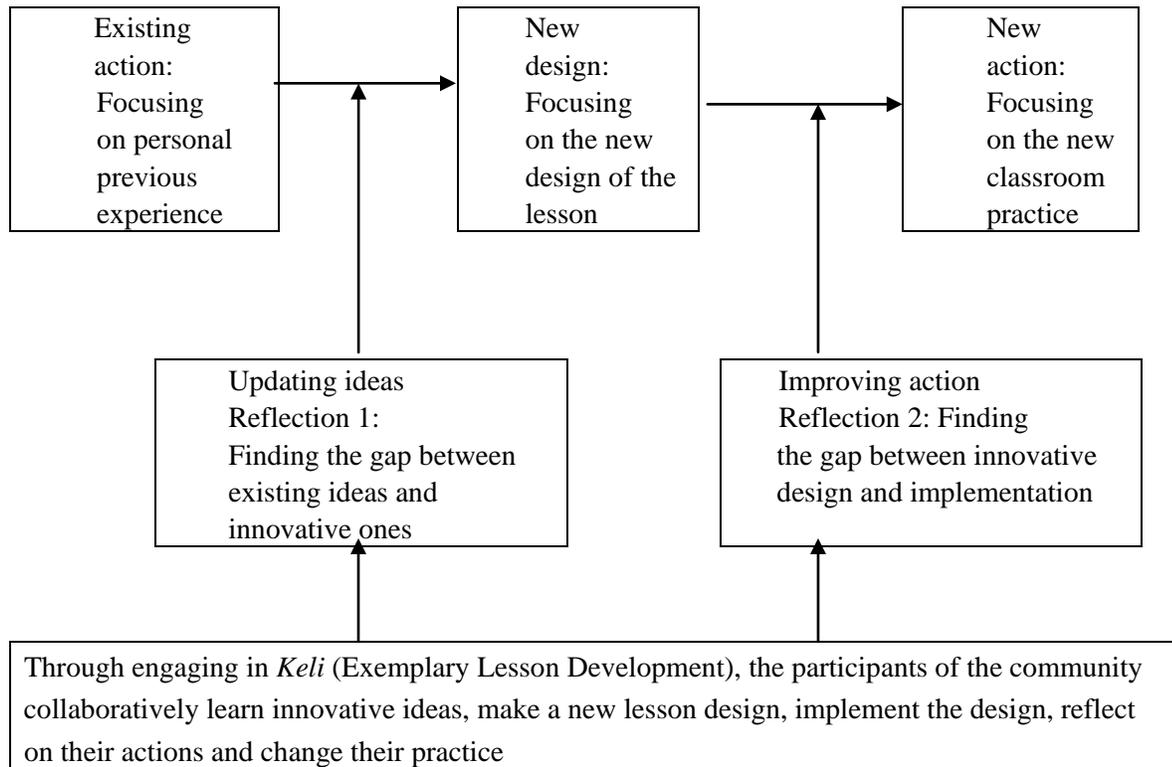
The international discourse of teacher development exerted great influence on China’s in-service teacher education in terms of what should be entailed and what approaches should be adopted. Although the delivery mechanism (Freeman & Johnson, 1998, Freeman, 2002), the concept of what experts knew or thought was important about teaching still plays a considerably significant role in teacher professional development, some changes are noticeable in terms of considering the thinking of the teacher (Freeman, 1998), and providing teachers with opportunities to learn and think (Hargreaves & Fullan, 1992). Concepts like the reflective teacher, the inquiring teacher, or the action researcher are catchwords and play an un-neglectable role in re-conceptualization of teacher professional learning and development. In the cyclical reflective approach, teachers get to know and follow the cyclical process of planning, making provision, acting, collecting data, analyzing the data, evaluating and reflecting and then planning the next step (Pollard & Tann, 1987; Schon, 1983; Pollard, 2008). And in the inquiry-oriented approach, teachers learn to make systematic inquiry in their own classrooms, develop their

practice and share their insights with other professionals (Stenhouse, 1975; Campbell et al, 2004; Ponte et al, 2004; Cochran-Smith & Lytle, 2009).

In addition to the globally convergent practice and approaches, teacher professional development in China has generated its own hybrid model because “what seems like a process of global convergence occurs in interaction with the persistence of more organic structures that have long been part of China’s teaching cultures.” (Paine & Fang, 2006, p. 279).

One notable model developed by Professor Gu Lingyuan based on reflection on the Chinese teaching traditions and Western notions of teacher professional development is called the *Keli* (Exemplary Lesson Development) model (Gu & Wong, 2003; Huang & Bao, 2006; Paine & Fang, 2006). Centered on developing an exemplary lesson, the collaborative *Keli* group consisting of researchers and teachers underwent a lengthy process of new theory learning, lesson planning, lesson delivery, post-lesson reflection, and lesson re-delivery. The exemplary lesson is generally developed through three teaching stages: Existing Action, New Design, and New Action, and two reflections: Updating Ideas and Improving Action. The diagram below displays the basic steps and sequences of the model. The two reflections and the follow-up action are crucial in this model because they facilitate to 1) find the gap between the existing practice and newly acquired educational ideas so that the goal of updating ideas is truly achieved; 2) to find the gap between the actual students’ gain and rational teaching design aiming at a smooth shift from theory to practice.

Figure 2.1 The *Keli* Model: A fundamental process for implementing *Xingdong Jiaoyu* (Action Education)



Source: Gu & Wong, 2003, cited the English format in Huang & Bao, 2006, p. 280.

The rationale of the model is in accordance with Lave and Wenger’s (1991, 1998) theory of social learning, which holds that professional development should be supported through communities of practice where teachers reflect on their practice, “articulate and re-conceptualize their pedagogical epistemologies within a collaborative framework.” (Huang & Bao, 2006, p. 283). Apart from this, the model is also informed from Vygostky’s conception of “Proximal Development Zone” and “Scaffolding,” each of which emphasizes the leadership and guidelines of adults or experts above general peers in the collaborative community.

It is acknowledged that the Chinese *Keli* model (also called Action Education) developed by Gu and his colleagues is a hybridized innovation, however, it still draws information heavily from the widespread Chinese practice of teachers rehearsing their lesson plans and teaching to perfect lessons. Therefore, the virtuoso nature of Chinese teaching style is self-evident. To attain the effect of virtuoso requires, in addition to a solid knowledge base and repeated practice, particularly the passion and enthusiasm to sustain teachers' hard work behind it. Thus, nurturing virtuosity involves a more intangible subjective and emotional commitment to education.

Educators and school administrators in China talk a lot about the need as well as approaches to stimulate teachers' passion, to build their enthusiasm, to develop their initiative, and to nurture their love toward education (Shi, 1998; Jiang, 2002). Furthermore, marked by Huang Wei's paper on teachers' belief in teaching efficacy in 1992, China joined the community of research on teacher efficacy and its relevance to teachers' engagement as well as teaching effectiveness. In the next section, I will review the literature, both conceptual and empirical, on teacher efficacy research, its theoretical underpinnings, its cross-cultural transferability, teacher efficacy in the milieu of educational reform, and its status quo in China. I will conclude this section with some critiques on the reviewed literature, some discussions of its relevance to the current study, and the possible contribution the study may make to the body of research on teacher efficacy.

Conceptual issues in teacher efficacy

Bandura (1977, 1994, 1995) believed that positive self-efficacy produces many benefits. People with positive self-efficacy tend to approach difficult tasks as challenges rather than as threats. While encountering threatening situations, they believe that they are capable of

exercising control over them. This efficacious outlook facilitates to develop intrinsic interest and deep engrossment in the activities in which one is engaged. Moreover, it helps to reduce stress and fear in uncertain situations. Individuals with this outlook are more likely, according to Bandura (1994), to set challenging goals and maintain strong commitment to them. “They heighten and sustain their efforts in the face of failure and quickly recover their sense of efficacy after failures or setbacks.” (p. 71)

In contrast, people with weak sense of self-efficacy are more likely to avoid difficult tasks and view them as personal threats. “They have low aspirations and weak commitment to the goals they choose to pursue. When faced with difficult tasks, they dwell on their personal deficiencies, on the obstacles they will encounter, and all kinds of adverse outcomes rather than concentrate on how to perform successfully. They slacken their efforts and give up quickly in the face of difficulties. They are slow to recover their sense of efficacy following failure or setbacks.” (Bandura, 1994, p. 71)

Triggered by Bandura’s thinking, and Rotter’s early research on internal-external locus of control in his social learning theory (1966), educational researchers hypothesized that teachers with positive self- efficacy would also be more likely to set challenging goals to acquire knowledge and problem-solving strategies needed to become more effective classroom teachers. Researchers in the Rand Corporation (Armor et al, 1976; Berman et al, 1977), who did the first studies of teacher efficacy, and whose work has been believed to spark interest in teacher efficacy (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), concluded that teacher efficacy was strongly related to variations in reading achievement among minority students. More generally, teachers’ sense of efficacy had a significant positive correlation not only with student

performance but also with the percent of project goals achieved, the amount of teacher change, and the continued use of project methods and materials after the project ended.

Empirical research on teacher efficacy

Much empirical research on teacher efficacy appeared to support the conceptual findings in general. An extensive body of literature indicated that teacher efficacy beliefs are positively related to teacher engagement, teaching effectiveness, and student performance. Coladarci (1992), and Evans and Trimble (1986) reported that positive teacher efficacy beliefs lead to more committed teachers. Moreover, teachers with high self-efficacy are: more enthusiastic about their work (Allinder, 1994; Guskey 1984; Hall, Burley, Villeme, & Brockmeier, 1992); less likely to leave the profession (Burley, Hall, Villeme, & Brockmeier, 1991; Glickman & Tamashiro, 1982); persistent, resilient, and less critical of failing students (Ashton & Webb, 1986); more likely to try innovative methods and be open to new ideas (Allinder, 1994; Berman et al, 1977; Cousins & Walker, 2000; Guskey, 1988; Meijer & Foster, 1988; Smylie, 1988); use “hands on” teaching methods more regularly (Riggs & Enochs, 1990); and show signs of more effective planning and organization (Allinder, 1994). Looking from the students’ perspective, students taught by teachers with high teacher efficacy beliefs: demonstrated high levels of self-efficacy (Anderson, Greene, Loewen, 1988); were more motivated (Midgeley, Feldlaufer, & Eccles, 1989; Woolfolk, Rossof & Hoy, 1990); were higher achievers (Anderson, Greene & Loewen, 1988; Armor et al, 1976; Ashton & Webb, 1986; Moore & Esselman, 1992; Ross, 1992; Watson, 1991); and were more positive about their teachers and school (Woolfolk, Rossof, & Hoy, 1990).

Nevertheless, a number of studies questioned the validity and credibility of teacher efficacy studies, and suggested re-conceptualizing teacher efficacy research to include more

interpretative studies and studies on *teacher efficacy doubts* (Wheatley, 2002, 2005). Although many studies reviewed reported teachers with high efficacy were likely to be more open to new ideas, some claimed that teacher efficacy was associated with traditional teaching, and there was a tension between teachers' exercise of personal control and outcome valued in democratic teaching like developing student autonomy and seeking external support (Burrill, 1997; Kamii, 1984; Smylie, 1988; Stein & Wang, 1988; Wheatley, 2002).

Another strand of research focused on exploration of the relationships between personal teacher attributes, organizational characteristics, and teacher efficacy. Relevant research provided conflicting findings on whether personal teacher characteristics such as gender, age, teacher training, teaching experience, subject taught, racial and ethnic background can influence teacher self-efficacy. One rather consistent finding was that female teachers reported higher personal teaching efficacy than males, either in elementary school (Anderson, Greene, & Loewen, 1988; Lee, Buck, & Midgley, 1992; Cheung, 2006, 2008), in special education (Caladarci & Breton, 1991), or in high schools (Raudenbush, Rowen & Cheong, 1992). However, in a study investigating teacher self-efficacy in teaching science, Riggs (1991) reported that male teachers, both pre-service and experienced, had higher efficacy beliefs than females. This reversed finding seemed to suggest that teacher self-efficacy is influenced not only by gender, but also by subject matter. Ross, Cousins, and Gadalla (1996) also pointed out that levels of teacher efficacy depended on subject matter and the particular group of students they taught with each class period. Raudenbush, Rowen, and Cheong (1992) further reported that teachers had lower self-efficacy for non-academic track classes as compared with academic and honors classes.

There appeared to be few studies reporting the relationship between gender and general teaching efficacy. However, studies investigating effects of teaching experience on teacher efficacy, both personal and general, were not few. Several studies found that general teaching efficacy declines with teaching experience although self-efficacy still increases with it. Dembo and Gibson (1985) stated that pre-service teachers reported the highest confidence in the ability of schools to overcome the negative effect of children's homes, and that their general teaching efficacy declined when teaching experience increased. Similar findings were reported by Bandura (1993), and Hoy and Woolfolk (1990; 1993). Some researchers found that teacher self-efficacy increased with teaching experience (Hoy and Woolfolk, 1993; Rubeck, & Enochs, 1991; Wenner, 2001; Isler, 2008). However, De Mesquita and Drake (1994) reported that teachers in a nongraded educational reform reported a lower sense of self-efficacy when their teaching experience increased. The explanation concerning the decline in general teaching efficacy was that initially teachers were likely to be idealistic about what school could do but then they might become more knowledgeable about student variability and realize that some students with serious problems are truly beyond instructional amenability. In contrast, increase of teacher self-efficacy with experience could be the results of teachers getting more skillful in their teaching practice.

Findings on relationship between teachers' educational level and efficacy beliefs were mixed. Hoover-Dempsey, Bassler, and Brissie (1987) reported a slightly positive correlation between teacher efficacy and highest degree in elementary teacher respondents. Interestingly, Moore and Esselman (1992) drew an opposite conclusion that teachers who lacked an undergraduate degree had higher efficacy beliefs. Still Hoy and Woolfolk (1993) revealed that

educational level, namely, graduate training, was positively related to personal but not to general teaching efficacy.

Although some researchers (e. g., Sorrells, Schaller, & Yang, 2004) suggested that teachers' racial and ethnic backgrounds influenced their self-efficacy, others found no relationship between the two (Tschannen-Moran & Hoy, 2007). Tschannen-Moran and Hoy (2007) further stated, "demographic variables such as race and gender were not found to be systematically related to the self-efficacy beliefs of either novice or career teachers." And they further pointed out, "demographic variables have typically not been strong predictors of the efficacy beliefs of teachers." (p. 952). This was later supported by Azar's (2010) study.

Research demonstrated that organizational variables had an impact on teacher efficacy beliefs. School level was a significant predictor of teacher efficacy (e.g., Tschannen-Moran and Woolfolk Hoy, 2007). Elementary school teachers frequently reported higher levels of efficacy than high school teachers (Greenwood et al., 1990; Guskey, 1982; Parkay et al., 1988) and middle school teachers (Fuller & Izu, 1986; Midgley, Feldlaufer, & Eccles, 1988). However, grade level was likely to be negatively related to teacher efficacy either in elementary schools or in high schools (Anderson et al., 1988; Raudenbush et al., 1992; Ross, 1994a; Isler, 2008). Raudenbush and others (1992) found that classroom characteristics predicted a substantial proportion of the variance in self-efficacy beliefs of high school teachers. Interestingly, Newman, Rutter, and Smith (1989) revealed that when school features were added to a regression model containing personal characteristics, the proportion of variance in explaining teacher efficacy was tripled, while the effect of student ability declined in half, and the effect of race and urban location was actually eliminated. School characteristics associated with higher teacher efficacy were high performing (Smylie, 1988), orderly behavior of students (Newman et

al., 1989), lower stress (Greenwood et al., 1990; Hall, Burley, Villeme, & Brockmeier, 1992), lower rate of teacher burnout (Brissie, Hoover-Dempsey, & Bassler, 1988), high teacher collaboration ((Rosenholtz, 1989; Ross, 1992), and desirable leadership actions such as supporting teacher professionalism (Hoy & Woolfolk, 1993; Resenholtz, 1989), and participation of school decision making (Berman et al., 1977; Fletcher, 1990; Raudenbush et al., 1992). Ross (1994b) summarized prior research results investigating school characteristics and teacher efficacy, and concluded that teachers had higher efficacy beliefs “in schools with satisfied teachers, as measured by commitment to teaching (Evans & Tribble, 1986), willingness to stay in the profession (Glickman & Tamashiro, 1982), satisfaction with the current role (Brissie et al., 1988; Caladarci & Breton, 1991; Guskey, 1988), and willingness to re-choose teaching as a career (Trentham, Silvern, & Brogdon, 1985)” (p. 14).

Similar to individual teacher efficacy beliefs, which are perceived as good predictors of individual behavior, collective teacher efficacy beliefs, that is, teachers’ shared beliefs that the efforts of the faculty as a whole have a positive effect on students, are strongly predictive of between-school differences although it is “the most recent construct developed and has received the least attention from educational researchers” (Goddard, Hoy, & Woolfolk Hoy, 2004, p. 3). In the study of 452 urban elementary teachers in 47 schools, Goddard, Hoy, and Woolfolk Hoy (2000) found that a one-point increase on a six-point scale in a school’s collective efficacy score was associated with about an 8.5-point increase in student achievement scores. They further found that teachers’ beliefs of collective efficacy were still strong predictors of academic performance when taking into consideration the variables beyond a school’s control, namely the effects of student demographics such as race, socioeconomic status, and gender. Moreover, Goddard and Goddard (2001) found that over and above school contextual factors,

socioeconomic status, and prior student achievement, collective teacher efficacy was the only significant predictor of teacher self-efficacy differences among schools. In other words, the collective teacher efficacy of a school explains variations between schools in teacher self-efficacy (Goddard & Goddard, 2001). They pointed out that when a teacher with low self-efficacy joins a faculty high in collective teacher efficacy, that teacher's self-efficacy is more likely to increase, but it is not true for the reverse: a teacher high in self-efficacy is not going to have much of an effect on a faculty low in collective teacher efficacy.

Theoretical underpinnings of teacher efficacy research

Over the past few decades, it is acknowledged that teacher efficacy has evolved from Rotter's (1966) locus of control theory (Goddard et al., 2000; Tschannen-Moran et al., 1998; Wheatley, 2002). However, it could be seen as borrowing more heavily from Bandura's (1977) study of self-efficacy, expounded in his social cognitive theory (Wheatley, 2002). Some researchers (Goddard, Hoy, & Hoy, 2002) argued that these two conceptual strands have caused confusion surrounding the term "teacher efficacy". They pointed out that whereas some educators have presumed that Bandura's (1977) perceived self-efficacy and Rotter's (1966) internal locus of control are for the most part corresponding, there are important differences. In his 1997 book, Bandura clarified the distinction between the two terms. The former (self-efficacy) refers to beliefs about whether one can produce certain actions, while the latter (lotus of control) refers to beliefs about whether actions affect outcomes. In fact, Bandura (1997) used data to demonstrate empirically that there is at best a weak correlation between these two constructs. He argued that self-efficacy is a strong indicator of behavior, whereas internal locus of control is only a weak one. Rotter's locus of control is basically concerned with causal beliefs about the relationship between actions and outcomes, not with personal efficacy. One may

believe that a particular outcome is internally controllable, but he may still have little confidence in accomplishing the necessary actions.

According to Tschannen-Moran, Woolfolk Hoy and Hoy (1998), one significant influence on teacher efficacy beliefs is the attribution analysis and interpretation of Bandura's (1977, 1995) four sources of information about efficacy: 1) mastery experience---one's prior experience or performance has significant effect on one's sense of efficacy; 2) vicarious experiences---the experiences of seeing how a task is done by others; 3) social persuasion --both feedback and pep talks are influential in convincing an individual to work on a task that may seem far too difficult to accomplish; and 4) physiological and emotional states--physical signs and bodily cues such as fatigue or tension may cause people to react in different degrees to our ability to follow through on a task.

Bandura (1995) claimed that the most powerful source of efficacy beliefs comes from mastery experience. Although failure can undermine self efficacy beliefs, success can lead to strong beliefs about one's self efficacy. Bandura (1995) argued that negative mastery experiences are particularly damaging to self-efficacy beliefs before they are strongly established. A second source comes in the form of vicarious experiences, referring to those in which the skill in question is modeled by someone else. He argued that when people see others like them succeed or fail it can have a powerful effect on their own self efficacy beliefs; the greater degree of the similarity between him and his role model, the more significant their influence. The third source of self-efficacy beliefs, social persuasion, is more likely to convince people that they are not efficacious than it is to promote positive self efficacy beliefs. Once a negative belief is in place, behavioral validation often follows. However, he argued that realistic positive verbal persuasion can lead to greater, more sustained effort, and the potency of

persuasion depends on the persuader's credibility, trustworthiness, and expertise (Bandura, 1986). The final source of Bandura's self-efficacy belief is physiological and emotional states, though he argued that it is not their intensity but the way of how they are interpreted that is significant in the formation of self-efficacy beliefs. They can be seen as either stimulating or debilitating factors.

Because humans do not live in isolation, nor can they exercise control over major aspects of their lives entirely on their own, Bandura (1997, 1998, 2000) argued that the conception of self-efficacy should be expanded to collective efficacy. He further pointed out that many challenges of life centered on common problems that require people to work together with a collective voice to change their lives for the better, thus called for people's collective efficacy beliefs that they can solve the problems they face and improve their lives through unified efforts. Perceived collective efficacy is "an emergent group-level attribute" rather than "the sum of the efficacy beliefs of individual members" (Bandura, 1998, p.65), and it is "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura, 1997, p.477). Collective efficacy defined in the school context is the perception of teachers in a school that the efforts of the faculty as a whole will have a positive effect on student learning (Goddard et al., 2000). Perceived collective efficacy, according to Bandura (2000) "fosters groups' motivational commitment to their missions, resilience to adversity, and performance accomplishments" (p.75).

In summary, Bandura consistently argued that perceived self-efficacy is concerned with people's beliefs in their capabilities to exercise control over their own functioning and over events that affect their lives. Beliefs in personal efficacy affect life choices, level of motivation, quality of functioning, resilience to adversity and vulnerability to stress and depression. These

beliefs begin to form in early childhood as children deal with a wide variety of experiences, tasks, and situations, but the growth of self-efficacy does not end during youth, but continues to evolve throughout life as people acquire new skills, experiences, and understanding. People's beliefs about their efficacy can be developed by four main sources of influence. Since people work individually as well as collectively, self-efficacy is both a personal and a social construct. While a teacher's individual efficacy can contribute to change in instructional behavior or belief systems, the collective efficacy of the group is essential in producing the greater level of desirable outcomes.

Teacher efficacy beliefs in relation to education reform

A controversial issue regarding the relationship between change in teacher efficacy beliefs and reform efforts is which causes which. Does change in teacher efficacy beliefs (and other beliefs as well) cause change in reform efforts or vice versa? Covey (2004) argued that what we see determines what we do, and *do* is actually how we manifest what we see. If we see more on something that we feel we cannot change, maybe we will do nothing; but if we see more on our influence or power to change, we may feel powerful and take action to change.

Bandura's theory that positive self-efficacy produces benefits for people to handle challenging tasks and approach difficulties seems to be similar in interpreting the relationship between the two.

Some researchers (Fullan, 1985; Guskey, 1986, 2002; McLaughlin, 1991), however, pointed out that change in beliefs follows change in behavior. Teachers change their beliefs and attitudes because they try it and see it work. It is their experience that shapes and re-shapes their attitudes and perceptions (Guskey, 1986, 1989, 2002).

Teacher efficacy beliefs are viewed to strongly influence teachers' reform practice, as well as levels of willingness, motivation, commitment, and perseverance, each of which is pivotal in implementing educational reforms. Ross (1994a) stated that positive sense of efficacy may allow teachers to approach change with more confidence; they are more willing to take risks, and more likely to persevere with implementation efforts while facing difficulties and setbacks. Guskey (1988), and Fullan (1991) stated that teachers' instructional methods and teaching practice are related to their perception of whether students can learn (general teaching efficacy) and self-judgment of their own ability to change their teaching methods (personal teaching efficacy). Teachers who see students as capable of learning and judge themselves as capable of changing their methods will implement the reform with enthusiasm and commitment, whereas those who doubt students' ability to learn and their own ability to change are likely to avoid implementation or implement with reluctance and complaints. Interestingly, Guskey (1986, 2002), and Fullan (1985) also argued that a change in teacher efficacy beliefs and attitudes is "primarily an experientially based learning process" (Guskey, 2002, p. 384). McLaughlin (1991), in examining the findings of the 1970s Rand studies, acknowledged that there were times when changes in beliefs followed changes in practice.

Given the challenges brought about by educational reforms and the demanding accountability of teachers for implementation, many teachers experienced increased level of stress and decreased level of self-efficacy although they might view the reform initiative as beneficial and had a higher sense of general teaching efficacy (DeMesquita & Drake, 1994). In addition, although much research reviewed suggested that high teacher efficacy is a motivator for positive teacher change, some indicated that an unrealistic high sense of teacher efficacy may be a deterrent to a desire to change, and thus a hindrance to educational reform (Huberman, 1995;

Settlage, Southerlandet, Smith, & Ceglie, 2009; Wheatley, 2002). In contrast to teacher efficacy beliefs, Wheatley (2002) suggested that teacher efficacy doubts play an important role in motivating positive teacher change. Regardless of the dissenting argument, more research seems to be in support of the idea that high teacher efficacy is beneficial to reform implementation while a more common obstacle to reform is likely to be low teacher efficacy.

To facilitate reform implementation, many researchers (DeMesquita & Drake, 1994; Rosenholtz, 1987; Ross, 1994a; Stein & Wang 1988; Swars, 2005; Volkman, Scheffler, & Dana, 1992; Weasmer & Woods, 1998) studied how to raise low efficacy beliefs of the teachers and sustain their high efficacy beliefs.

Rosenholtz (1987) investigated the impact of two state-wide schemes on teacher efficacy, but got different results. The first scheme, a minimum competency testing program had a negative effect of reducing teachers' autonomy and increasing the tendency of some teachers to attribute student failure to external variables out of their internal control. The reason was that teachers felt that they did not have enough time to cover all the important topics in the curriculum, and were compelled to quicken the pace, which was inappropriate for the students. In spite of the negative effects, the same scheme had a positive impact on the efficacy beliefs of a small group of teachers who shared the conceptions of state organizers.

In another study, that is, a career ladder scheme, however, Rosenholtz found its impact on teacher efficacy was dependent on how it was implemented. When teachers were involved in such decision making as setting criteria for promotion and implementing the scheme, there was a positive effect, otherwise, the impact was negative, causing a prevalent sense of injustice, which reduced teacher effort.

Volkman, Scheffler, and Dana (1992) found that an intervention program was effective for enhancing efficacy beliefs of pre-service teachers. After one year's treatment, the pre-service teachers in the experimental group had higher teacher efficacy scores than the control group who experienced traditional pre-service. The intervention program was to assign pre-service teachers to a school that had a graduate assistant who discussed with him after each lesson and provided biweekly meetings to analyze problems and solutions.

Regardless of some scholars' questioning on his research procedures, Ohmart's (1992) study investigating the impact of an in-service program specifically designed to increase teacher efficacy provided thought-provoking findings: the program had an immediate positive impact on participants' self-efficacy as well as general teaching efficacy, although the effect disappeared in the delayed post-test.

In a small-sample study, Swars (2005) interviewed some elementary pre-service mathematics teachers with different efficacy levels about their perception of the mathematics teaching effectiveness after they completed a mathematics method course, and reported that elementary pre-service teachers' participation in a mathematics method course which developed a self-awareness of past experiences with mathematics and effective instructional strategies contributed to significant increases of mathematics teacher efficacy.

In summary, teacher efficacy beliefs and reform efforts are reciprocally related. High teacher efficacy is generally believed to be a facilitator to educational reform implementation although a few studies suggested the opposite. Teacher efficacy can be enhanced in some reform programs if 1) teachers shared the conceptions with the reform developer or organizer; 2) the reform initiative was well implemented; and 3) the reform included developing a self-awareness

of relevant past experiences and effective instructive strategies. In the next section, I will present Hofstede's culture distance theory, and cross-cultural researches on teacher efficacy.

Cultural difference and cross-cultural application of teacher efficacy research

The main areas we are concerned about in this section are: What is culture distance by Hofstede? What is the difference between Chinese and western culture? Is efficacy theory inter-culturally transferable? What are the findings of the empirical cross-cultural teacher efficacy research?

Cultural distance

Culture is the collective programming of the mind which distinguishes one group or category of people from another (Hofstede, 2007, p. 423). As an influential cross-cultural researcher, Hofstede (1997) argued that American culture and Chinese culture represent two extremes in a cultural continuum in terms of the identified four dimensions of culture: individualism/ collectivism (IC), power distance (PD), uncertainty avoidance (UA), femininity /masculinity (FM)².

The individualistic vs. collectivistic dimension is identified as being the dominant theoretical perspective steering research in cross-cultural and inter-cultural matters (Levine, 2007). Collectivist societies might be defined as societies where people are likely to belong to 'in-groups' to which they owe considerable loyalty, while in individualistic cultures, people are more likely to focus on their own needs, display their individual personalities and choose their own affiliations.

Hofstede (2001) argued that in collectivist societies, the in-group/out-group distinctions developed within the family are transferred to schools where children from different ethnic backgrounds often form sub-groups. Conversely, individualist classrooms are more likely to aspire to meeting the unique needs of the student, and the ideal of critical engagement and discussion.

According to Hofstede (2001), high PD cultures are more tolerant of inequality. Manifested in education, teaching is likely to be more teacher-centered and students are less likely to see their teachers as equals. Hofstede (2001) believed that in high PD cultures students would be expected to show respect when meeting teachers and not be seen to challenge their authority.

Societies rated as being high in UA are more likely to adhere to absolute truths and prefer the security of structured, clear and predictable situations. Hofstede (2001) suggested that such societies can also be more intolerant and more aggressive. In contrast, low UA societies are more comfortable with ambiguity and more tolerant of difference. In education, students in high UA settings are said to prefer structure and correct answers, learn that truth is absolute, and see teachers as having all the answers.

In terms of masculine/ feminine culture distinction, Hofstede (2001) suggested that people in masculine societies are more aggressive, competitive, and place stronger emphasis on gender difference and wealth accumulation. Traditional parenting roles are advocated with a societal expectation that women will be caring and men will be professionally successful. He argued that academic failure or success is much more significant in the lives of people in masculine societies. In more feminine societies, people value relationships and quality of life.

Social skills are seen as more important and friendly teachers are valued more than academically outstanding ones.

Hofstede's culture model received some criticism in terms of its research paradigm, premises, and findings (McSweeney, 2002). Ailon (2008) also deconstructed Hofstede's culture studies by mirroring it against its own assumptions and logic, and claimed to find several inconsistencies at the level of both theory and methodology. Mason (2007) argued that the concept of culture is highly problematic because societies are comprised of diverse individuals and are situated in a world that is: "characterized by increasing degrees of plurality, multiculturalism, interdependence, hybridity and complexity" (p. 169). Interestingly, Williamson (2002) studied McSweeney's critiques (2002) and criticized that he shifted his disputes on the value of functionalist paradigm to critiques of the reliability and validity of Hofstede's research findings. Such an inconsistent approach, according to Williamson, results in his (McSweeney's) critique itself being flawed. Despite such a rebuttal, Williamson acknowledged that McSweeney's warning of the danger of imagining that people within nations are homogeneous and all share cultural attributes should be heeded. Williamson analyzed Hofstede's model in a more balanced way, and recognized the value and contribution "it has made in unbundling the black box of culture" (2002, p. 1392).

Empirically, some of Hofstede's culture dimensions have been tested. Researches conducted by Hwang, Francesco & Kessler (2003), and VonDrass (2005) have found correlations between learning success and individualistic/ collectivistic orientation. Many studies on Chinese and other Asian international students (Bradley & Bradley, 1984; Gao & Ting-Toomey, 1998; Watkins & Biggs, 1996; Holmes, 2005) also appear to support Hofstede's model of culture dimensions. In the next section, the review will shift to cross-cultural researches on

teacher efficacy with a focus on Western-Chinese comparative studies on teacher efficacy beliefs.

Cross cultural research on teacher efficacy beliefs

As Ho and Hau (2004) pointed out, much of the existing research about teacher efficacy beliefs has been conducted in Western countries, particularly in the United States. However a number of studies conducted more recently have explored teacher efficacy in more diverse cultural settings (Cheung, 2006; 2008; Ho & Hau, 2004; Gorrell & Hwang, 1995; Lin & Gorrell, 1998; Rich, Lev & Fischer, 1996). These studies investigated the impact of culture on the construct of teacher efficacy.

Oettingen (1995), drawing on Hofstede's model of culture dimensions, studied the influence of culture on self-efficacy appraisal. He argued that sources of efficacy, as a result of the impact of culturally determined societal institutions, vary across cultures in their "prevalence, forms, and value" (p.171). Praise may be used more sparingly in some cultures, feedback might be given more readily to groups than individuals in others, and being ranked first in the class may be of more value in some cultures than others. Thus Bandura's four sources of self-efficacy may not have the same weight in developing efficacy beliefs in different cultures. For instance, in societies with big power distance, the belief of authority may empower teachers, while in societies with small PD, teachers' opinions are more likely to be dismissed as invalid and questioned by students and their families.

Ho and Hau's (2004) compared self-efficacy of Chinese and Australian teachers, and they concluded that the construct of teacher efficacy was cross-culturally valid. However, they also found that it contained culturally specific elements. Whereas student guidance efficacy and

control efficacy dimensions were individually evident for Australian teachers, these were integrated in the data collected from the Chinese students. They suggested that this reflected the more parent-like responsibility accepted by Chinese teachers. They also found that the Australian teachers recorded higher levels of teacher efficacy than the Chinese teachers in all areas, including discipline. They attributed this to both the culturally expected self-effacing tendencies of people from collectivist cultures and the higher expectations of teachers evident in Chinese society.

Lin, Gorrell and Taylor have also claimed that teacher efficacy belief “draws heavily on cultural differences from country to country” (2002, p. 37). They suggested further that the two-factor approach may be insufficient to measure teacher efficacy beliefs in different settings. They reported that although Rich, Lev and Fischer’s (1996) Israeli study found a two factorial structure similar to those in US studies, many more studies (Gorrell, Ares, & Boakari, 1998; Gorrell, Hazareesingh, Carlson, & Stenmalm-Sjoblom, 1993; Gorrell, & Hwang, 1995; Lin, & Gorrell, 1998; 1999) found that the concept of teacher efficacy is: “more differentiated than was previously found and is strongly influenced by uniquely cultural variables” (2002, p. 37). They also found that pre-service teachers from different cultures reported different degrees of teacher efficacy. This is evident in their research where U.S. pre-service teachers were recorded as reporting higher teacher efficacy beliefs than their Taiwanese peers (Lin, Gorrell, & Taylor, 2002) and was further supported by the research findings of Ho and Hau (2004).

Lin, Gorrell and Taylor (2002) highlighted important differences on individual efficacy items that may reflect both culture and context. Taiwanese pre-service teachers placed more emphasis on the need for successful relationships with parents and had an increased awareness of the difficulty of teaching large classes. Moreover, they also suggested that Gibson and Dembo’s

(1984) instrument for measuring teacher efficacy beliefs may not be suitable for use in cultures with different perspectives about teaching.

Cheung (2008) used Kennedy and Hui's (2006) Chinese version of Tschannen-Moran, Hoy, and Hoy's (1998) Teachers' Sense of Efficacy Scale (TSE). This Hong Kong Teachers' Sense of Efficacy Scale (HK-TSE) was found to be valid and reliable in the Hong Kong context. Cheung (2008) extended this study by collecting further data from teachers in Shanghai for comparison. After further translation, the Shanghai Teachers' Sense of Efficacy (S-TSE) was developed. In this study qualitative data was also collected asking participants to identify the sources of their efficacy beliefs. Cheung (2008) noted that the Shanghai teachers recorded significantly higher scores in the survey. In the follow-up qualitative part, three factors were identified to explain the high efficacy score of Shanghai teachers: respect and confidence placed in them by students and parents, the training (both pre-service and in-service) they received from universities, and the experience they gained from daily teaching practice.

Lin, Gorrell and Taylor's (2002), Ho and Hau's (2004), and Cheung's (2006, 2008) research highlighted differing cultural understanding of teachers' sense of efficacy, and how culture may obfuscate the meaning of answers given to the same question by those from diverse backgrounds.

Teacher efficacy research in China

China did not start research on teacher efficacy beliefs until 1992, the year when *Huang Wei* (1992) published in a Chinese journal the first paper introducing Western studies on teacher efficacy. Since then, a number of psychologists, educators, and educational administrators have shown much interest in this strand of research and taken teacher efficacy as a significant

predictor of teaching effectiveness and student achievement. As a new comer in this field, China TE research borrows heavily from Western research outcomes, however, it contributes to the enrichment and development of teacher efficacy studies, both conceptually and empirically. These Chinese scholars, rooted in their indigenous culture, import and adapt Western TE research, examine the cross-cultural transferability of TE theory, explore extensive questions concerning construct, sources, characteristics, and meaningfulness of Chinese teachers' sense of self-efficacy, and present and report the latest findings in this regard.

Conceptual research drawing on Western TE theory

In the 1990s, teacher efficacy research in China predominantly focused on presenting, reviewing, and adapting Western theory. Rotter's social learning theory, Bandura's social cognitive theory, Teacher efficacy scales created by Gibson and Dembo, Ashton, and Tschannen-Moran were all imported to China. Theoretic discussions ranged extensively from: how to clearly define the concept of teacher efficacy in different Chinese settings; how to adapt the American-developed teacher efficacy scale and enhance its validity as well as reliability being applied in China; to: what structure best illustrates teacher efficacy beliefs, and what is the relationship between individual teacher efficacy and collective efficacy. Generally, Chinese researchers accept the basic concepts of teacher efficacy defined in the West although they employ slightly different interpretations to serve different research purposes. Another question that Chinese researchers are concerned about is teacher efficacy measurement. Yu, Xin, and Shen (1992), Xin, Shen, and Lin (1994) issued the Chinese version of *Teacher Efficacy Scale*, and *Individual Teacher Efficacy Scale* based on the scales created by Gibson and Dembo, and by Ashton. Yu and his collaborators (1995) later enhanced the validity and credibility after a trial

test involving 382 subjects and made the standardized *China Teacher Efficacy Scale* after further modification.

Indigenous empirical research

Influenced by Western research paradigm, China's TE research mainly takes a quantitative approach, centering on correlation analysis. Noticeable concerns addressed are: What factors are likely to influence the formation and development of teachers' sense of efficacy? What aspects are likely to be influenced by teachers' sense of efficacy?

Antecedents of Teacher Efficacy

Some researches indicated that institutional factors have a marked impact on teacher efficacy beliefs. Xin and others (1994), based on their quantitative study, argued that teacher efficacy has a significant positive correlation with the institutional factors such as policy system, opportunity for professional development, school supporting system, school culture, inter-teacher relationship, and teacher-student relationship. Li (2005) studied the influence of principal traits, principal self-efficacy and leadership style on teacher efficacy beliefs, and concluded that all are significantly correlated with teacher efficacy. Other researches explored the relationship between teacher efficacy and individual differences. Yu (1995) reported that years of teaching experience is not a significant TE indicator. Jiang (2001) and Huang (2005) confirmed Yu's conclusion and further pointed out that none of the variables of teaching experience, age, gender, academic degree and teacher rank is significantly related to teacher efficacy beliefs. However, these variables are interactive and mutually influential. Studies of Mao (2000) and Wu (2003) indicated that when considered comprehensively the five factors of region, sex, teacher rank, academic degree, and teaching experience, they are significantly related to teacher efficacy.

Consequences of Teacher Efficacy

Research investigating this area reported that teacher efficacy is: a good predictor of teaching behavior (Yu, 1999; Luo, 2000; Li, 2000); positively correlated to teaching effectiveness and student achievement (Qu, 1999; M, 2003; Mao, 2005); negatively related to teacher burnout and stress (Liu, 2004; Xu, 2003; Zhao, 2002). Among these studies, only one (Li, 2000) is methodologically qualitative. By systematically observing the teaching behavior of 578 student teachers and in-service teachers in primary and high schools, Li Ye (2000) concluded that high self-efficacy teachers and low self-efficacy teachers differ markedly in instructional time management, cognitive strategy of question asking, target students being questioned, and provision of feedback to students.

Another minor but notable area is research on teacher collective efficacy. Jiang and Guo (2002) discussed the transferability from personal efficacy to collective efficacy. Liu and Zhang (2004) modified Teacher Collective Efficacy Scale. Gao and his co-researchers (2005, 2006) explored how students' academic performance was influenced by the collective efficacy of teachers and students in primary and high schools. Shi Leishan's (2004) study indicated that teacher collective efficacy is comparatively a better predictor of students' academic performance as a whole, and that it affects the correlation between students social-economic status and academic performance. Some scholars argued (Earley, 1993, 1994; Chen, 2005) that teachers in the collectivism-oriented cultures may enhance their self-efficacy by benefiting from the collective system and achieve best performance. "As the representative of collective culture, Chinese tend to interpret social events more from the perspective of external environment, thus collective efficacy research may be correspondingly more proper and practical in China" (Chen, 2005, p.141).

Critiques of teacher efficacy research

Most literature reviewed here suggests that teacher efficacy beliefs are important and have positive correlation to better teacher and student experience. Teacher efficacy, by grounding it in Bandura's theory of self-efficacy, can become a useful construct for supporting the development of pre-service as well as in-service teachers. Nevertheless, teacher efficacy research, according to some scholars (Wheatley, 2002, 2005; Ho & Hau, 2004; Labone, 2004; Chen, 2005), has some weaknesses in terms of research methodology, conclusions, as well as universality.

One strong critique offered by Wheatley (2002, 2004) is that much of the teacher efficacy research confuses correlation with causation, and ignores the effects of efficacy doubts. The fact that effective teachers are found to have high level of teacher efficacy does not prove that what has led to their effectiveness is the high level of teacher efficacy. Wheatley claimed that to confirm that teacher efficacy beliefs have an independent influence, experimental studies need to be conducted, in which the other critical variables of teacher knowledge and actual teaching effectiveness are controlled. By citing some efficacy research associating with education reform which suggested greater teacher efficacy in relation to traditional teaching goals rather than the reform goals (Stein & Wang, 1988), Wheatley further pointed out that oftentimes it is self-efficacy doubts rather than self-efficacy beliefs that are important, resulting in learning, reflection, collaboration and responsiveness to diversity. Walker (1992) appeared to support Wheatley's criticism. He argued that much research on student teachers suggests that they had unhelpfully unrealistic views of their own abilities and were over-optimistic about what they could achieve. Wheatley's concept of self-efficacy doubts seems to resonate with Mezirow's (1991, 2001) theory of transformational learning, which holds that learning is a process triggered

by a disorientating dilemma when the learner finds his/her beliefs to be undermined by current circumstances. However, Hoy and Spero (2005) argued that self-efficacy beliefs about learning to teach are required to respond successfully to doubts.

Another weakness pointed out in TE research, which may be the result of its root in psychology, is that it is largely quantitative, and based on self-reported data (Labone 2004; Wheatley, 2005; Tschannen-Moran, 1998). “Teacher observations and interviews are extremely rare.” (Wheatley, 2005, p.749). They called on researchers’ attention to the interpretivist and critical theorist paradigms, which would provide depth to the teacher efficacy research. Teacher efficacy should not be reduced merely to a numerical score. Even it is only a score, it “may not carry the same interpretation for Taiwanese and US pre-service teachers” (Lin et al., 2002, p.45). Research on teacher efficacy needs to, like any other research, offer “thoughtful exploration of complexity” (Florio-Ruane, 2002, cited in Wheatley, 2005, p.762). And teachers, administrators, and educators need to be informed in terms of what kinds of efficacy beliefs, if there are any, are useful at which point in what way in helping improve education.

A third weakness is the insufficient research on teacher collective efficacy. Goddard, Hoy, and Woolfolk Hoy (2004) reported that of the three kinds of efficacy beliefs that strongly link student achievement (the self-efficacy judgments of students, teachers’ beliefs in their own instructional efficacy, and teachers’ beliefs about the collective efficacy of their school), “perceived collective efficacy is the most recent construct developed and has received the least attention from educational researchers” (p.1). The reason for this is not yet clear, particularly in Western countries where collaborative, democratic education is so much valued. Perhaps the individualistic culture characterized with “I can...” rather than “we can...” at least partly explains researchers’ more interest in self-efficacy and less in collective efficacy.

A fourth one is the methods of measuring teacher efficacy, and the confusion to the exact interpretation of the many different scales (Watters, Ginns, Neumann, & Schweitzer, 1994). To measure teacher self-efficacy, Raudenbush and his collaborators (1992) only designed one question, “To what extent do you feel successful in providing the kind of education you would like to provide for this class?” Based on Rotter’s (1975) social learning theory, the famous Rand Corporation (1976) developed a two-item scale: 1) When it comes right down to it, a teacher really can’t do much because most of the students’ motivation and performance depends on his or her home environment; 2) If I really try hard, I can get through to the most difficult or unmotivated students. In contrast, to fight against the over-simplistic tendency, Bandura (1997) developed a 30-item scale, and Tschannen-Moran and Woolfolk (2001) developed a full form of 52-item Ohio State Teacher Efficacy Scale (OSTES) to capture teacher efficacy from three dimensions: teaching strategies, classroom management, and student relations.

The confusion in precise interpretation of the scales derives from Bandura’s (1981) argument that efficacy beliefs are situation dependent. “Thus, studies examining teacher’s self-efficacy toward the teaching of science, or mathematics, or reading, require instruments that address their beliefs in the context of teaching that body of knowledge.” (Watters et al., 1994, p. 5). Consequently, teacher efficacy scales developed in different contexts were diversified to meet various research purposes.

Finally, as this literature review may have already suggested, both conceptual and empirical cross-cultural comparative studies on teacher efficacy are still very few, so it is with studies that examined the more complicated relationships between antecedents and teacher efficacy by using path analysis or mediation test. Of the existing research, most merely investigated the simple, direct relationships of the influencing factors and teacher efficacy, and

has been done in Western societies (Ho & Hau, 2004), and written in English. The extensive body of research investigating antecedents' of teacher efficacy offered inconsistent findings, while the limited cross-cultural research available appeared to support the cross-cultural transferability or universality of teacher efficacy beliefs. Nevertheless, what are the shared core and culture-dependent variants of teacher efficacy beliefs and how do they vary within or across specific cultural-social settings? Is collective efficacy really more important than self-efficacy for teachers in collectivistic societies just like what Chen (2005) posited? Do the antecedents such as teacher demographic and contextual variables have indirect effects on teacher efficacy? These questions, and many more, remain uninvestigated.

Teacher efficacy research in China is faced with more problems. As teacher efficacy research is a Western product rooted in the Western educational system and culture, these methods and educational concerns may not be equally useful or important in China. Moreover, much TE research conducted by Chinese scholars is just copies or imitation of their Western counterparts (He et al., 2006). As a country with a distinct education system, culture, and tradition, China is in need of original, indigenous TE research that can transcend Western paradigms, and address her own issues with regard to authentic Chinese teacher efficacy measurement, teacher collective efficacy in the collectivistic culture, “the plasticity of the determinants of self-efficacy” (Gist & Mitchell, 1992), the longitudinal teacher efficacy change and fluctuation in their career, and teacher efficacy in relation to China’s education reform.

In summary, self-efficacy theory has demonstrated a tremendous power for wide application in teacher development. “Self-efficacy beliefs influence thought patterns and emotions that enable actions in which people expend substantial effort in pursuit of goals, persist in the face of adversity, rebound from temporary setbacks, and exercise some control over events

that affect their lives” (Bandura, 1986, 1993, 1996, 1997; cited in Tschannen-Moran et al., 1998, p. 210). The New Education Experiment, which is concerned about teachers’ emotional fulfillment and professionally developmental happiness, is supposed to have influence on teacher efficacy beliefs, and it is more justified so if judging from numerous positive reports from experimental schools on teacher changes in terms of their thinking, commitment, enthusiasm, motivation, perceived capability and performance. The next section sketches the relevance of teacher efficacy theory to this study, and the possible contributions the study may make to the body of teacher efficacy literature.

Relevance of teacher efficacy theory to and significance of the current study

The reason that teacher efficacy theory is selected as the theoretic lens through which both quantitative and qualitative data of the study are to be interpreted is two-folded: its important role that has been acknowledged in the research field of teacher education, and its interpretative powerfulness taking into consideration not only external physical and social structures but also internal cognitive and affective processes.

By grounding in the large quantity of reviewed literature on teacher efficacy, my research attempts to contribute to the following:

1. Bridging the gap between quantitative and qualitative studies by using mixed methods, offering both “empirical precision” and “descriptive precision” (Onwuegbuzie & Leech, 2005) to the study of teacher efficacy beliefs.
2. Developing a multidimensional construct of comprehensive teacher efficacy as a measure to test the impact of teacher background, the New Education

reform, and teachers' view of the reform model on comprehensive teacher efficacy from the lens of teacher efficacy theory.

3. Exploring individual and collective efficacy, and other reform-related efficacy of Chinese teachers participating in NEE, and whenever possible, comparing the findings with Western studies as well as studies on Chinese teachers conducted in China by Chinese scholars.

4. Identifying both the direct and indirect relationships, through the mediating effect of teachers' view of the NEE model, between teacher background, NEE participation, and teachers' view of comprehensive efficacy.

Chapter 3 Methodology

This study utilized mixed methods of inquiry to collect both qualitative and quantitative data. Quantitative evidence can indicate relationships that may be less obvious to a researcher, prevent researchers “from being carried away by vivid, but false, impressions in qualitative data” (Eisenhardt, 1989, p.538). In contrast, qualitative data are useful for “excavating below the quantitative surface” (Theall et al., 2009, p.1), and understanding the rationale or the “why” questions behind those relationships revealed in quantitative data.

My qualitative research is grounded in the quantitative analysis of survey data. It aims at an in-depth interpretation of the statistical scores and further discovery in teacher efficacy change in relation to participation of the New Education program. In this study, both sources of data carried the same weight, and together they formed a well-rounded picture and understanding of the NEE teachers’ transformation under study. Before data collection, I asked myself the following five questions: 1) What data do I need? 2) Why do I need to know this? 3) Where and from whom do I find the data from? 4) Who do I contact for access? And 5) What is the timeline for data collection? The data collection matrix is shown in Appendix 3.

Quantitative methods: Survey

I used questionnaires to gather general data with regard to: 1) information on NEE teachers with questions about demographic background, profiles of participating schools, years of NEE engagement, times of participation in the NEE teacher development program; and 2) subjective information on teachers’ view of the model and comprehensive efficacy.

The attractiveness of survey research is related in large part to its utility in diverse research situations ranging from qualitative to quantitative studies, and “its applicability in situations where direct manipulation of variables is either unfeasible or unethical” (Hutchinson, 2004, p.286). In Hutchinson and Lovel’s survey (1999) of research methods, surveys were reported to be by far the most frequently used method among 209 studies in three leading higher education journals, with 82% of them relying on survey data either from primary (51%) or secondary sources (31%). Coleman and Briggs (2002) confirmed it by stating that surveys are the most frequently used method of research. Cohen and his collaborators (2000) elaborated on the purpose of using a survey as follows:

Typically, surveys gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationship that exist between specific events. (p. 169)

For the research of this study, survey research is perceived to better capture general data from a large population on objective facts as well as subjective efficacy beliefs, attitudes, perceptions, and behaviors.

Participants

In order to gather data from a population as large as possible and maximize the response rate, I did not set very strict restrictions to sample selection. However, I did identify some guidelines to direct the process of sample selection based on the principle of stratified sampling. First, every NEE school district was supposed to participate in the survey on a voluntary basis, but together the participating school districts needed to represent regional and categorical diversity as much as possible. All together 12 out of the 28 experimental school districts across the east, west, and midland of China participated in the survey. Second, guided by Leedy and

Ormrod's (2001) suggestion that one needs to survey the entire population if the population size is fewer than 100, and 50% of the population if its size is around 500, even the smallest participating school district sampled more than 100 teachers, and the largest one sampled around 700 teachers. Sampling balanced differences in: 1) teachers' demographics; 2) school types; 3) years of NEE participation. A total of 2,260 teachers were surveyed. However, the research only took usable surveys into consideration. If participants just skipped one to four questions of the survey, it was used in the analysis. Questionnaires with 5 or more skipped items (10%) were not considered. Overall, 87 questionnaires were rejected, which brought the usable total to 2,173. The usable response rate was 96.15%.

Instrumentation and materials

Although Teacher Efficacy Scales seem to be abundant, the method of measuring efficacy beliefs has been a recurring difficulty in efficacy research (Watters, Ginns, Neumann, & Schweitzer, 1994). This was caused partly by confusion in the exact definition and interpretation of these scales, and partly by the situation-dependent nature of efficacy beliefs. As stated in Chapter 2, some researchers (Armor et al, 1976; Berman et al, 1977) defined efficacy in terms of two items based on Rotter's social learning theory: 1) When it comes right down to it, a teacher really can not do much because most of a student's motivation and performance depends on his or her home environment; 2) If I really try hard, I can get through to the most difficult or unmotivated students. In contrast, others (e.g., Gibson & Dembo, 1984) developed teacher efficacy instruments which contained a series of items that confounded personal teaching efficacy, general teaching efficacy, and outcome expectancy. Based on the argument that efficacy beliefs are situation dependent and task dependent (Bandura, 1981; Enochs, & Riggs, 1990), scholars examining teacher efficacy toward the teaching of science, or mathematics, or

English, developed instruments that addressed their efficacy beliefs in the context of teaching that body of knowledge. For instance, Enochs and Riggs (1990) developed an instrument entitled the Science Teaching Efficacy Belief Instrument.

No existing instrument has been available to measure perceived teacher efficacy change in the context of implementing an educational reform---particularly China's New Education reform, thus one self-developed measure is needed to address teachers' efficacy change in this specific reform context in China. As the current study is intended to investigate how individual teacher background and NEE participation influence the way teachers view the NEE model and themselves as efficacious teachers through the mediator of TVM, the questionnaire of the survey was developed by focusing on the research purpose and questions. It included 50 items, which were divided into two sections. The first section was about the teachers' demographic and other factual contextual data including information about NEE participation. The second section asked teachers their views on the model and changes in comprehensive efficacy beliefs.

Some questions might arise concerning questionnaire design. First, we need to understand what *comprehensive efficacy* means in this study. *Comprehensive efficacy* in the specific context of the current study is defined as a general construct of teacher efficacy which contains multiple, mutually supportive intelligence and non-intelligence factors, such as attempts, efforts, motivations, and capabilities, to bring about the effective implementation of a reform initiative. More specifically, it includes, but is not limited to: 1) self-efficacy with an add-on affective dimension; 2) collective efficacy; 3) collaborative efficacy; 4) reform alignment efficacy; and 5) efficacy doubts (versus efficacy beliefs).

According to Bandura's description of the characteristics of people with positive self-efficacy (1977, 1994, 1995), the efficacious teacher is not only one with high efficacy beliefs, namely with strong beliefs in his capabilities to bring about desirable outcomes, but also one who shows a higher level of interest, enthusiasm, commitment, and more desirable behavior change. Simply stated, an efficacious teacher is both cognitively/intellectually capable and affectively/non-intellectually capable. It was because of this type of efficacy outlook that I, while designing the questionnaire, took into consideration both the intellectual and non-intellectual/affective factors that may build as well as characterize an efficacious teacher, a term I refer to as teacher efficacy with an add-on affective dimension.

A teacher with high self-efficacy in general educational background does not necessarily perform as efficaciously in the educational reform setting. An efficacious teacher reformer needs to align knowledge, capability, attitude, and effort with the goal and specific requirements of the reform model. Although early literature (Hoy & Woolfolk, 1993) reported that teachers with high efficacy are more eager to be innovative and implement new teaching practices, it does not necessarily mean high teacher efficacy alone is sufficient for successful implementation of new practices or reforms. Much prior research evidenced that in addition to teacher efficacy, many other factors such as collective efficacy (Bandura, 1993; Goddard et al., 2000; Goddard & Goddard, 2001), collegial support and collaboration (Miskel, McDonald, & Bloom, 1983; Rosenholtz, 1989, Ross, 1992), other efficacies in relation to educational reform, and even a certain amount of efficacy doubt (Wheatley, 2002; 2005) can explain the differential effect teachers and schools have on students and reform initiatives. Informed by such research results, a non-standard 17-item teacher efficacy scale measuring the above-mentioned multiple dimensions was developed by the researcher. This was done because there was no existing scale to use for

the study, and there was a “need to develop assessment instruments of greater comprehensiveness and increasing specificity to accommodate the complexity of teacher functioning in times of education reforms” (Chan, 2005, p.149).

The other part of Section 2 of the questionnaire was on teachers’ view of the NEE model. It was so designed not only because evaluation of TVM was a significant purpose of the research by itself, but also because, by conventional wisdom as well as prior research (eg., Rosenholtz, 1987), an exploration of its mediating effect on TVCE is potentially significant in interpreting teachers’ changed perception of their comprehensive efficacy.

Therefore, the second section of the questionnaire was comprised of 35 items, with 18 surveying teachers’ view on the NEE model, and 17 investigating their view of comprehensive efficacy change in NEE reform. Among the latter 17 items, some were more overt in addressing teachers’ comprehensive efficacy beliefs, and some addressed them in a rather indirect manner via manifestation of TE in teachers’ commitment, interest, behavior change, collaborative and reformative capability. Together they attempted to capture the whole picture of the teachers’ perceived comprehensive efficacy in the process of NEE implementation. In terms of wording, Gable and Wolf (1993) suggest that both positive and negative items should be included in a questionnaire so that the response style can be controlled. Therefore, some of the items were worded to include negative statements.

Apart from the 15 items in the first section concerning the demographic and contextual information, the second section of the questionnaire used a 5-point Likert scale: 1 strongly disagree; 2 disagree; 3 not sure; 4 agree; and 5 strongly agree.

Administration

The survey was supposed to be a joint project between the researcher and the NEE Institute, and it was administered to the teachers via a contact person in each participating school district. Prior to the survey, a written document was sent to all participating districts, informing them of the survey, its significance, requirements, administering instruction, principle of confidentiality, and submission deadline. Upon completion of the survey, participants posted or submitted their anonymous responses to the contact person, who put them in a paper bag, sealed, marked it with information such as the total number of copies, the school district and contact person, and then posted them to Dr. Xu of the NEE Research Institute, who finally forwarded them to me.

Validity and reliability of the questionnaire

Prior to the survey, I learned, by reading and consulting, to develop a well-thought-out questionnaire based on the research purpose, knowledge of questionnaire design, well-designed Teacher Efficacy Scales, an understanding of the NEE model, and an analysis of the Chinese preference for giving desirable answers. I tried to ensure that respondents would understand the significance of the research, be familiar with the contents, recall the information accurately, and most important of all, become willing participants to answer the questions truthfully. To validate the survey questions, both my American adviser and another three Chinese educators familiar with the NEE model were consulted and invited to evaluate and assess the content as well as the structure of the questionnaire. Modifications were made according to their suggestions.

The reliability of the questionnaire was examined by using Cronbach's Alpha test. The Cronbach's Alpha coefficients for the 18 items indicating TVM and 17 items indicating TVCE were .835 and .867 respectively.

Kerliner and Lee (1999) said that reliabilities of teacher-made measures often fall between .60 and .85, and they are considered to be useful. The coefficients of .835 for teachers' view of the NEE model, and .867 for teachers' view of comprehensive efficacy thus suggested that the survey instrument designed for this study is reliable.

Data collection and basic analysis

As has already been reported, data were gathered through a survey questionnaire. A contact person in each participating school district was responsible of distributing questionnaires and collecting them after they were returned by the teachers. Since the questionnaires were mostly distributed to the NEE teachers at a time when the district-wide teacher conferences or training programs (which is a common practice in China, particularly in the summer) were completed, the participation level was high. Altogether 2,260 teachers from 12 out of the total 28 districts across China participated in the survey, and the response rate was 100%. Although the extremely high response rate may suggest possible bias, the stratified sampling method would minimize it. In other words, teachers in different categories were largely represented in proportion. Another potential bias might come from the whole school versus individual selection. There were individual teachers who participated in NEE reform but their school as a whole did not; and there was also whole-school participation, but judging from the individual's perspective, some teachers might be forced to participate by their school, rather than out of a free choice of their own. If the sample was constructed from individuals who self selected into NEE because of

their high belief in it, there would be less variation, and more likely it would cause bias.

However, individual participants occupied less than 1% of the sample, thus the variation of the sampled teachers was basically unaffected, and the bias would be weak if there was any.

Once the responded questionnaires reached me, I organized workers to input the survey data into the data bank. Four people were involved in the data input process: the researcher, the coordinator, and two college students. The whole procedure took about three weeks, and it went like this: 1) one student input the data while the other examined her input line by line, or vice versa; 2) the coordinator randomly checked about 10-15% of the data recoded daily and offered feedback on identified problems to both the researcher and the students; 3) twice a week, the researcher further examined the correctness of data input by drawing 5% of the total at random.

Missing data did exist, but the percentage was small. The percentage of the highest item-specific missing data was about 2% ($n=44$, $N=2173$), therefore, I ignored the missing values in my analysis.

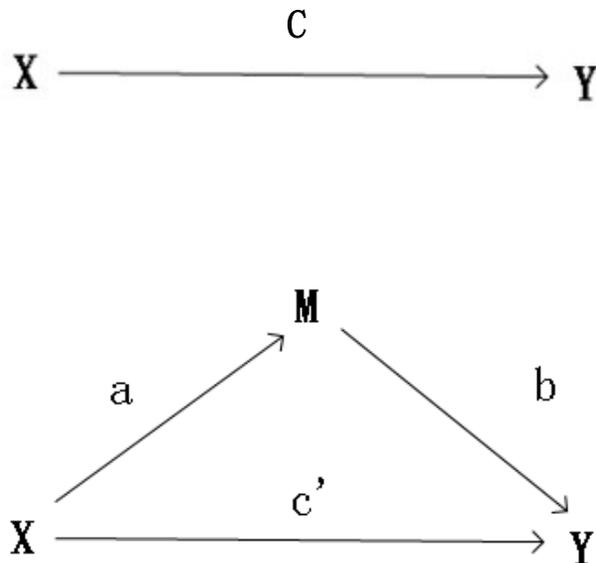
The data recorded in the database were analyzed using SPSS. For the 15 questions in Section 1, data were examined by using descriptive statistics such as percentage, frequency, mean, and standard deviation. Then, the 35 questions in Section 2 were analyzed in relation to the 15 questions in Section 1. Within the 35 questions in Section 2 which contain 18 TVM items and 17 TVCE items, Cronbach test and factor analysis were run to examine the validity and credibility of both scales. Then, the correlation coefficients between dependent and independent variables were tested so as to build a regression model for further inferential analysis.

Further mediation analysis

The general assumption proposed in this study was best examined as a mediation model.

Mediation occurs when the influence of the independent variable (*IV*) on the dependent variable (*DV*) is explained by the indirect effect through a mediator (*M*). This is illustrated in Figure 1. In the current study, teacher background is the *IV*, TVCE is the *DV*, and TVM is the mediator (*M*).

Figure 3.1 Example of mediation



The symbol c in Figure 1 represents the coefficient of the *DV* regressed on the *IV* without taking into account the mediator (*M*). In the current study, c represents the association between teacher background variables and TVCE when TVM is not considered. The symbol a in Figure 1 represents the coefficient of *M* regressed on the *IV*, b is the coefficient of the *DV* regressed on *M*, and c' is the remaining association between the *IV* on the *DV* once *M* is included in the model. Again relating this to the current study, ab is the association between teacher background variables and TVCE that occurs via TVM. The association between teacher background variables and TVCE not accounted for by TVM is represented by the symbol c' . Hence, $c - c'$ is equal to ab (i.e., the indirect effect of the *IV* on the *DV* via *M*).

There are several methods of calculating the effects of one variable on another via a

mediator. The Baron and Kenny method (Baron & Kenny, 1986), which suggested a series of regression analyses as a test of mediation, has been critiqued for not directly testing the significance of ab (i.e., $c - c'$; Preacher & Hayes, 2004). The Sobel method (Sobel, 1982) offered a direct test of ab ; however it assumed ab to be normally distributed, a critique by Preacher and Hayes (2004). Bootstrapping was determined to be a viable method to aid in analyses for the current study as it allows for a direct test of mediation without assuming a normal distribution of the indirect effect (Preacher & Hayes, 2004).

Bootstrapping is a nonparametric resampling procedure that can be used to test the null hypothesis for a mediation relationship (i.e., $ab = 0$). The first step when using the bootstrapping method is the creation of a sample of size N from the given sample using random sampling with replacement. This means that the values for individuals are randomly chosen from the existing data set, repeatedly, without excluding already selected data, until a new sample of size N exists, created by the data from the original sample.

This procedure (random sampling with replacement N times followed by the determination of a sample mean value for ab) is repeated a predetermined number of times, k , which is generally set to 5,000. This creates a distribution composed of 5000 sample mean values for ab .

The null hypothesis for mediation is that the indirect effect of the IV on the DV via M is 0 ($ab = 0$). Using bootstrapping, this is demonstrated using the confidence intervals (CI) for the aforementioned calculated ab distribution. If 0 is included in between these confidence limits, it can be said that the null hypothesis holds true within a previously specified degree of certainty depending on the predetermined alpha value (in the current study, an alpha value of .05 is used to provide 95% certainty).

In summary, I was careful to minimize errors of various types and maximize usable information in every step of the survey procedure: designing the questionnaire, selecting the sample, distributing the questionnaire, administering the survey, inputting the data, and analyzing the data.

Qualitative methods: educational ethnography

Immediately after the general data about NEE were collected through surveys, an experimental school was selected for in-depth ethnographic study due to the influence of the view that education is about far more than numeric data (Pollock, 2008). To examine and comprehend how TVM and TVCE changed in a particular school, I used participant observation, in which the researcher is immersed in the day-to-day lives of the members of the group and try to understand them through one-on-one interviews with them (Miller & Salkind, 2002, p.158). However, I also used non-participant observation: I simply observed, but didn't get involved in their activities. It was like a role of a British Ofsted Inspector as described below by Abbott:

He or she is watching the lesson you are in, but they aren't teaching, and they aren't acting as a student. Everyone knows why they are there, and often fervently wishes that they would go away and find something else to do (2009, p. 1).

The loosely engaged time for the qualitative study lasted one year, ranging from December, 2009 to November, 2010, but the intensive ethnographic study at the selected school was only 11 weeks. Other types of fieldwork study included cross-district site visits (December, 2009), participation in annual conference (Early July, 2010), open week (late November, 2010), and school districts' annual report conference (late November, 2010). Furthermore, I developed and maintained a rapport with many teachers and administrators at the selected school as well as those at other schools, and they continued to provide me with data via emails and online talks.

Selection of the school

To do ethnographic study, researchers must locate a setting in which the study will take place. This usually takes considerable time and the researcher frequently operates through “gate keepers” who can help to gain access to a site and participants. Ideally the school would be selected by a judgment sampling, choice of subject(s) that are most advantageously placed or in the best position to provide the information required. This was not realistic and, after some negotiations, I was finally assigned to a new experimental school located in a metropolitan location in East China. Regardless of its new membership, it basically satisfied my criteria:

1. It implements the NEE model and embodies the NEE mission and vision statements;
2. It has a diverse body of teachers who outperform, underperform or adequately perform in the NEE reform, and in each group voluntary participants are available for the research;
3. The school is willing to provide the researcher with a supportive environment with access to various professional activities, meetings, interviews, class observations, school documents, and free use of necessary teaching and research services and facilities.

Another important reason for me to select the new NEE school was that it served as a window to see through the whole NEE process from the very first step of NEE introduction. Moreover, it fit in the familiar developmental approach to China’s reform, which relied largely on pilot reforms in experimental schools for ways and practices proven in a specific context to be reused and renovated in other contexts.

Participants and research methods

The school I studied is affiliated with a nearby university, thus I name it Experimental School Affiliated (ESA for short). Participants were mainly teachers at this school. However, the overall qualitative data included those from teachers at other NEE schools who were either interviewed elsewhere or shared with me their educational blogs. In addition to general observation of all teachers at ESA, I purposely selected some teachers who were early in their career and those who were experienced, teachers who embraced, did not care about, or resisted the New Education reform in order to compare their differing views and perceptions across a wide range of diverse teacher groups. Teachers both at elementary and junior high grades were observed and interviewed so as to balance my findings across grade levels. I also talked with the chairman and principals about my research purpose and requirements, and asked their opinions before making my final decisions.

My status as a Chinese educational “insider” brought me many benefits to get rich authentic data from the school and individual teachers. As Pack (2006) pointed out, the relationship between the researcher and the researched is pivotal in doing ethnographic study. Generally, “the longer and more amiable the relationship, the richer and more consistent is the final product.” (p. 105). Although my relationship with the school was not very long, my identity as a Chinese educator, my prior knowledge of China’s k12 education and NEE reform, and my personal rapport with a number of NEE VIPs, were all my advantages in doing the research in a convenient and effective way, and my representation of the research results, based on what I saw and what they told, would get closer to the real status quo of NEE implementation at the school.

My roles at ESA were multiple. I was regarded as a consultant by the school board, regularly submitting reports and proposals based on my observation and evaluation. I volunteered to have seminars every other week to address the theoretical issues and practical problems teachers felt hard to understand or tackle. I lived on campus together with other teachers and students, and I was almost permitted to be present at almost all of the school activities. I observed daily routines with a self-developed observation checklist, and audited dozens of classes in different subjects. I attended administrator meetings, teacher meetings, student activities, parent-teacher conferences, and weekly school assemblies. I sometimes acted as a judge in teacher or student competitions, discussant and adviser in school teaching and research or policy-making issues. I investigated, with some short questionnaires, 45 teachers, 682 students, and 130 parents about their perception of the school and its educational programs. I read their archives, annual reports, and other documentation. I had 16 interviews with 13 teachers and teacher-administrators at the school (some were interviewed more than once), each for about 1.5 hours in private sessions. I had four 1.5-hour focus group interviews, two for teachers, and two for students. All interviews and focus groups were conducted in Chinese, but only some were tape recorded due to some people's discomfort in using the recorder. In those cases, I only took notes, recording the main ideas and outlines of specific events.

Other experiences outside Experimental School Affiliated added richness to my qualitative data and provided information I might not obtain inside the school. In the winter of 2009, I visited nine schools in two different school districts: one urban and one rural. I had talks with Professor Zhu in Beijing. I visited more schools while participating in the conferences and open week. I conducted several group interviews with teachers, school administrators, and educational officials, and audited classes in different schools. The marked perceived distinction

between these schools and Experimental School Affiliated was that the former displayed their schools as they wanted me to see them, while the latter unfolded itself approximately the natural way as it really was. Perhaps I was at ESA long enough for their virtuoso performance to subside.

The in-school and out-of-school experiences helped me interpret the relationship between what happened in Experimental School Affiliated in relation to the New Education program and the wider sphere of NEE culture guiding the lives of school teachers and students. My daily experiences living on campus and interacting with school people were an indispensable part of my research. Friendships developed during my stay continued after my departure. They are still benefiting me in terms of further data collection via online writing or speaking.

Data analysis

Since my study at ESA was ethnographic by nature and data obtained were enormous, I didn't transcribe or code everything, nor did I think it was possible. For instance, almost every day I had talks with some teachers during the mealtime, intentionally or unintentionally. However, I transcribed part of the interviews in Chinese, inviting interviewees to check essential facts and ideas they reported. I kept research journals and reflective notes which recorded my feelings, experiences, processes, thoughts, challenges, and difficulties doing the ethnographic study at the school.

I examined and analyzed all the journals and notes, audio and readable interviews, and observational data under the guidance of my research questions, coded only the data relevant to the research, and organized them according to the thematic headings.

Research stance and ethical issues

The ethnographer should be aware of and sensitive to her impact on the site and the people being studied as well as the right of participants to confidentiality. Ethnographers should make their presence and purpose known to the participants so that there is no deception about the purpose of the study (Wolcott, 1999, p.208). Initially I was more a non-participant observer but as the participants became accustomed to my presence, intimacy increased and I became deeply involved, not only in teachers' teaching routine at school but also in some aspects of their private world. Throughout the process, I reminded myself to seek consent to record particular interviews or incidents and the research purpose understood. The identities of the school and participants were protected by assigning pseudonyms. The research journals, reflective notes, transcribed interviews, and other important research-related documents were all locked in a drawer.

Although I completed the required training for human subjects research and got the IRB authorization to conduct the research in the Chinese school setting, I encountered some ethical dilemmas. This may partly because of the inherent complexity of ethical issues and research circumstances, and partly because of the nature of ethnographic study and such issues long-term involvement in the setting, close rapport, and a changing research agenda (Hammersley & Atkinson, 2007). Moreover, since ethics about ethnography were mostly written by white, senior, middle class men while conducting their studies (Fang, n. d.), ethical problems perceived by them would be different from those of the indigenous researchers. Should I decline the students who knocked at my door hoping to come in and chat? Could the informal talks with teachers at lunchtime be taken as research data? Should I show the interview data to the school leaders when they asked me for them? Such problems occurred quite often, particularly at the later stage, and my measure was to let ethics as well as my moral values guide my behavior: 1) do no harm; 2) protect privacy; 3) be natural and human; 4) be patient in explanation.

In this chapter, both types of research methods were reported. For the survey, emphasis was on the design of the questionnaire, and examination of its validity and reliability. Issues regarding sampling, survey administration, and methods for data analysis were also discussed. In the discussion of the ethnographic method, such issues like selection of the school and participants, and methods to gather and analyze data, were covered. In addition, it concluded with an interpretation of the research stance taken by the researcher under the guidance of the ethnographic ethics.

Chapter 4 Quantitative Results

This chapter reports the quantitative results that examined the effects of teachers' background and participation in the NEE reform on teachers' view of the NEE model (TVM) and their view of comprehensive efficacy (TVCE). More importantly, it reports their indirect effects on TVCE through the mediator of TVM¹. It starts with description of the demographic characteristics of the sample. Item-specific descriptive results of TVM and TVCE are presented in clusters. Then the multiple regression analyses examining the effects of teacher background and NEE participation on TVM and TVCE are presented. It concludes with results of the mediation test that examined the effects of independent variables on TVCE when TVM was introduced as a mediator.

Research questions revisited, and overview of the findings

Questions 1-8 would be addressed by using the quantitative data results. The first two research questions asked the following: What is the current state of the participating teachers' view of the NEE model? What is the current state of the participating teachers' view of their own comprehensive efficacy? To answer these two questions, means and standard deviations for each item in the TVM and TVCE scales were computed.

Questions 3-6 were stated as follows: Does the individual teacher background predict how teachers view the NEE model? Does participation in NEE predict how teachers view the NEE model? Does the individual teacher background predict teachers' view of comprehensive efficacy? Does participation in the NEE predict teachers' view of comprehensive efficacy? To answer these questions, backward stepwise multiple regression was used to test their relationships at the .05 level of significance.

The seventh research question asked: Does teachers' view of the NEE model (TVM) predict teachers' view of comprehensive efficacy (TVCE)? Regression analysis was used to determine their relationships.

Research Question 8 asked: Does TVM mediate the relationship between the independent variables of individual teacher background and participation in NEE, and dependent variable of TVCE? Mediation testing was used to examine the direct and indirect effects of the dependent variables on TVCE.

Overall, the descriptive data indicated that NEE teachers viewed the NEE model quite positively, so did they view their comprehensive efficacy. The results of regression analyses suggested that:

- Teacher demographic variables generally had no effects on TVM or TVCE, but contextual variables like school level, geographic location, rural-urban distinction, and subject matter had significant effects on TVM and TVCE;
- The status quo of NEE participation was POSITIVELY associated with *teachers' comprehensive efficacy beliefs* (referred to as positive TVCE), and *teachers' view on the advantages of the NEE model* (referred to as positive TVM), and NEGATIVELY associated with *teachers' efficacy doubts* (referred to as negative TVCE), but NOT associated with *teachers' view on the problems of the NEE model* (referred to as negative TVM). The longer time implementing NEE, and the greater level participating in NEE, the higher level of positive TVM and TVCE; the opposite was true with negative TVCE but untrue with negative TVM;

- Teachers' view of the NEE model (TVM) was strongly associated with teachers' view of comprehensive efficacy (TVCE). 78.30% of the variance in positive TVCE, and 40.04% of the variance in negative TVCE were explained by TVM.

Finally, results of the mediation test revealed that positive TVM was a mediator between the predictors and TVCE but negative TVM was not. Teachers who taught English, and who taught in the midland schools or rural schools, were unlikely to have high comprehensive efficacy beliefs (positive TVCE) even when the mediator positive TVM was introduced. In contrast, teachers who taught at junior high level, with higher professional title, or had participated in NEE at higher level or for longer time, were likely to have high comprehensive efficacy beliefs when the same mediator positive TVM was controlled. In terms of efficacy doubts (negative TVCE), teachers with higher professional titles, teachers with less teaching experience, and teachers who participated in NEE for higher level and longer time were less likely to have negative TVCE when the mediator of positive TVM was introduced; whereas teachers in rural schools, teachers in midland schools, and teachers who taught English tended to have high negative TVCE even when positive TVM was controlled.

Descriptive information of sample characteristics

All variables investigating demographic, contextual and NEE participation characteristics of the sample were analyzed by using descriptive statistical methods. Appendix 4 summarizes the descriptive information of each variable in this sector.

Gender and age

Of this sample made up of 2,173 respondents, 1,641 were females and 529 males, making a gender ratio of over 3 females to 1 male teacher. The majority teachers involved in the

NEE reform were quite young: more than 37% (n=812) were 30 or below, 33% (n=717) between 31-35, yielding a 70% of young population under 35. However, 101 (4.6%) teachers above 45 years old also participated in the New Education Experiment³. Comparing the age and gender distribution of NEE teachers across China, this sample selected was representative.

Levels and types of schools⁴

In terms of the schools they taught, an overwhelming majority were in elementary schools (n=1754, 80.7%); schools in East China (n=1600, 73.6%); and public schools (n=2040, 93.9%). In contrast to the large number of 1,754 teachers working in elementary schools, only 382 (17.6%) were in junior high, while the numbers in senior high schools and vocational schools were only 31 (1.4%), and 5 (0.2%) respectively (missing values n=4), together occupying merely a 1.6 percentage of the total participants investigated.

Looking at the schools' geographic distribution, 303 (13.9%) teachers reported that their schools were located in Midland of China, and 252 (11.6%) in West China, whereas 1600 (73.6%) were in East China. Compared to the ratio of China's population distribution (41:36:23), teachers in eastern schools were the overwhelming majority of NEE implementers. A predominant number of teachers (n=2040, 93.9%) who participated in the research were from public schools, while the total number of teachers from other types of schools was small⁵, occupying less than 6% of the sample. In terms of urban-rural distinction, 963 reported their schools were urban, 937 were suburban, while 258 were rural, generating a ratio between the three of 4.4 : 4.3 : 1.2 (missing data n=4).

Overall, these data represented the basic composition of all NEE teachers throughout China, in which teachers from public schools, eastern schools, urban schools, elementary schools were by far the largest groups of NEE members.

Education background, teaching experience and ranking⁶

Upon entering the teaching field, the largest number of teachers (n=989, 45.5%) had only a two-year college diploma (equivalent to the senior high diploma). More than one third (n=797, 36.7%) had associate degrees, and 16.6% (n=360) held bachelor's degrees, comparing to very few (n=19, 0.9%) with master's degrees, and fewer (n=1) with a doctor's degree. However, thanks to the national policy that has consistently promoted in-service teacher quality, teachers are able to take academic courses on weekends and holidays. Thus their academic credentials improved as they continued to work in the field. Currently, about three quarters (n=1626, 74.8%) had bachelor's degrees, followed by 18.1% holding associate degrees. In addition, 113 (5.2%) obtained master's degrees, and 26 (1.2%) had doctor's degrees.

More than half (n=1209, 55%) of the respondents had over 10 years of teaching experience, followed by 22.5% (n=489) teaching between 1-5 years, and 21.3% (n=463) teaching between 6-10 years. As for the subject they taught, more than half of the respondents (n=1151, 53%) taught Chinese, approximately one quarter (n=518, 23.8%) were teaching math, one tenth (n=232, 10.7%) teaching English. 260 (12%) of the respondents chose "other" subjects.

Since school teachers in China were ranked by assigning differentiated professional titles, one question item was used to gather such information. Overall, there was no special-rank teacher, meaning that none of the teacher participating in the survey had the professional title of

the highest rank. However, respondents ranked “senior”, the second highest, and “Grade 1” numbered 824 (37.9%) and 870 (40%) respectively, leaving only 284 (13.1%) being ranked as “Grade 2”, and 177 (8.1%) as “below Grade 2”. In terms of collegial evaluation, 41% (n=891) believed they were ranked as top-level teachers in their schools, followed by 36.1% (n=785) as “not top but above average”. About one fifth (n=418, 19.2%) were “average teachers”, and only 3.2% (n=69) felt they were “below average” according to their responses. Judging from the fact that the majority of NEE teachers across the country nowadays had bachelor’s degrees, held relatively high professional ranks, performed above average, and taught Chinese, this sample was basically representative of the population in these aspects.

Participation in the New Education Experiment⁷

Of the 2173 respondents, approximately two fifth (n=868, 39.9%) were involved in New Education Experiment for 2-5 years, one quarter (n=549, 25.3%) for 1-2 years, and one fifth (n=426, 19.6%) for less than a year, suggesting that more than 75% started New Education reform within the latest five years. Respondents engaged in NEE for more than five years numbered 305 (14%). In addition, seven offered invalid values and 18 did not respond.

A majority of respondents (n=1282, 59%) participated in the annual NEE conference only once, followed by 340 respondents (15.6%) who selected “none,” and 302 (13.9%) who selected “twice.” Teachers attending NEE conference for three times, or four times and more were 101 (4.6%) and 148 (6.8%) respectively, totaling to a percentage of 11.4%.

Considering NEE training sessions, there was roughly an even distribution among the four question choices ranging from “none,” “once,” “twice,” to “three times and more.” The number of teachers who did not attend training (n=487, 22.4%), who attended once (n=483,

22.2%), and who attended twice (n=470, 21.6%) was largely the same. In contrast, about one tenth more (n=689, 31.7%) attended NEE training three times and more. Surprisingly, 44 teachers did not respond to this question item, producing a 2% missing data count, the largest in the 50-item survey. In comparison with the estimates of the staff at the Research Institute of NEE, sampled teachers who participated in NEE conferences or trainings were somewhat over-representative although the sample was not by far deviant from the population.

Operational measures for TVM and TVCE variables

The second part of the questionnaire focused on investigation of teachers' view of the NEE model as well as their view on their own comprehensive efficacy. Each of the 35 items was measured by using a five-point Likert scale from *Strongly Disagree* to *Strongly Agree*. To verify that the two scales (TVM and TVCE) were meaningful, analyses of both validity and reliability of the instrument were conducted. A principal component factor analysis was performed on each scale to determine the underlying components of the construct. The reliability of the instrument was tested using Cronbach's alpha coefficients. Results of the factor analysis and Cronbach test are shown in Appendices 5 and 6. Item specific data were analyzed by using descriptive statistical methods. The total average and item-specific means in each factor were calculated, and the values of Factor 2 items in each scale, though negative in direction, were not reversed.

Results Arranged by Research Questions

Research Question #1 addressed by using descriptive statistical methods:

What is the current state of the participating teachers' view of the NEE model (TVM)?

The answer to Question 1 was revealed in the descriptive data results of the TVM scale. Variables examining teachers' view of the model included 18 items⁸. The score for positive TVM (M=3.68) when compared to the score for negative TVM (M=3.15) was relatively high, indicating that teachers generally perceived the NEE model as effective rather than problematic. Nevertheless, the positive TVM score did not seem to be high enough in contrast to the orally reported data from the NEE developers and media propaganda, which boasted about an overenthusiastic acceptance of the NEE model by the vast majority of participants.

For the sake of clarity and simplicity, data in this sector were presented in five clusters rather than for each item specifically. Respondents' TVM scores ranged from 2.74 to 4.05. Item means clustered above the midpoint (3.40) of the 1-5 scale, and the obtained standard deviations ranged from 0.885 to 1.127. Detailed descriptive statistics, such as frequencies and percentages for each item, are presented in Appendix 7, while item-specific means and standard deviations are presented in Table 4.1. Similar data regarding TVM with respect to the five clusters are presented in Table 4.2.

Overall, teachers reported much higher positive TVM than negative TVM (3.68 vs 3.15). In terms of the results of TVM in the five clusters, the average score (M=3.82) of the first cluster, *perceived reasons for NEE development*, ranked the highest, followed by the cluster of *teachers' exposure to NEE* (M=3.76). These two sets of data suggested respondents' high level of acknowledgement of the NEE model, and their tendency to believe that they were more exposed to new theories and approaches through NEE, and that NEE developed them to be more competent reform implementers. Teachers' evaluation of *the NEE overall project and sub-projects* scored the third (M=3.67), and their perception of *NEE's effect on students* was the fourth, the least score of the positive TVM scale (M=3.49). Both of these items revealed that

teachers' belief in the realization of NEE's general goal as well as specific goals, particularly as measured by students' performance, was just moderately high. Compared to positive TVM, teachers' negative view of the NEE model scored the lowest ($M=3.15$), indicating teachers' moderate to low level of belief in the existence of NEE problems. Below are the more specific reports of the data analyses for each of the five clusters.

Perceived reasons for NEE's development

The scores in this sector (#28, 30, 31, 40, 48) ranged from 3.60 to 4.05, and standard deviations ranged from 0.944 to 1.009. The most robust response was associated with #28 ($M=4.05$, $SD=0.898$), which indicated that respondents tended to believe that the rapid growth of NEE was due to the mode of expert leadership, voluntary participation, and administrative promotion. In contrast, the item with the least robust response was #31 ($M=3.60$, $SD=0.970$), meaning that respondents were comparatively less in agreement with the idea that the reason for choosing NEE was its alignment with teachers' education ideal. Overall, responses in this topical area, with a comprehensive mean (CM) of 3.82, scored the highest of all the five categories concerning their view of the reform model.

To summarize, teachers believed in the effectiveness of the NEE promotion mode, and interpreted NEE as a reform initiative that respected their feelings and emotions, and was in line with their education ideals. Overall, they thought NEE was likely to enhance the educational quality of their school. Teachers perceived the integration of NEE curriculum with the state curriculum as the biggest challenge for NEE's development. All these perceptions contributed to explaining the rapid growth of the NEE reform movement.

Teachers' exposure to NEE

Two items concerned teachers' exposure to NEE. Their relatively high comprehensive score (CM=3.76) was the result of high individual scores in #16 (M=3.89, SD=1.036) and #25 (M=3.62, SD=1.033). This revealed that respondents largely believed that they gained considerable exposure to new theories and teaching approaches through NEE, and became more competent in fulfilling the new roles as NEE teachers through NEE training. In a word, respondents acknowledged the function of NEE in teachers' professional learning and training.

Effectiveness of NEE sub-projects and the overall project

Five items (#32, 43, 44, 46, 50) examined respondents' perception on NEE's realization of its general goal, and specific goals for some important programs. The scores in this sector ranged from 3.48 to 3.89, and standard deviations ranged from 0.885 to 1.021. The comprehensive mean of the five items was 3.67. The lowest score was Variable #50 (M=3.48, SD=1.021), suggesting that respondents were less certain that the goal of NEE, "helping the NEE community members lead a happy and integrated educational life" was basically fulfilled. The item with the highest average score (M=3.89, SD=1.009) was #32, indicating that respondents tended to agree that the first of the six NEE actions "building a book-enticing campus," was most effectively implemented in their schools. Variable #46 was ranked the second highest (M=3.71, SD=0.885), showing respondents' comparatively high agreement with the Three P's model for NEE teacher development: professional reading, professional writing, and the professional development community. In contrast, Item 43 (M=3.64, SD=0.948) and Item 44 (M=3.63, SD=0.946) both were below the comprehensive mean of 3.67, indicating that they were less

likely to see *Children Curriculum* as the most successful curriculum project, and *Reading a Book Together* as the most beneficial activity for NEE teachers' growth.

*Effects on students*⁹

Items 34 and 37 tested teachers' view of NEE's effects on students. Scores in this area ranged from 3.48 to 3.50, and standard deviations ranged from 0.972 to .991. With the higher score of 3.50 for Item #37, and a comprehensive mean of 3.49, respondents appeared to believe that NEE had insignificant effects in stimulating students' motivation and learning autonomy, and enhancing both their test scores and all-round quality as a whole person.

*Negative view of the model*¹⁰

Four items focused on teachers' perception of NEE's problems. The average scores for #47 (M=3.40, SD=1.056), #45 (M=3.25, SD=1.127), and #33 (M=3.20, SD=1.086) were approximate to each other, each suggesting respondents' disbeliefs in the existence of NEE's problems. In other words, they did not think that NEE focused too much on humanistic courses; that it lacked a systematic monitoring and evaluation mechanism; and that NEE did not lead to substantial change in students' overall academic performance. The lowest score of #38 (M=2.74, SD=1.122) revealed that respondents disagreed, to a larger extent, that NEE would, like educational reforms in the past, come and go without making much substantial change in education.

Table. 4.1 Means and Standard Deviations for Items on TVM

Items	M	SD
16. Through NEE, teachers gained more exposure to new	3.89	1.036

education theories and teaching approaches.

25. As NEE teachers, we have received sufficient and effective training and information from NEE to fulfill the new role.	3.62	1.033
28. One of the primary reasons for the rapid growth of NEE is the mode of experts' leadership, voluntary participation, and administrative promotion.	4.05	0.898
30. Overall, I think NEE facilitates to enhance the education quality in our school.	3.87	0.968
31. Compared to other reform models, NEE is the one that is best in line with my education ideal.	3.6	0.97
32. Of the six actions NEE advocates, the first action "building a book-enticing campus" is most effectively implemented in our school.	3.89	1.009
33. Through NEE, the students' reading and writing abilities are improved but there is little substantial change in their comprehensive academic performance.	3.2	1.086
34. Students are more self-motivated and autonomous in learning now.	3.48	0.991
37. Through NEE, both the scores on standardized tests and all-round qualities of students are improved.	3.5	0.972
38. Like any education reform in the past, NEE will come and go without making much substantial change.	2.74	1.122
40. The key to NEE's successful popularization and the reason that teachers embrace it is that it respects teachers' feelings and emotions.	3.76	0.97
43. The most beneficial activity for NEE teachers' growth is "reading a book together".	3.64	0.948
44. The most successful project of NEE is the Children Curriculum.	3.63	0.946
45. NEE focuses too much on humanistic courses while neglecting subjects like math and science.	3.25	1.127
46. NEE's "Three Professionalizations" model gives the	3.71	0.885

impetus to teachers' professional development.

47. NEE is lack of a systematic monitoring and evaluation mechanism.	3.40	1.056
48. The biggest challenge to implement NEE is to integrate NEE curriculum with the state curriculum.	3.78	0.944
50. Overall, I believe the goal of NEE "helping the NEE community members lead a happy and integrated educational life" is basically fulfilled.	3.48	1.021

Table 4.2 Means and Standard Deviations of Each Cluster in TVM

Number	Cluster	Min. M	Max. M	Comp.M	Min. SD	Max. SD
1	Reasons for NEE's development	3.60	4.05	3.82	0.944	1.009
2	Teachers' Exposure to NEE	3.62	3.89	3.76	1.033	1.036
3	Effectiveness of NEE sub-projects and overall project	3.48	3.89	3.67	0.885	1.021
4	Effect on students	3.48	3.50	3.49	0.972	0.991
5	Positive TVM (all four items above combined)	3.55	3.82	3.69	0.959	1.014
6	Negative view of NEE (Negative TVM)	2.74	3.40	3.15	1.056	1.127

Research Question #2 addressed by using descriptive statistical methods:

What is the current state of the participating teachers' view of their comprehensive efficacy (TVCE)?

The answer to Question 2 was revealed in the descriptive data results of the TVCE scale. Variables investigating teachers' view of comprehensive efficacy included 17 items¹¹. The score for positive TVCE (M=3.72) when compared to the score for negative TVCE (M=2.48) was by far higher, indicating that teachers generally perceived that their comprehensive efficacy was increased rather than decreased by NEE. Again for clarity and simplicity, data were presented in five clusters rather than individual items specifically. The original scores of the respondents for TVCE ranged from 2.00 to 4.01. Item means clustered far above the midpoint (3.01) of the 1-5 scale, and the obtained standard deviations ranged from 0.857 to 1.205.

Both positive and negative TVCE were examined. Within the positive TVCE scale, *reform alignment efficacy* scored the highest (M=3.90), whereas *collaborative efficacy* scored the lowest (M=3.54). This indicated that teachers were able to align themselves with the core values and aims of NEE, but comparatively speaking, they were less able to collaborate with each other in implementing NEE. *Self-efficacy* and *collective efficacy* scored nearly the same (M=3.72; M=3.73), suggesting that teachers participating in NEE not only had high self-efficacy but also high collective efficacy. Teachers' efficacy doubts scored the lowest (M=2.48), obviously showing teachers' disbelief in NEE's negative effects on teachers' sense of efficacy. The frequencies and percentages of the items can be found in Appendix 8. Item-specific means and standard deviations are presented in Table 4.3. Similar data of TVCE for the five clusters are presented in Table 4.4. More specific data analyses in clusters are presented below.

*Self-efficacy*¹²

Six items tested teachers' self-efficacy. Scores in this area ranged from 3.45 to 3.90, and standard deviations ranged from 0.961 to 1.133. Item #23 had the highest score (M=3.90,

SD=0.979), indicating that respondents perceived professional development as enhanced. The other two strongly supported items were #21 (M=3.81, SD=1.007) and #17 (M=3.80, SD=0.989), showing respondents tended to believe that they were more interested in teaching, and more likely to take teaching as a lifelong career; and they had more confidence in teaching well after they started the NEE program. The comprehensive mean of the six items was 3.72, meaning respondents generally viewed themselves as efficacious.

Collective efficacy

Items #27, 29, and 35 tested teachers' collective efficacy. The mean scores ranged from 3.49 to 3.96, and standard deviations from 0.947 to 1.039. The high comprehensive mean (M=3.73) indicated a high level of respondents' belief in collective efficacy. More specifically, respondents tended to agree that administrative staff supported NEE (M=3.96, SD=1.039), and that faculty members were committed to reforming their courses along the NEE principle and guidelines (M=3.76, SD=0.947); however, there was less agreement that both teachers and students were happier and more willing to take challenges in teaching and learning (M=3.49, SD=1.032).

Collaborative efficacy

Conceptually speaking, Items 26 and 42 both tested teachers' collaborative efficacy, but #26 was categorized into efficacy doubts group in factor analysis. Scores for Item 42 (M=3.54, SD=0.992) indicated their modest belief in collaborative efficacy. In other words, teachers were not in a strong position to believe that they could actively engage themselves in communicating and collaborating with other NEE members.

Reform alignment efficacy

Items #22, 39 and 41 investigated teachers' reform alignment efficacy. The scores ranged from 3.68 to 4.01, and standard deviations from 0.857 to 1.055. The high comprehensive mean (M=3.90) of this sector indicated that respondents perceived themselves as highly aligned with NEE ethos and aims, and willing to go on with NEE if given a choice. Like NEE advocates, teachers firmly believed (M=4.01, SD=.857) that teaching is a job that requires their emotional engagement and private commitment.

Efficacy doubts

Instead of examining efficacy beliefs, items for this sector (#18, 19, 26, 49) were used to test efficacy doubts. Scores ranged from 2.00 to 2.78, and standard deviations from 1.067 to 1.205. The comprehensive mean was 2.48, which suggested that respondents were unlikely to have high efficacy doubts evident in each item. To be specific, they tended to disagree that they felt more tired and unhappy than before, or their attention was distracted by NEE, or they felt confused about what the teaching focus was, nor did they believe that the more they were involved in NEE, the more disappointed and lack of the initial passion they felt. The lowest score of Item 26 suggested that they firmly disbelieved that it was leaders' requirements rather than their own personal interest that worked to get them involved in NEE.

Table 4.3 Means and Standard Deviations for Items on TVCE

Items	M	SD
17. Compared to before I started the NEE program, I have a greater amount of confidence in teaching well.	3.8	0.989
18. I feel more tired and unhappy than before because NEE increases rather than decreases teachers' workloads.	2.78	1.205
19. NEE distracts my attention. I feel somewhat confused about what the teaching	2.62	1.104

focus is now.

20. I tend to devote more of my private time to teaching since I participated in NEE.	3.45	1.133
21. I am more interested in teaching and more likely to take it as my lifelong career/cause.	3.81	1.007
22. Given a choice, I would choose to go on with NEE.	3.68	1.055
23. I become more and more aware of the importance of professional development and participate in relevant activities more often.	3.9	0.979
24. Generally I read and think more, and have more presentations and publications ever since.	3.77	0.961
26. Personally, I am not interested in NEE, but our leaders require me to do it	2.00	1.163
27. I feel that members of the administration at my institution support this NEE program.	3.96	1.039
29. The faculty members at my institution are committed to reforming their courses along the NEE principle and guidelines.	3.76	0.947
35. Both teachers and students feel happier with their educational life than before and more willing to take challenges in teaching and learning.	3.49	1.032
36. I used to regard teaching kids as a boring job but now I feel teaching is both interesting and meaningful.	3.61	0.992
39. I firmly believe in NEE's ethos: "No pains, no gains"; "Only action leads to gains"; "You'll meet with celebrations sooner or later as long as you are always on the way".	4.01	0.924
41. Education is a job that requires teachers' emotional engagement and private commitment rather than passive manipulation.	4.01	0.857
42. I believe I can actively engage myself in communicating and sharing ideas with the members in the NEE community so as to align with NEE's latest development.	3.54	0.992
49. The more I get engaged in NEE, the more disappointed and lack of the initial passion I feel.	2.52	1.067

Table. 4.4 Means and Standard Deviations of Each Cluster in TVCE

Number	Cluster	Min. M	Max. M	CM	Min. SD	Max. SD
1	Self-efficacy	3.45	3.9	3.72	0.961	1.133
2	Collective efficacy	3.49	3.96	3.73	0.947	1.039
3	Collaborative efficacy	3.54	3.54	3.54	0.992	0.992
4	Reform alignment efficacy	3.68	4.01	3.9	0.857	1.055
5	Positive TVCE (all four items above combined)	3.52	3.85	3.72	0.939	1.097
6	Efficacy doubts (Negative TVCE)	2.00	2.78	2.48	1.067	1.205

Research Questions #3 and #4 addressed by multiple regression analysis:

Does the individual teacher background predict how teachers view the NEE model? Does participation in NEE predict how teachers view the NEE model?

Multiple regression analysis was used to address these questions¹³. Backward stepwise multiple regression¹⁴ was first conducted to determine which independent variables significantly predicted teachers' view of the effectiveness of the NEE model (i.e., Factor 1, positive TVM), and the same procedure was then repeated to determine the effect of IVs on teachers' view of the problems of the model (i.e., Factor 2, negative TVM). The model summary for positive TVM indicated that six variables regarding the individual teacher background, and both variables regarding NEE participation¹⁵ significantly contributed to the model. The final model of the eight significant IVs indicated that the R² was .0535, significantly predicting positive TVM at the 0.001 level (F(8, 1974)=13.95, p<.001). Regression results suggested that teachers who taught in junior high schools, who had higher professional title, and who had five years or less teaching

experience were more likely to have positive view of the NEE model. In contrast, teachers who taught English, who taught in rural schools, and who taught in midland schools were more likely to have lower positive TVM. In terms of NEE participation, results showed that the more the participants were involved in NEE activities (trainings or annual conferences), and the longer they participated in the NEE program, the more likely they were to view the NEE model in a positive way. The adjusted R^2 , compensating for the bias in R^2 , was .050, reflecting a modest but significant overall strength of relationship between the eight predictors and positive TVM.

The finding that only 5% of the total variance of positive TVM was explained was unexpected, but it was likely to predict that findings for negative TVM and TVCE may follow the same pattern, which was later proven to be true. This may suggest some other significant antecedents or mediating factors were not included in the regression model.

An examination of the magnitude of the B values indicated that junior high schools ($B=3.016$) and five years or less teaching experience ($B=2.200$) were the two strongest variables predicting positive TVM. It may be reasonable that inexperienced teachers accepted the reform initiative better, however, the result that junior high teachers viewed the reform model more positively than elementary school teachers was quite surprising. It is generally assumed that NEE would be more effective in elementary schools, and teachers at elementary level would correspondingly score higher in positive TVM. The reason might be the imposed implementation of some school districts at the elementary school level, which is less true for the junior high schools, as district leaders are afraid of the test pressure of *zhongkao*. Hence, junior high schools probably had more freedom in selecting this reform model, a hypothesis confirmed by my site visits.

The inverse associations of positive TVM with rural schools ($B=-1.025$), midland schools ($B=-1.082$), and English ($B=-1.332$) were also notable. English teachers were not likely to be as satisfied as teachers of Chinese in NEE implementation because this reform model, its curriculum and instruction approach in particular, was not designed for them but for Chinese teachers. Again, rural and midland school teachers, due to their own low qualifications and education backgrounds, and schools' poorly-equipped teaching facilities, would feel it difficult to embrace the NEE reform.

Interestingly, none of the variables regarding respondents' age, gender, teaching rank, education, public-private school type, and even colleagues' evaluation was predictive of positive TVM, which was a somewhat unexpected finding. However, this seems to be in agreement with Tschannen-Moran and Woolfolk Hoy's (2002) studies comparing factors influencing self-efficacy beliefs of novice and experienced teachers. They concluded that no differences were found in teacher efficacy based on teacher's gender, race, age, and school context, but differences were found according to the school level and years of experience.

The model summary for negative TVM indicated that only two variables, *school level_ junior high*, and *school location_ western schools*, significantly contributed to the model. The R^2 was .013, significantly predicting negative TVM at the 0.001 level ($F(2, 2139)=14.92, p<.001$). Regression results suggested that *school level_ junior high* was inversely associated with negative TVM or teachers' view of NEE problems, while teachers who taught in western schools had a significantly positive association with negative TVM. In other words, junior high teachers were less likely to view the NEE model as problematic, whereas teachers in western schools were more likely to notice the problems of NEE. All other variables regarding teacher

demographics and background were unrelated with negative TVM. The results of regression analyses are summarized in Table 4.5 and Table 4.6.

Considering the educational disparity between China’s east and west, there is no wonder that the teacher cohort in western schools, who are relatively poor either in quantity or in quality, feel more negative due to their incapability to tackle the reform challenge. The inverse relationship between junior high teachers and negative TVM is consistent with the corresponding finding for positive TVM.

Table 4.5 Results of Regression Analysis of Positive TVM on Significant Variables of Teacher Background and NEE Participation

	B	Std. error	t	Sig.
School level_ Junior high	3.016	.544	5.55	.000**
School distinction_ Rural schools	-1.025	.392	-2.61	.009**
School type_ Midland schools	-1.082	.548	-1.97	.049*
Teaching experience_ Five years or less	2.200	.532	4.13	.000**
Teaching subject_ English	-1.332	.615	-2.16	.031*
Professional title	.514	.248	2.08	.038*
Years of NEE participation	.468	.215	2.17	.030*
Level of NEE participation	.739	.124	5.95	.000**

*Statistically significant at $p < .05$, **statistically significant at $p < .01$

Table 4.6 Results of Regression Analysis of Negative TVM on Significant Variables of Teacher Background and NEE Participation

	B	Std. error	t	Sig.
School level_ Junior high	-.710	0.03	5.08	.000**
School location_ West	.608	0.023	-2.51	.003**

*Statistically significant at $p < .05$, **statistically significant at $p < .01$

Research Questions #5 and #6 addressed by multiple regression analysis:

Does the individual teacher background predict teachers' view of comprehensive efficacy? Does participation in NEE predict teachers' view of comprehensive efficacy?

Like the model test for TVM, backward stepwise multiple regression was conducted to determine which variables significantly predicted teachers' comprehensive efficacy beliefs (i.e., Factor 1, positive TVCE), and efficacy doubts (i.e., Factor 2, negative TVCE). Model summary for positive TVCE indicated that only three variables regarding the individual teacher background (school level_ junior high, teaching experience_ five years or less, and teaching subject_ English), and the two variables regarding NEE participation (years of NEE participation and level of NEE participation), significantly contributed to the model. Interpretation of the final regression model indicated that the R^2 was .0475, which significantly predicted positive TVCE at the 0.01 level ($F(5, 2023)=20.18, p < .001$). Results regarding teacher background revealed that teachers teaching in junior high schools and having five years or less teaching experience had a statistically significant positive association with TVCE. The same was true with the relationship between NEE participation and TVCE: the more involvement in NEE activities and the longer time of NEE participation, the more likely teachers were to have high positive TVCE. In contrast, teachers who taught English tended to have a lower level of positive TVCE. The

adjusted R^2 , compensating for the bias in R^2 , was .0451, reflecting a modest but significant overall strength of relationship between the four predictors and positive TVCE.

Compared to the predictors of positive TVM, teachers' professional titles no longer had effects on their comprehensive efficacy beliefs (positive TVCE). This may be because the efficacy beliefs of the teachers with high professional titles had already been relatively high and stable, thus they were difficult to be further heightened. Bandura's (1977) theory suggested that efficacy may be most malleable in the early years of learning. "Thus the first years of teaching could be critical to the long-term development of teacher efficacy." (Shaughnessy, 2004, p. 155). Another explanation is the effect of professional titles on positive TVCE may be mediated by some other factor, which was later proved to be positive TVM.

A second finding different from positive TVM predictors was rural schools and midland schools were not related to positive TVCE. A possible explanation should be teachers at these schools, even if NEE was implemented in one way or another, were less affected or changed due to some personal and environmental constraints. Thus, their efficacy beliefs remained considerably stable regardless of the reform.

The model summary for negative TVCE indicated that six variables¹⁵ significantly contributed to the model. The R^2 was .043, significantly predicted negative TVCE at the 0.001 level ($F(6, 2060)=15.56, p<.001$). Regression results suggested that teachers who taught in junior high, suburban, and eastern schools, and teachers who were more involved in NEE, had a significantly negative association with negative TVCE or teachers' efficacy doubts, while teachers who taught math and had ten years or more teaching experience, had a significantly positive association with negative TVCE. In other words, teachers teaching in junior high,

suburban, eastern schools, and teachers with higher involvement in NEE activities, were less likely to have negative TVCE or efficacy doubts, while teachers teaching math and having longer teaching experience tended to have more negative TVCE or efficacy doubts. Another interesting result was that *years of NEE participation* was no longer significant in predicting negative TVCE. This revealed that NEE teachers may or may not have negative TVCE, regardless of how many years they were engaged in NEE. The results of regression analyses are summarized in Table 4.7 and Table 4.8.

It is understandable that junior high teachers, eastern school teachers, suburban school teachers, and teachers involved in NEE at greater level had lower efficacy doubts, the same is with the findings that Math teachers and teachers with ten years or more experience had higher efficacy doubts. However, the result that *years of NEE participation* was not a significant predictor of teacher efficacy doubts was rather surprising. Teachers implementing NEE for longer time but not at greater level may feel neglected or undervalued, thus their efficacy doubts would remain unaffected. We can imagine how a NEE participant would feel if, regardless of his or her long-term involvement, were still deprived of the opportunities to be chosen to attend conferences, give presentations, show open classes, or get trained.

Table 4.7 Results of Regression Analysis of Positive TVCE on Significant Variables of Teacher Background and NEE Participation

	B	Std. error	t	Sig.
School level_ Junior high	2.302	.469	4.90	.000***
Teaching experience_ Five years or less	2.630	.442	5.95	.000***
Teaching subject_ English	-1.619	.569	-2.85	.004**

Years of NEE participation	.540	.198	2.74	.006**
Level of NEE participation	.590	.115	5.15	.000***

Statistically significant at $p < .01$; *Statistically significant at $p < .001$

Table 4.8 Results of Regression Analysis of Negative TVCE on Significant Variables of Teacher Background and NEE Participation

	B	Std. error	t	Sig.
School level_ Junior high	-.296	.047	-.631	.000***
School distinction_ Suburban	-.126	.054	-2.32	.021*
Teaching subject_ Math	.087	.041	2.10	.036*
Teaching experience_ Ten years or above	.079	.036	2.18	.029*
School location_ Eastern schools	-.191	.041	-4.67	.000***
Level of NEE participation	-.026	.011	-2.39	.017*

*Statistically significant at $p < .05$; **Statistically significant at $p < .01$;

***Statistically significant at $p < .001$.

Research Question #7 addressed by multiple regression analysis:

Does teachers' view of the NEE model predict teachers' view of comprehensive efficacy?

Regression analysis was conducted to determine whether TVM predicted TVCE. Model summary indicated that both positive TVM and negative TVM, respectively or together, significantly predicted positive TVCE as well as negative TVCE. Interestingly, positive TVM contributed to predicting 78.29% of TVCE variance at the .001 level ($R^2 = .7829$, $F(1, 2053) = 7402.20$, $p < .001$), whereas the combined contribution of positive and negative TVM was

78.30%, which indicated that negative TVM, though a significant predictor, did not add much capacity to explain the TVCE variance ($R^2=.0051$, $F(1, 2097)=10.84$, $p<.001$).

Unlike the predicting pattern of positive TVCE on TVM, negative TVM predicted one third more of the negative TVCE variance than positive TVM did. The R^2 for negative TVCE on negative TVM was .2757 ($F(1, 2136)=813.18$, $p<.001$), while the R^2 for negative TVCE on positive TVM was .1258 ($F(1, 2077)=298.88$, $p<.001$). The combined contribution to predicting negative TVCE was .4004, suggesting 40.4% of the negative TVCE variance was attributable to positive and negative TVM together. The results of regression analyses are summarized in Table 4.9 and Table 4.10.

In summary, teachers with *higher* level of positive TVM and *lower* level of negative TVM would have *higher* level of positive TVCE. Taken together, 78.30% variance of positive TVCE was explained by TVM. For one unit *increase* of positive TVM, positive TVCE *increased* .834 units correspondingly, while for one unit *increase* of negative TVM, positive TVCE *decreased* .118 units correspondingly. In contrast, only 40.04% of the variance for negative TVCE was explained by TVM. Teachers with one unit *higher* level of positive TVM were likely to have .032 units *lower* level of negative TVCE, and teachers with one unit *higher* level of negative TVM were likely to have .143 *higher* level of negative TVCE. These results were consistent with early research findings that teachers' attitudes toward reform programs were critical in developing their efficacy beliefs in the process of reform implementation (Rosenholtz, 1987).

Table 4.9 Results of Regression Analysis of Positive TVCE on TVM

TVM	B	Std. error	t	Sig.	R^2
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Positive TVM	.837	.010	86.04	.000***	.7829
Negative TVM	-.192	.058	-.329	.001**	.0051
Positive TVM and negative TVM combined	.834	.010	85.47	.000***	.7830
	-.118	.028	-4.26	.000***	

Statistically significant at p<.01; *Statistically significant at p<.001

Table 4.10 Results of Regression Analysis of Negative TVCE on TVM

TVM	B	Std. error	t	Sig.	R ²
Positive TVM	-.034	.002	-17.28	.000***	.1258
Negative TVM	.143	.005	28.52	.000***	.2757
Positive TVM and negative TVM combined	-.032	.001	-19.68	.000***	.4004
	.143	.005	30.68	.000***	

***Statistically significant at p<.001.

Research Question #8 addressed by mediation test:

Does TVM mediate the relationship between the independent variables of individual teacher background and participation in NEE, and dependent variable of TVCE?

In order to determine whether the relationships between individual teacher background, participation of NEE, and TVCE were mediated by TVM, the mediation test was performed. To run the mediation test, four conditions need to be met: 1) The regression of the outcome (DV) on the treatment (IV), ignoring the mediator (M), is significant; 2) The regression of the mediator on

the treatment is significant; 3) The regression of the outcome on the mediator, controlling for the treatment, is significant; and 4) Regression of the outcome on the treatment controlling for the mediator is non-significant and nearly-zero. (Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1997). This is the strict criterion, however, and a less strict criterion allows Condition 1 to be unmet. This can be further illustrated by using an example of parents' education and children's income. The relationship between parents' education and children's income can be statistically insignificant, but if parents' education is significantly related to children's education, and children's education is significantly related to their income, then children's education is still qualified to be considered a mediator between the two.

Four series of regression analyses were performed to determine whether or not the mediating effect existed. Initial data analysis indicated that there was a significant overall total effect of positive TVM on positive TVCE ($B=.833$, $p<.001$), so it was with the effects of negative TVM on positive TVCE ($B=-.141$, $p<.05$), positive TVM on negative TVCE ($B=-.032$, $p<.001$), and negative TVM on negative TVCE ($B=.141$, $p<.001$).

Bootstrap standard errors and confidence intervals¹⁷ were used to correct skewness and kurtosis of the sampling distribution of the mediation product coefficients (Preacher & Hayes, 2005). The confidence interval for testing the indirect effect of each independent variable on TVCE via TVM in the mediation test did not contain zero. Therefore the indirect effect for each independent variable, controlling for the other significant covariates, was considered to be statistically significant.

In the first series of analyses, the possible mediating effect of positive TVM (the mediator) on the relationship between individual teacher background, NEE participation (the

predictors or IVs) and positive TVCE (the criterion or DV) was assessed. Only four of the eight significant positive TVM and TVCE predictors, that is, school level_ junior high, teaching subject_ English, years of NEE participation, and level of NEE participation, met the strict criterion. Another three TVM predictors, school location_ midland schools, school distinction_ rural schools, and professional title, could be added for mediation test if the criterion was made less strict. The predictor of five years or less teaching experience violated Condition 4, suggesting that it was significantly related to positive TVCE when the effect of positive TVM was controlled, thus it was excluded from further mediating effect test.

Table 11 contains results of the mediation estimates through positive TVM to positive TVCE. The results of mediation test showed that the indirect effects of all predictors except X2, five years or less teaching experience, were statistically significant. After controlling for the mediator positive TVM, the direct effect of the predictor, five years or less teaching experience, still remained significant, showing that positive TVM was not a mediator between this predictor and positive TVCE. The direct effects of the four predictors, school level_ junior high, teaching subject_ English, years of NEE participation, and level of NEE participation dropped to non-significant ($B_{X1}=.411$, $p > .05$; $B_{X3}=-.347$, $p>.05$; $B_{X7}=.049$, $p>.05$), or nearly-zero ($B_{X8}=-.006$, $p>.05$). Thus these predictors, together with the other three without direct effects, demonstrated that their effects on positive TVCE were consistently and fully mediated by teachers' positive view of the NEE model. Three predictors, teaching subject_ English, school location_ midland schools, and school distinction_ rural schools, demonstrated a negative relationship with positive TVCE, indicating that teachers who taught English, in the midland schools, or rural schools, were likely to hold low level of positive TVCE when the mediator positive TVM was introduced. In contrast, teachers who taught at junior high level, with higher professional title, or

participating in NEE at higher level or for longer time, were more likely to have high positive TVCE when the same mediator positive TVM was controlled.

Table 4.11 Direct, Indirect, and Total Effects of IVs on Positive TVCE through Positive TVM (N=2173)

Predictors	Direct effect	Indirect effect (Indirect/total effect)	Total effect	Bias-corrected Bootstrapping confidence interval
X1 School level_ Junior high	.411	2.41***(85.4%)	2.81	1.570 ~ 3.248
X2 Teaching experience_ Five years or less	1.01***	-	-	1.005 ~ 2.736
X3 Teaching subject_ English	-.347	-1.213*(77.7%)	-1.560	-2.325 ~ -.126
X4 School location_ Midland schools	-	-.956*	-	-1.805 ~ -.112
X5 School distinction_ Rural schools	-	-.838*	-	-1.465 ~ -.176
X6 Professional title	-	.427*	-	.010 ~ .876
X7 Years of NEE participation	.049	.410*(89.3%)	.459	.071 ~ .734
X8 Level of NEE participation	-.006	.573***(101%)	.567	.347 ~ .795

*Statistically significant at $p < .05$; **Statistically significant at $p < .01$;

***Statistically significant at $p < .001$

The same analysis was performed by substituting negative TVM for positive TVM as the possible mediator. The results showed that no direct effect of the predictors on positive

TVCE became non-significant or nearly-zero when the mediator negative TVM was introduced. Thus, negative TVM was not found to be a mediator of the relationship between predictors and positive TVCE.

In the third series of analyses, the possible mediating effect of positive TVM between predictors and negative TVCE was examined. Only one of the significant predictors for positive TVM and negative TVCE, that is, level of NEE participation, met the four conditions of the strict criterion prescribed by Baron and Kenny (1986). Another six positive TVM predictors, school location_ midland schools, school distinction_ rural schools, five years or less teaching experience , teaching subject_ English, professional title, and years of NEE participation, could be added for mediation test if the criterion was made less strict. The predictor, school level_ junior high, violated Condition 4, suggesting that it still had a significant direct effect on negative TVCE when the effect of positive TVM was controlled, thus it was excluded from mediating effect test.

Table 12 showed the results of mediation test through positive TVM to negative TVCE. After controlling for the mediator positive TVM, the direct effect of the predictor, school level_ junior high, still remained significant, showing that positive TVM was not a mediator between this predictor and negative TVCE. In contrast, the direct effect of the predictor, level of NEE participation, dropped to non-significant $B=.004, p>.05$), indicating the existence of mediating effect between level of NEE participation and negative TVCE. The negative score ($B=-.023, p<.001$) of its indirect effect showed the more the teachers participated in NEE, the less the likelihood for them to have negative TVCE.

Another six predictors of positive TVM were not directly related to negative TVCE but had significant indirect effects through the mediator of positive TVM. They were: school location_ midland schools (B=.035, p<.05), school distinction_ rural schools (B=.035, p<.05), teaching experience_ five years or less (B=-.069, p<.001), teaching subject_ English (B=.042, p<.05), years of NEE participation (B=-.015, p<.05), and professional title (B=-.167, p<.05). Three out of the six predictors, like the variable *level of NEE participation*, were inversely related to teachers' efficacy doubts or negative TVCE, indicating that teachers with higher professional title, teachers with less teaching experience, and teachers who participated in NEE for higher level and longer time were less likely to have negative TVCE when the mediator of positive TVM was introduced. The positive scores of the other three predictors suggested that even if positive TVM was controlled, teachers in rural schools, teachers in midland schools, and teachers who taught English tended to have negative TVCE.

Table 4.12 Direct, Indirect, and Total Effects of IVs on Negative TVCE through Positive TVM (N=2173)

Predictors	Direct effect	Indirect effect (Indirect/total effect)	Total effect	Bias-corrected Bootstrapping confidence interval
X1 School level_ Junior high	-.251***	-	-	-.129 ~ -.062
X2 Teaching experience_ Five years or less	-	-.069***	-	-.105 ~ -.036
X3 Teaching subject_ English	-	.042*	-	.005 ~ .086
X4 School location_ Midland schools	-	.035*	-	.004 ~ .067

X5 School distinction_ Rural schools	-	.035*	-	.009 ~ .060
X6 Professional title	-	-.167*	-	-.034 ~ -.001
X7 Years of NEE participation	-	-.015*	-	-.028 ~ -.003
X8 Level of NEE participation	.004	-.023***(122%)	-.019	-.033 ~ -.014
X9 Teaching subject_ Math	.087*	-	-	-
X10 School distinction_ Suburban schools	-.124*	-	-	-
X11 School location_ Eastern schools	-.178***	-	-	-
X12 Teaching experience_ ten years or above ¹⁶	.057	-	-	-

*Statistically significant at $p < .05$; **Statistically significant at $p < .01$;

***Statistically significant at $p < .001$

A fourth series of analyses were run by substituting negative TVM for positive TVM as the possible mediator between the predictors and negative TVCE. Results showed that no direct effect of the predictors on negative TVCE became non-significant or nearly-zero when the mediator negative TVM was introduced. Thus, negative TVM was not found to have mediating effect.

In summary, the mediation tests modified some results obtained from the previous regression analyses, and showed a clearer picture of relationships between TVCE and its predictors. The most striking finding was that more variables, even if they had no direct effects

on TVCE, were found to have indirect effects through the mediator of positive TVM. Midland schools, rural schools, and professional title were not directly related to teachers' comprehensive efficacy beliefs (positive TVCE), however, the former two began to show negative indirect effects, and the latter, positive indirect effect on comprehensive efficacy beliefs when the mediator was considered. This suggested that teachers in midland and rural schools, due to the many constraints in NEE implementation such as teacher under-qualification, teacher burnout, and poor school facilities, were likely to have their efficacy beliefs undermined rather than enhanced even when they perceived NEE to be an effective model. In contrast, teachers with high professional titles alone were not related to high positive TVCE, however, if this group of teachers viewed the NEE model positively, they were likely to have more comprehensive efficacy beliefs.

As for efficacy doubts (negative TVCE), six more variables were found to be indirectly associated with it. Three of them, *English*, *midland schools*, and *rural schools*, were positively related to efficacy doubts, while the other three, *five years or less teaching experience*, *professional title*, and *years of NEE participation*, had a negative relationship with it. This indicated that when positive TVM was controlled, English teachers, and teachers at rural or midland schools were likely to have more efficacy doubts, while teachers with five years or less experience, high professional titles, and longer time of NEE participation were likely to have fewer efficacy doubts. Attention needs to be paid to *years of NEE participation*, which had not been a significant predictor of efficacy doubts, turning to be a negative predictor after the mediator positive TVM was involved. This revealed that if teachers viewed the model positively, the longer time of NEE participation was predictive of fewer efficacy doubts. Similar attention should go to the variable of *teaching experience_ ten years or above*, which had been positively

associated with efficacy doubts but was not any more when positive TVM mediated. Another finding was the negative effect of *school level_junior high* on efficacy doubts, and the positive effect of *teaching experience_five years or less* on comprehensive efficacy beliefs were not mediated by positive TVM. In other words, being a junior high teacher was directly related to fewer efficacy doubts, while being a teacher with five years or less teaching experience was directly related to more comprehensive efficacy beliefs.

Summary of the results

To summarize, the results offered six major answers to the questions investigated: 1) teachers generally had relatively high positive TVM and TVCE while their negative TVM and TVCE were considerably low; 2) Except for teaching experience and professional title, none of the teacher demographic variables concerning age, gender, first or highest academic degree, nor the variable of colleagues' evaluation was related to TVM or TVCE; 3) Except for the school type (public vs private), all contextual factors, including school level, geographic location, rural-urban distinction, subject matter, could be associated with TVM or TVCE; 4) Both the number of years and level of NEE participation predicted TVCE and positive TVM; 5) Teachers' view of the NEE model was predictive of teachers' view of comprehensive efficacy; and 6) Positive TVM mediated the relationship between the predictors (i.e., teachers' demographic and contextual factors, and participation in NEE) and TVCE. Below is a more detailed elaboration on the specifics of some complex answers.

Considering the TVM predictors, six of all teacher background variables (including demographic and contextual factors) and both variables of NEE participation predicted positive TVM; in contrast, only two teacher background variables and no variable regarding NEE

participation predicted negative TVM or teachers' view of NEE problems. Teachers who taught in junior high, teachers who had five years or less teaching experience, and teachers who had higher professional title were likely to have higher positive TVM; teachers who taught English, who taught in rural schools, and who taught in Midland schools, would have lower positive TVM. In terms of NEE participation, the greater the time spent in NEE, the more positively teachers would view the model; and the greater level of participation in NEE (conferences, trainings, and presentations), the more positively teachers would view the model. As for teachers' perception of NEE's problems or negative TVM, junior high teachers tended to have lower level of negative TVM, while teachers in western schools tended to have higher level of negative TVM or perceive the NEE model as more problematic.

For TVCE predictors, only three teacher background variables but both variables of NEE participation predicted positive TVCE; in contrast, five teacher background variables and one variable of NEE participation predicted negative TVCE or teachers' efficacy doubts. Teachers who taught in junior high and teachers who had five years or less teaching experience were likely to have higher positive TVCE; teachers who taught English were likely to have lower positive TVCE. In terms of NEE participation, the greater the time spent in NEE, the more positively teachers would view their efficacy; and the greater level of participation in NEE (conferences, trainings, and presentations), the more positively teachers would view their efficacy. As for teachers' perception of Negative TVCE or efficacy doubts, junior high teachers, suburban teachers, and teachers in eastern schools tended to have lower negative TVCE, while teachers who taught math and teachers who had ten years or more teaching experience tended to have higher level of negative TVCE or efficacy doubts. Surprisingly, *years of NEE participation* was

no longer a significant predictor of negative TVCE, but *level of NEE participation* was: the greater level of participation in NEE, the less amount of efficacy doubts or negative TVCE.

Teachers' view of the model was a strong predictor of teachers' view of comprehensive efficacy. Overall, 78.30% of the variance in positive TVCE was explained by TVM, and 40.04% of the variance in negative TVCE was attributable to TVM as well.

Positive TVM was confirmed to be a mediator between the predictors and TVCE but negative TVM was not. Results demonstrated that effects of seven predictors on positive TVCE, and effects of seven predictors on negative TVCE were consistently and fully mediated by positive TVM. Teachers who taught English, and who taught in the midland schools or rural schools, would hold low level of positive TVCE when the mediator positive TVM was introduced. In contrast, teachers who taught at junior high level, with higher professional titles, or participating in NEE at higher level or for longer time, were more likely to have high positive TVCE when the same mediator positive TVM was controlled. In terms of negative TVCE, teachers with higher professional titles, teachers with less teaching experience, and teachers who participated in NEE for higher level and longer time were less likely to have negative TVCE when the mediator of positive TVM was introduced. Results also revealed that even if positive TVM was controlled, teachers in rural schools, teachers in midland schools, and teachers who taught English tended to have high negative TVCE.

All these results suggested that teachers' positive view of the reform model was significant, not only in itself but also as a mediating factor, in developing teachers' view of comprehensive efficacy. It strengthened the positive effects, and weakened the negative effects

of teacher background on teachers' view of comprehensive efficacy. This fits in our hypothesis as well as prior research findings (Rosenholtz, 1987).

Chapter 5 Qualitative Result

This chapter presents the qualitative results based on the researcher's 11 weeks of ethnographic study at Experimental School Affiliated and data gathered from site visits or other sources during December 2009 to December 2010. The purpose is to explore how teachers perceive the NEE model and their changes in comprehensive efficacy so as to get a deeper insight about the relationships revealed by quantitative data between teacher background, NEE participation, TVM, and TVCE. This chapter attempts to answer: How do individual teacher background, NEE participation, and teachers' view of the NEE model yield changed view of comprehensive efficacy? And what does the whole picture look like?

Research setting: an introduction to Experimental School Affiliated

Experimental School Affiliated is a single building complex school founded in 2000. It is a privately invested nine-year boarding school composed of an elementary school and a junior high school. The elementary school has five grades, recruiting students from 7 to 12 years old; the junior high has four grades: the preliminary grade, 1st grade, 2nd grade, and 3rd grade, with students ranging in age from 12 to 16.

Experimental School Affiliated is an elite school located in one of the largest cities in China. It has the reputation for being one of the best schools in the metropolitan area. Of the 130 parents I surveyed, 123 (94.6%) believed the school provided satisfactory education to their

children, and 119 (91.5%) acknowledged the school's high education quality and social reputation, which was the main reason they chose the school. Nevertheless, the school board felt increasingly threatened by highly competitive private schools surrounding them. In the recent years, ESA has been struggling to keep the 4th place in the city's ranking of 43 schools.

Student recruitment

The combined enrollment is 1,127 students: 593 at elementary and 534 at junior high stages. Different from the nine-year public schools, which enroll students free of charge on the basis of residence area, elite private schools in China are highly selective enrolling students, predominantly based on test scores. As a private school, most students at ESA pay an average of 12,000 yuan (a bit less than \$ 2,000) for their yearly tuition and fees, a charge that only rich Chinese families can afford. Students called *jiedusheng* are supposed to pay double the price because their test score is a few points below the minimum. *Jiedusheng* who cannot make much progress in their study are generally not allowed to participate in *zhongkao* (senior high school entrance exam) at this school because their *zhongkao* score may influence the school's average and, hence, the school's reputation would be damaged. They may participate in the exam in their home-site school. Students with a high *zhongkao* score are more likely to enroll in the more prestigious senior high schools.

Curriculum structure

Students at ESA spend most of their time studying a prescribed curriculum. Subjects range from Chinese, math, English, physics, chemistry, politics (main courses, *zhuke*) to science, history, geography, biology, physical education, drawing, and music (side courses, *fuke*). As a result of the national New Curricula Reform, only the main courses are mandatory, while many

side courses are elective. Experimental School Affiliated boasted that a comprehensive curriculum framework has been developed, consisting of basic curriculum, school-based extension curriculum (such as classic readings, children’s literature, spoken English training, art and esthetics, calligraphy, social practice, gymnastics, martial arts), and research-oriented inquiry curriculum (such as IT and animation designing, robot making, model aeronautics, new energy development, Olympic math). However, the second type of curriculum is generally done after 3:30 pm, when the regular school is over, while the third type is limited only to a small number of students. After all, they don’t determine whether one can enroll in a prestigious senior high school. Only test scores of the main courses are believed to matter in one’s acceptance by a good school.

Teacher cohort

There are 88 teachers at ESA, with the male female ratio being 1:4.5. Eight of them live on campus; the rest live off campus. More than 80% (n=71) have a bachelor’s degree, but teachers with a master’s degree or an associate bachelor’s degree are merely two and fifteen respectively. 52 of the teachers work at the elementary department, 36 at junior high department. In terms of age composition, 37 are 35 years old or below, 41 are between 36-45, and only 10 are over 45 years old, yielding the average age of 36.88. The demographic data of the teachers at ESA are shown in Table 5.1.

Table 5.1 Demographic data of the teachers at ESA

	Elementary	Junior high
Level	52	36

	Master	Bachelor	Associate bachelor	
Degree	2	71	15	
Gender	Male	Female		
	16	72		
Age group (M=36.88)	35 or below	36-45	46-55	56 or above
	37	41	3	7

Quite a few have worked at ESA since it was founded, but many more are newcomers recruited in the past five years. The degree of teacher mobility is detrimental to the school's sustainable development. At the beginning, due to the new comfortable environment and high salary, the best teachers were attracted from the neighboring public schools. As the comparative advantage slowly disappears, partly because of the growth of better-equipped and better-paid private schools, and partly because of the increasing governmental support to the public schools, ESA feels great pressure, and difficulty in keeping best teachers from moving elsewhere. With an average age of 37, the current faculty team is substantially young but instructionally strong. Most of them have a bachelor's degree from prestigious normal universities, but only two hold a master's degree.

Daily school activities

The fall term in most Chinese K12 schools runs from September 1st through mid January of the next year. Every morning students arrive at school before 7:40 and then read books aloud by themselves in their classroom till 7:55. Formal morning classes start from 8:20 to 11:30 (four periods); and afternoon classes begin at 1:00 p.m. and end at 3:30 p.m. (three periods). Class

periods last 40 minutes each, with ten minutes' break in between. Between 7:55 and 8:20 in the morning, students are required to line up on the school playground for 1) national flag-raising ceremony every Monday and 2) morning exercises on other days. After the second class in the morning and afternoon, students remain in their classroom doing eye exercises for protecting their eyesight. It is between 3:30 and 4:20 in the afternoon that the school-based extension curriculum is implemented. Each student may participate in some course they are interested in, but many select academic rather than entertaining courses. After 4:20 p.m. and by about 5:00 p.m., most students have gone back home. The 160 boarding students either continue to study in the classroom or go out and play till dinnertime at 5:30. While the boarders eat three meals a day at school, all students and faculty eat lunch in the school dining hall. After supper, boarding students study in their classroom for about two hours from 6:10 to 8:00, then they return to their dorms, some showering, some still doing their homework. By 9:30, all students are required to go to bed, and they get up at 6:00 the next morning.

Teachers teach about two to three periods every day, specializing in certain subjects, but often rotating yearly by following their students to the next grades. The average class size at ESA is 40-45. All students are assigned seats at individual desks facing the front, but every two are paired and their desks are pushed together while remaining equal distance from other pairs. Unlike American practice, it is students not teachers who stay in their classroom for almost all their courses; teachers have to move to different classrooms. For each class (*ban*) made up of 40-45 students, a head teacher (*banzhuren*) takes full responsibility of the class: academic, moral, social, physical, and emotional, and developing positive rapport with the students and their parents. *Ban* is taken as a collective, important not only to personal growth but also to moral education. It is in the *ban* that students learn to communicate, understand, and love each other,

offer help to those in academic, emotional or financial difficulty; moreover, everyone takes it an honor to be in the *ban*, fighting to win more honor and reputation for their *ban* by keeping the floor and furniture tidy and clean, beautifying the classroom walls, and competing against other *bans* in the academic or athletic contests. Upon entering each *ban* at ESA, you would be impressed with their *ban* logo and *ban* slogan hanging beside the door, and the distinctive *ban* culture inside their classroom.

Three kinds of ceremonies are noteworthy at ESA: raising the national flag, entering school, and leaving school. School begins with the entering school ceremony from 7:15-7:35, in which one teacher and 8 students on duty (*zhirisheng*) stand on both sides of the school gate welcoming teachers and students to school. Students are welcomed by *zhirisheng* with a smile, while teachers are greeted with “good morning, teacher” and a salute in addition to a smile. As the classroom morning reading often starts at 7:40, *zhirisheng* normally leave their post at 7:35, so students arriving between 7:35 and 7:40 cannot have this treat, conveying that their behavior is less than praiseworthy. The leaving school ceremony between 4:20 and 5:00 in the afternoon follows the same formalities, but the students are well organized, with one whole *ban* going after another like the athletes’ entrance in the Olympic Games. Parents coming to pick up children wait outside the gate, keeping an eye of the class sign (*banpai*) held by the leading student from the same class of their child.

Raising the national flag is the grandest ceremony and involves all faculty and students. Watching all students walk out of classrooms and arrive at their predetermined location on the playground within a couple of minutes is amazing. Students in school uniforms (Young Pioneers are required to wear red scarves) stand in straight lines, and the head teacher (*banzhuren*) of each class remains in front of the class keeping discipline. In company with the music of the school

marching band, the flag guards carry the national flag, marching to the mast. When the sacred flag-raising moment starts, all students and teachers face the flag, watching it go up, and singing the anthem with the music from the loudspeaker. Young Pioneers salute the flag with their hands raised above their heads. After the flag is raised, there used to be a spiritually lofty address delivered by a designated administrator or principal. However, the New Education transforms it into an opportunity to share school stories, class stories, and personal stories of students and teachers.

New Education Experiment at Experimental School Affiliated

After much investigation and comparison, the ESA school board decided to adopt the New Education Experiment model in the fall of 2010. As a new NEE member with glorious historic record, both parties, ESA and NEE developers, attach much importance to the project. A staff member from the NEE institute has been designated as one of the two vice principals of the school. The chairman of the school board supervises the implementation in person and works daily on campus. Nevertheless, the school takes cautious steps: implementing one aspect of the NEE model at a time, observing faculty receptivity and incremental change, then deciding whether to continue, improve, or transform it. In the fall semester, the elementary school selected the *children curriculum* but focused more on the first of the three R's model (Morning Reciting, Midday Reading, and Evening Reflection); the junior high selected *ideal classroom*, with their initial efforts put in the first of the three L's model of implementing the effective teaching framework. However, the whole school is basically guided by the core NEE values, which emphasize nurturing of book-reading culture, and pursuit of a happy and integrative educational life.

Ritual of initiation

I arrived at the railway station late on the night of September 4, 2010. A vice principal who I named Ben, and a school driver were waiting for me. As soon as they saw me, they greeted me warmly, and we headed for the school directly. About 40 minutes later, we arrived. Then Ben led me to the room the school assigned me. Everything was prepared well in advance; even small things like slippers, toothbrush and toothpaste, and food for breakfast were provided. Ben stayed in my room chatting: he told me the story of why he was placed at this school by the NEE Institute. He also wove into the free chat some information about Experimental School Affiliated, and a discussion about the next day's agenda. It was almost midnight when he left.

The next morning was largely spent in the chairman's office with all school leaders. Rather than using the reception room, the chairman, who I refer to as Steve, preferred to meet guests in his half private and half business-like office, implying his intention of a special welcome. After some introduction of each school leader present, the formal welcome began. All participants took Steve's proposal and joined him in offering me a warm welcome by applauding. Then, Steve briefly introduced the school history and current situation. Also he said that I should feel at home and demanded that everyone at school should assist and support my research. Followed was presentation of each participating leader concerning his/ her line of work and willingness to support me. Then I thanked all of them and interpreted the purpose, procedures, contents, and methods of my research, detailed the possible aspects I might have difficulties with and called for special assistance accordingly. Based on my presentation, they further defined their specific supportive roles in terms of how to respond individually and how to settle complicated problems collaboratively. It was a warm and productive meeting.

After the meeting, I had the first of the three interviews with Steve. I documented ESA's initial experience getting in contact with the New Education Experiment by citing Steve as below:

Founded in 2000 by a real estate corporation, Experimental School Affiliated was managed well till 2004. After that, there were some chaos and disturbance because of transition of principalship and change of national education policy. I was appointed Vice President of the corporation in 2004. In 2007, I held the concurrent position: Chairman of the school board because I was the only board member with school-related work experience--I used to work at a military medical university. However, the general corporation board was not in much support of the school development. Feeling increased pressure from peer competition and policy constraints, they even considered to sell it to the government. They changed back after all, deciding to continue the school management. Then I began to think how to improve education quality of the school. I reached out, seeking good school practices and learning from them. Early this year, I met Professor Zhu, the NEE initiator. After some research, I felt this model is stimulating and inspiring. In May, Experimental School Affiliated signed a contract with the NEE Institute to establish the strategic partnership. Then a number of school administrators and teachers were organized to visit the NEE landmark school: *Baoying Elementary School* in *Baoying, Jiangsu* Province, and then *Yinhe (Milk Way) Elementary School* in *Xiaoshan, Zhejiang* Province. Teachers responsible of implementing children curriculum pioneered to participate in other NEE activities. This is the first semester for the school to formally implement the New Education Experiment.

ESA's initial state in responses to NEE

NEE: the desirable thing to do or the mandatory thing to do?

Influenced by the sensational reports of the media and NEE members, I came here with a misconception that teachers at ESA would mostly enjoy the New Education program. However, since the very beginning, they were observed to form three distinctive groups with equal competing power: those who embrace the New Education Experiment; those following the suit; and those showing resistance, more silently than explicitly.

Some teachers, particularly those who had been to the 2010 NEE annual conference or visited other NEE schools, espoused NEE with immense enthusiasm. They took the initiative to

learn about it, getting engaged with members in larger NEE community, advocating it at school, and explaining it to colleagues and students' parents. Two factors, according to these teachers' opinions, motivated them to give a try of NEE. On the one hand, they realized a long time ago the negative impact the test system has on the activities and school decision-making on teaching and learning, but on the other hand, they felt powerless to do anything for a change. "When test scores become the only measure by which students' success is rated, they overshadow other more important gains, and affect relationships between people." More than one teacher expressed frustration about the test system. And they struggled between the war of keeping test scores high and enhancing students' comprehensive capability. Then, after getting to know NEE, they found it is an initiative to push people to strive for making a difference in the system, and more importantly, it shows respect for teachers' autonomy, trusting their potential, and valuing day-to-day action.

One fundamental reason behind teachers' own analysis could be the emergence of a new generation of young teachers in current Chinese schools, which is characterized with more individuality. That "we need to present rather than be represented" is a best depiction of the Chinese generation born in 1980s and thereafter. I once interviewed an American professor who taught English to professionals in China in early 1980s, the era when China just started the open door policy. He recalled,

The headache was students were afraid of speaking out their own opinions. When one question was asked, there would be a silence at first. Then cautiously, the monitor would stand up and say: "we Chinese students think that..." "No! No! No!" I would interrupt immediately, "I am only interested in personal ideas. Just tell me what YOU think about it. And Liu, what do you think? Li, what do you think?"

It is fair to say that the older Chinese generation felt safer to be represented than to present because for decades, they simply followed the directives from the top, leaving their own

opinions suppressed deep in their hearts. Nowadays, although this old mindset is still an influence, young people generally become more individualistic and enterprising. Instead of being passive followers, a number of them choose to question and fight against the irrational system. In our email correspondence, one ESA teacher, a quiet girl in her middle 20s who declined to disclose her personal details, expressed her confusion and disappointment about China's education:

Look at what we teachers do. What we do is not education, but counter-education. Look at the poor kids of today. What's left in their life if the TV sets are moved away, and internet games are turned off? Nothing but homework and remedial classes! All that fills their minds as well as the minds of the teachers and parents is prestigious senior high schools or universities. Is it possible that everybody goes to *Qinghua* or *Beida*? Isn't it ridiculous that such a rich education is reduced to just two words of "test scores"?

Anyway, teachers, with this change in perception and cognition, tried to identify NEE's strengths for improving education in their specific situation, and set a role model implementing it in their own classrooms.

"New Education is like a catfish, it has stirred up the lifeless pond full of stagnant water." Vice Principal Lee, who represented one of the firm believers in NEE, depicted the initial effect of NEE on ESA with such a simile.

Ying Laoshi was the teacher-leader of the sub-project *Children Curriculum*. Judging from her appearance, she was in her mid-30s, a few years older than other members implementing the same project. I got the feeling that like Lee, her tremendous energy comes from her own child as well as her students. She seemed to enjoy learning new things and taking the challenge for an educational reform. I found her excited about her NEE experience:

As a faculty member with fifteen years of teaching experience (She began teaching at a very young age), I only remembered the initial excitement and passion of being a teacher. The more experience, the less amount of enthusiasm. Living in an environment

competing for student performance and test scores all day long, I become bored with my work, my sense of happiness disappeared from nowhere. Then, NEE's *Children Curriculum* came to my life. Like a beam of light coming through the poem *Facing toward the Bright Direction*, it lit my eyes up, re-ignited my hope in education, and awaked the dream dormant in the heart of an educator.

In contrast, some teachers, in fact, the majority of the ESA teachers, just followed suit passively. They largely didn't understand much about New Education, nor did they see much sense in implementing it. Being asked about their feeling of New Education, many teachers replied that they had no feeling at the moment, "We don't know much about it, not to mention how we feel."

However, they did implement it because they said it was a decision made by the school authorities. They thought they had little or no choice but to go along with whatever the school decided. They were struggling, listening to their peers and emulating, without much feeling of their own.

This choice may be influenced partly by the Chinese culture in which people tend to blend in rather than stand out. Teachers in China may be easier to be manipulated compared to their American counterparts because they prefer to listen to superiors, discipline themselves, and appear the same as others around them, particularly when the "others" are established as role models by the school authorities.

Nevertheless, this group of teachers were gradually transformed into two sub-groups: 1) those who tried and reaped some desirable outcomes like heightened students' interest in reading or positive attitude toward class. They felt excited and willing to make sustained efforts in deepening implementation; and 2) those who tried but failed. The latter group got more frustrated and became desperately in need of support, emotionally and professionally. At such crucial moments, according to some reports, quite a number of them got rescued by repeatedly

reading the growing stories of other NEE teachers, and some by occasionally receiving positive responses from students' parents. Teachers were seeking little cues to motivate themselves. *Chen Laoshi* was such a teacher. She complained about parents' indifference and laziness in sharing the responsibility of educating their children. Her anger was later shifted on to the little children in her class. She was too sad to maintain a good appetite for food for a couple of days. But one mother's text message shocked her, and turned her around:

Being home for the weekend, my daughter said to me: "Mama, I am missing my teachers and classmates. I'd rather go to school than stay home." I guess my daughter has fallen in love with her school now. Thank you, *Chen Laoshi*.

To summarize, teachers who chose just to follow at the beginning could, later on, probably become active implementers of NEE although not everybody did. This transformation was made partly due to the trial-and-success experience of some of them, and partly due to the re-motivator offered to the "saved" ones after their trial and failure. The key to turn the passive group into self-motivated change agents is successful experience, timely support, and persistent inspiration.

Still, unlike the "pioneering" group and "following-suit" group, a number of teachers either ignored NEE or resisted it. This mainly derived from "lazybones resistance" as teachers were afraid that NEE would cause overloaded work or fundamental restructuring of their work, and "expert resistance" when they thought it was a forced reform against their professional judgment, and they became over-critical. These "experts" reported that New Education was just a new concept without much substantial content. They refused to use it in their work, and sometimes they protested and even threatened the school leaders by contending that they would not be accountable for the test score improvement if they were forced to implement the reform.

Wen Laoshi was a 9th grade English teacher who identified herself as an anti-reformer.

Although she did not confront the school authority openly, she actually expressed her resentment toward NEE to me:

New Education does not make any sense or have any substance. Maybe it does, but we can't feel it. In addition, I don't think my teaching method is too traditional. On the contrary, it is pretty new and flexible.

Qin Laoshi was another 9th grade teacher of Chinese. Due to his young age and good teaching performance in the past, ESA administrators hoped that he could take the lead in implementing NEE in the junior high department, but he declined with an excuse saying that he had to spend time taking care of his sick, aged mother.

All the data appeared to indicate that teachers at ESA diverged greatly on their willingness to accept the experiment from the very beginning: passionate, reluctant, or resistant. Judging from teaching experience, novice teachers who saw the current educational system problematic or had difficulty in adapting themselves to it generally showed greater interest in NEE. However, some veteran teachers, once chosen as forerunners importing NEE by the school authorities, demonstrated more enthusiasm and commitment to the reform project than those uninvolved at the initial stage.

Organizational culture: centralized or decentralized?

Evidence from observation and short surveys targeting teachers, students, and parents suggested that most of each category perceived the school as: 1) doing its job well in preparing students for their later life and study; 2) promoting learning; 3) keeping students safe and well-disciplined; and 4) being supportive and caring. Students also expressed that they enjoyed coming to school and talking about their school life at home after school. Overall, they basically

showed satisfaction about Experimental School Affiliated. However, teachers didn't seem to have much chance participating in decision-making. For instance, the big issue of participating in NEE was actually just an idea of Chairman Steve and Vice Principal Lee, even the principal was excluded due to her initial hesitation. It was probably true that the decision was beneficial to the whole school, as both of them convinced me, but the inappropriate decision-making process with little administrator and teacher involvement planted seeds for creating micro-political currents which hindered NEE implementation. Veteran teacher, *Xu laoshi*, who went through a lot of changes in his 10 years as a teacher of the school since its foundation, talked about a culture of change at ESA:

The first principal was very democratic and open to communicate. He visited teachers in the office almost every day after the morning exercise. However, current school leaders are not much approachable. As a matter of fact, there is little communication between top administrators and faculty members in the genuine sense.

My interview with the chairman indicated that he personally did not encourage open communication but valued the hierarchical order of the organizational structure. "The school hierarchical relationship can't be disarranged." He told me in an unquestionable way. He firmly believed that subordinates do what they are told. Hence, school decision-making was often top-down, without much sharing or open discussion. Even the introduction of NEE to the school was just a decision of very few, rather than the result of an open debate among many people involved. Nevertheless, communication between the immediate superior and subordinates in the elementary department was comparatively more frequent, and peer support and collaboration was also strongly advocated.

“It is good for you to be No. 1, but it is not as good as the whole team of yours to win together,” said Mrs. Wu, the leader of Chinese teachers in the 9th grade. And quite a number of middle-level administrators also expressed this view to their teachers.

“Teachers used to be honored and awarded individually, but now we value more their collective contribution. One being good is not really good, only all members of the team excelling is worth extolling.” The principal told me so, expressing her emphasis on teamwork and collaboration although this new school culture was far from normative.

Organizational and individual capacity

According to my informal surveys, the school was considered to be well organized and effective in directing teachers and students toward the organizational educational goal. However, the convention was challenged when the NEE model was imported. Scheduling conflicts, professional training, material resources like purchasing books and computers were just some of the many problems teachers encountered at the beginning. They felt overwhelmed and ill-prepared to implement New Education. “Where can we find time?” “How can we manage?” “What about the test scores?” Many teachers worried and sometimes complained so. Neither ESA nor the Research Institute of NEE provided formal training for the struggling teachers who were going to implement NEE. Teachers were left to do whatever they believed to be effective in implementing the new reform. Fortunately, they could learn from the practice of other experimental schools by logging in the NEE website.

Zong Laoshi was an experienced math teacher transferred from the elementary department. She was also one of the few junior high teachers who espoused NEE. Here is her confusion: “It was from *Lu Zhiwen*’s lecture that I got to know the concept of *New Education* for

the first time. The lecturer was passionate, but I apologize that I didn't have a clear idea of what New Education really was even after the lecture was over.”

One first grade teacher reported that when she had the first New Education related class, all she knew was the three Chinese characters: *xin jiao yu* (New Education). Many teachers used to be effective teachers but it was with enormous doubt and confusion when they began to try NEE implementation.

Test priority was another hindrance needed to do away with while building capacity. Teachers of higher grades, even if they had some interest in NEE, would abandon the idea due to the pressure from *zhongkao*, the senior high entrance exam. One teacher recounted that she was constantly questioned by parents when she failed to help their kids raise test scores while implementing NEE:

Can this work?

How can we see that it works?

Is my child really learning anything?

Where are the worksheets and homework that used to keep them busy?

...

Classroom instruction: still a teacher-centered virtuosity

Classroom was a focal point of my field observation because classroom instruction is the most fundamental business and educational life of the school. The first 20 class observations in the initial two weeks ended up with an observational report entitled *Change, starts from every classroom, and every individual teacher*. Below are some of the aspects I noted:

Overall, teachers were highly competent in their subject matters and familiar with what they taught.

Teachers at almost all grade levels across different subjects seemed to demonstrate their high levels of competency in their subject field. Overall, their lessons were well prepared and organized. The resources and use of multimedia aids contributed positively to accomplishing the teaching goals. Lecturing was the dominant teaching mode prevalent across different grade levels. Pressure from tests increased with the grade level. Teaching to the test marked classroom instruction more or less. However, the use of instructional strategies varied from teacher to teacher. Methods used to deal with students' discipline problems like talking and making noise looked alike on the surface, but the substantial effect differed. It was amazing to see that little kids in elementary 1st grade learned, within a couple of days' training, to behave strictly according to the school/class rules and norms.

In many classes students were taught to seek the only one right answer rather than to experience the explorative process or generate different solutions.

Overall, teachers appeared to encourage students to participate actively in class, or to work collaboratively, but this was more like lip service. Teachers were actually more interested in imparting the book knowledge than believing in students' ability to make new contributions to the content area being taught. Few of them really practiced the NEE's principle: unlimitedly believe in students' potential. Many classes were not intellectually stimulating enough. Teachers made little effort to make the subject investigative or explorative. Some class teachers charged through the content, crammed the knowledge in a rush into students' head, totally oblivious of the need to stop to check for student understanding and digestion. Factual questions in which

there was clearly only one right answer were asked disproportionately more often than high-level questions which require students elaboration on their solutions to problems and exploration of alternative solutions.

Teachers were highly responsible for their teaching but they, especially the head teachers, had other heavy workload in addition to their formal class instruction.

Teachers showed a high responsibility toward their teaching. Some were particularly anxious for their students who did not learn. “I have the impulse to rush to the classroom immediately as I identify, in the process of correcting their *moxie* (writing the text from their memory) exercises, errors that would have avoided,” one teacher said in a small-scale meeting. Observational data also showed teachers’ impatience in waiting for students’ self-growth, and their eagerness to offer help or even substituting the right answer in their mind for the students’ exploratory process. This was often explained as a time constraint, but the fact was the instructional methodology many teachers preferred could be described as a quest for the standardized answer.

Teachers, especially those head-teachers, felt far too busy to be aligned with school requirements in such activities as *meiyue yishi* (learning one conduct a month), regular discipline checking of morning, noon, and evening self-study periods, school and class culture construction and so on.

Many teachers lacked either adequate understanding or individual insights on education, and they were rarely able to use their own discretion to make curriculum or necessary curriculum judgments.

Looked from the macro level, teachers lacked either adequate understanding or individual insights on education. When asked about what curriculum and what educational objectives they aimed to achieve, no satisfactory reply could be provided except such unclearly defined terms as “a well-educated person”, or “help students to get access to an ideal high school”. Teachers who believed curriculum construction was the specialists’ or leaders’ business not relevant to themselves were not few. Teachers depended more on their intuition and personal experience than a clear conception of education to make judgments about what is good teaching, what materials are significant, and how to present subject content effectively. Teachers seemed to be in the school all day and all year around. It was reported that chances for professional development were slim, and time for reading, writing, and thinking is limited. Over time, many teachers accustomed to and satisfied by the school routine began to lose interest in learning and reflecting. Without keeping informed of the latest knowledge, teachers became narrow-minded and overly conservative, refusing to be open to new ideas and change.

As reform implementers, many teachers with little NEE training were unable to translate the NEE tenets into their classroom practices. They appeared ill-prepared or unable to meet the diverse needs and interests of different students.

Students were well trained and well behaved both in and out of class. It was amazingly good to see good order and discipline particularly shown in large-scale activities. There was a climate of respect and friendliness in the classroom and on campus. Comparatively, observers felt more welcomed in elementary classrooms while junior high classrooms were more indifferent or cold to my presence. The big problem was students’ lack of learning autonomy. As the grades advanced, students felt more compelled to learn or pushed by others rather than making a choice in their own interest. Students’ ability in self-governance was best reflected in

maintaining self-study classroom discipline while teachers were absent, but a better form would be to develop their capability in nurturing independent and meaningful learning. A non-negligible phenomenon was that some weak students were overlooked entirely as the teacher preferred to call on their favorites who were generally academically strong. Some students were offered many opportunities within one class while some others were never called upon. There was not sufficient evidence to show the existence of democratic, open, sharing, collaborative working relationships between teacher and students, and among students themselves. Some classes were characterized by a lack of intellectual rigor, and constructive criticism and the challenging of ideas were not greatly encouraged. Some teachers reported that students were deficient in generating ideas or participating in discussion even if they were encouraged to do so. The consequence of “anti-education” was observed in some student groups: they hated schooling and took it as an intolerable suffering rather than a blessing, according to classroom observation as well as some after-class student communication.

Perceived change in TVM and TVCE

Ying Laoshi, the teacher-leader implementing *Children Curriculum*, summarized four influences of New Education on her at the end of the semester: 1) reshaping her educational ideal; 2) transforming occupation into profession; 3) transforming colleagues into team members; 3) transforming leaders into intimates. Perceived impact of NEE and change in teachers can be identified and described in the following aspects:

Perception and attitude

The group of teachers who frequently felt a need to change the present educational practice and shared the core values and conceptions of New Education did not have much

difficulty in accepting the reform model. *Jun Laoshi* was representative of them. As a young teacher of a minor (like history, geography etc.) rather than a major subject (like Chinese, math, physics, English), she felt more helpless about the status quo of China's education due to the nationwide craze about test scores of major subjects.

We are not educating, on the contrary, the so-called education we are engaged in can provide our children with nothing but a "spiritual loss". All day long, they are busy in solving various academic puzzles that may never occur in their life. They have no ideal, no pursuit, and no belief. All they have in their mind is an elite senior high school, a prestigious university, or a decent job. They have no interest in learning, even hate learning. They learn in distress.

Jun Laoshi was the first of the five young teachers who voluntarily participated in my bi-weekly reform seminar during my stay at ESA. Similar to her, all of them wanted to see some hope for a change, or to make some change by trying something new, something they believed likely to have some effect on students.

In addition, teachers who were chosen as representatives to first get involved into NEE at the initial stage also felt positive toward the model and their efficacy in successful implementation. The passion and loyalty to NEE demonstrated by these teachers were salient. Oftentimes I had to be very cautious in talking with them about what I perceived as problematic because they were oversensitive to any criticism targeting New Education. Appreciation of other reform models in front of the NEE defenders was not welcome, either. "Those initiatives are designed to raise test scores rather than our children." They retorted contemptuously.

Many teachers, particularly those in the "follow suit" group, had doubts and preoccupations at the beginning. This appeared to resonate with Wheatley's (2002, 2005) theory on teacher efficacy doubts. Some teachers at the very beginning suffered loss of positive efficacy grounded in the traditional teaching practice. However, those who worried and feared that they

were unable to handle the new model became “more comfortable” with the program when they got really engaged in NEE and “excited” about the benefits when they saw the desirable outcomes. Even if NEE meant more work and effort, they loved it and took it as “growth” pain. The elementary department of ESA designed some demonstration classes and organized activities on the school-wide Reading Day, in which parents were invited for observation and participation. When parents were complimentary to the teachers and told them what an awesome job they did, the teacher morale was boosted, and teachers became firmer believers and practitioners of New Education.

Nevertheless, those high-ranked teachers who kept themselves disconnected had opposite views. They were frustrated with the feeling that they could have done better if New Education had not distracted their attention or wasted so much of their precious time and energy. Many teachers struggled to keep a balanced consideration of the so-called quality education advocated by NEE and exam-oriented education done during these years. Teachers at ESA Junior High felt particularly stressed because they were crystal clear that if the test score dropped the school would be devastatingly impacted, and more importantly, they would feel guilty for their students who would lose a chance to go to the more prestigious senior high schools.

Zong Laoshi, the math teacher mentioned previously, was also a middle level administrator responsible for implementation of an NEE sub-project *meiyue yishi* (Learning One Conduct a Month). She reported that she got the harshest criticism and toughest resistance from 9th grade teachers who minded nothing in the world but students’ test scores. Many of them took NEE as a menace, or an impediment to their efforts for students’ high performance.

Collaboration and collegiality

Another notable change was embodied in collaboration and collegiality. Chairman Steve was very supportive of the NEE implementation, although he did not know much about the details. He cleared away obstacles and solved many tough issues, some of which were even beyond the school's yearly budget. Vice Principal Lee encouraged and empowered others to make collaborative decisions about what they believed would work and celebrated small gains even when they did not yet achieve the big goal.

The *Children Curriculum* group seemed to be exemplary. They audited each other's classes and had informal meetings very often. In addition, Vice Principal Lee and Dean of Studies Grace met with classroom teachers almost every week. Lee believed it was essential for teachers to be on the same page in what they were teaching and to share ideas for improving each other's teaching. This provided exciting opportunities for teachers to work collaboratively. While teachers had previously taught in isolation, the NEE *Children's Curriculum* helped them create a culture where they could work together. This togetherness helped strengthen each individual, and as a whole, they believed they could achieve more, which indicated a positive association between their collective efficacy and collaborative efficacy.

In their reflective journals, several teachers recorded their enjoyable experience collaborating with colleagues. *Wen Laoshi* said that since New Education was implemented, she and the other two teachers of the same grade became inseparable comrades. *Shu Laoshi* portrayed how they worked together in the 1st grade office:

We exchange our reflection on classroom teaching, showing the illustrations for texts drawn by kids. To determine the next teaching topic, we search and study online together. Everybody speaks out her own idea without being afraid of getting adopted or not. When one dubs in background music for the poem we are going to teach, the others will recite it line by line accordingly.... Teachers of other subjects offer help, too. The fine arts teacher helps kids with illustrations, the music teacher directs kids how to read

poems aloud in the sweetest voice, and many more appreciate and compliment how unbelievably amazing a job the kids have done.

Shu Laoshi also talked about her prior embarrassment and nervousness in front of school leaders. Then she said:

Now I feel that leaders are so close to us. When we implement Children's Curriculum, we don't feel any distance existing between leading and being led. We say whatever we think with no preoccupation, for we share the same goal, and the same ideal.

Collaboration between teachers implementing New Education helped them feel more like a family. And this familial environment encouraged each other to stay on task and overcome setbacks. Lee said she was once very frustrated and badly hurt when some people denigrated her that she was using the great banner as a tiger-skin (*La daqi, zuo hupi*), meaning that she was decking herself out to impress people. "I was very disturbed and indignant," she said, "but with the team teachers' support, I walked out of the gloomy atmosphere very soon."

In spite of the positive gains recounted by many teachers, some felt extremely miserable in the externally imposed, superficially functioning collaborative context. And this animosity seemed to increase with grade levels: teachers in higher grades appeared to experience more pains in coping with New Education. Below was part of an informal interview with a teacher at ESA.

"Do you think the New Education Experiment has an influence in bringing teachers closer, more united, and more collaborative?"

"Very little, if there is any."

"What change has it made in this respect?"

"Many more double-faced teachers."

Teachers' view of comprehensive efficacy

Educational reform improves teacher efficacy. This conclusion sounds reasonable for those teachers who align themselves with reform initiatives. Interestingly enough, both teachers who were resistant and those who were willing to implement the reform program believed that their self-efficacy was improved. The difference only existed in other efficacy domains such as collective efficacy and reform alignment efficacy.

Many teachers felt they were empowered mainly through team teaching. Teachers implementing *Children's Curriculum* presented most of their exciting experience and least negative feedback. They summarized that team teaching empowered them in four aspects: 1) building knowledge by learning and discussion together; 2) developing capacity by observing and teaching others to teach; and 3) intensifying positive emotional experiences, and 4) eliminating negative ones. From the school's perspective, the integrated model of practicing, researching, summarizing, mutual training, and promoting was beneficial to fully exploiting resources, saving costs, and generating positive experiences.

Some teachers said that participation in NEE implementation pushed them to grow as a teacher. Since the New Education Experiment model was flexible and provided little professional training, teachers reported that they had big challenges and felt much pressure. The vice principal Lee told me that their frequently used strategy was turning to the books NEE developers recommended, "We read extensively: *100 Pieces of Advice to Teachers* by Sukhomlinsky, *the Myth of Room 56* by Rafe Esquith, *the Dream of New Education* by Zhu Yongxin.... We listen to educators' lectures, we observe classes at NEE star schools, we study online together, we practice what we learn, and we research what we practice." Teachers admitted that they worked harder but they felt that everything was compensated for when they saw more smiles of engaged students in class.

“*Pin Laoshi*, my daughter said she likes Monday best.” One parent said to *Pin Laoshi* in a chat.

Did you ask why she said so?”

Yes. ‘Because we have *Morning Reciting*.’ ---That’s what she said. Can you tell me something more about *Morning Reciting*?

Pin Laoshi took that as her proudest moment because her efforts were reflected in her students’ love of the course. Teachers like her said that because of the happiness they saw in their students’ faces, they wouldn’t do anything else but ensure implementation success of New Education.

There were always teachers who did not buy into the reform. Surprisingly, even those teachers who were not on the same page acknowledged that NEE had an impact on raising their awareness for professional development. *Yin Laoshi*, who had some resistance to NEE, frankly admitted, “To be honest, those actions like ‘reading a book together,’ and an emphasis on writing and reflection, are helpful in building teacher knowledge and improving capacity. I am inclined to read, write and think a little more whenever I find time. But time IS a big issue.”

Some resistant teachers actually had high self-efficacy beliefs. This observation supported Wheatley’s (2000, p. 19) argument that a positive sense of efficacy rooted in past teaching success “may carry with it a strong incentive for resisting reform adoption”. In other words, if a teacher believes he is efficacious in helping students reach the educational goals, why bother to change?

Wei Laoshi, an experienced English teacher, was one belonging to this cohort. I found her eager to show how knowledgeable she was not only about where her students were but also about the school history and national educational mandates. She once asked about my feedback after I observed her class. However, instead of listening, she became the major speaker

dominating our conversation, in which she was undoubtedly self-confident in her teaching so that it impressed me that how others felt about her class was actually unimportant to her. These teachers remained focused on their children, and their own way of teaching, regardless of the changing environment or school policy. Their efficacy beliefs could neither be lowered nor raised much by NEE implementation.

Many teachers were reluctant to implement the reform not because they had low efficacy beliefs but because they believed that it was inappropriate to discard what they already mastered and considered as good practice. “It was uneasy to make the test score of our subject No. 1 in the rankings last year. Isn’t it ridiculous to implement a reform at this moment?” One teacher questioned out of confusion although, as head of Chinese language teachers in the junior high department, she accepted the reform initiative, and worked on it earnestly. She was pushed rather than chose NEE at will because leaders in China, at whatever level, are expected to serve as role models to carry on new policies. Efficacious teachers who had doubts about the school reform but supported it nonetheless were not few.

There were teachers at ESA, particularly those senior ones, who tended to believe in the NEE model, but perceived their self-efficacy low, and hardly raised in the process of NEE implementation. This did not, however, represent the mainstream of ESA faculty although it would be representative in many backward, rural schools. The possible reasons are two-folded. First, teachers at ESA, like those in other private schools in China’s metropolitan cities, are rather competitive, and have more access to professional training as a result of centralized educational resources accumulated there. Second, the school, the classrooms, and the individual teachers as well, are usually better equipped. As for ESA, internet was accessible in every classroom, and the school also distributed one laptop to every classroom teacher.

In summary, teacher at ESA generally had high self-efficacy beliefs and low efficacy doubts; their reform alignment efficacy varied, depending on their different initial responses to the NEE model, while their collective and collaborative efficacy beliefs were about average due to the centralized school management style. Comparatively, ESA teachers at the elementary department had higher collective and collaborative efficacy beliefs than their colleagues in the junior high.

Representativeness of Experimental School Affiliated

As a New Education experimental school, ESA is perceived as atypical in many ways. Above all, ESA is a nine-year, “all-inclusive” (from Grade 1 to Grade 9), private, urban elite school located in one of the biggest cities in China, whereas other experimental schools are largely elementary level, public, and even if they are urban, they are basically situated in small or medium-sized cities. And most of them are non-elite. Secondly, ESA was at the initial stage of NEE implementation, therefore, some problems observed would disappear naturally as the reform continued to go forward along the time. However, ESA is also typical if seen from another perspective. First, of all NEE schools, those with ESA characteristics cannot be few; second, every school experienced the initial stage, hence, perceived problems at ESA may be mostly, if not universally, shared among NEE schools. Regardless of the argument, we do need to consider some other school cases to examine how similar problems may be solved or disappear naturally. It is also noteworthy that no two schools implement the reform exactly the same way, and the non-specific, philosophically oriented model of NEE complicated the situation and made the school-based implementation even more inconsistent.

Other NEE schools' experiences

Starting from one private junior high school in East China in 2002, NEE has now attracted 862 schools, over 60,000 teachers and 1,000,000 students across China. Looking at its distribution, the predominant majority of participating teachers and students were at elementary, public schools in the urban and rural areas of East China although its expansion to the midland and west was very fast. As a philosophically oriented reform initiative without sufficient prescriptive specifics, practices between schools or school districts varied greatly. Nevertheless, all the nine schools I visited from mid-December 2009 to early January 2010 reported similar “good practices” and problems hindering NEE implementation.

Influential power of the exemplary teachers and practices

My experience in site visits suggested that a noticeable number of schools underwent similar initial implementation stage with teachers who had preference for NEE, and those who complained about or attacked on NEE as an external imposition. However, things seemed to get easier after that stage when everyone started to see the progress. “People don’t really buy into something until you try it and they later find that it does work,” One educational official once told me when we discussed the problem in their school district.

Nurtured in a specific NEE environment, some teachers changed themselves without really noticing. In *Qiaoxi* district, *Hebei* Province, one principal told me an interesting story about the transformation of a faculty named *Wen Laoshi*:

Wen was in her fifties when our school began to implement NEE. Like all those senior Chinese teachers, she didn’t know much about Internet, not to mention like it. However, every morning when she entered the teachers’ office, she heard conversations like who posted a new thread last night, and who followed their posts, little of which was understandable. Moreover, her peer teachers were particularly fond of logging on the website of New Education, discussing the news and stories inside. She felt stimulated, and started to learn from the young colleagues about Internet surfing. She then became engrossed in the new hemisphere. Now she often had online chats with her students,

posting her teaching reflections and class photos. She felt the sense of belongingness returned because she could not only understand but also actively participate in the conversations among her colleagues.

Case-related data obtained from other NEE schools also supported the statement that exemplary teachers were influential in transforming teachers who worked in the same school but were distant from initial NEE implementation. The more closely, either spatially or emotionally, teachers identified with their role models, the more influences on their adaptation to the new school ecology, as well as adjustment of their attitudes, goals and beliefs.

Implementation of the “Example + Bottom line” principle

Example + Bottom line was a strategy practiced first by *Jiangxian* district when their schools encountered the same problem. The bottom line was the basic requirement that every NEE teacher or school in the same district needed to reach. They would be out of “business” if they couldn’t reach this line. Nevertheless, there was no one-size-fits-all line across NEE schools. It was rather flexible, and varied from district to district, school to school, or even teacher to teacher. Moreover, setting an appropriate bottom line on the basis of analyzing teachers’ status quo was challenging and demanding. Too high or too low a line would both demotivate teachers’ engagement. In a post-conference tour, I randomly asked two teachers from one school in Zhejiang Province,

I heard that the *example + bottom line* practice is very effective across many schools. How is it working in your school?

In our opinion, it is just so-so. Am I right, *Liu Laoshi*?

Absolutely.

Why is that?

Because the bottom line is so low that everybody can reach it. It is as easy as blowing the dust off the table.

Although the bottom line was taken as not be needed in a small number of schools, general emphasis was laid by NEE developers on creation of examples: exemplary teachers, schools, and school districts. Efforts focused on identifying them, building them, presenting them, and honoring them because the examples' height represented the height of New Education. In addition, since examples were NEE participating teachers or schools by themselves, they were more touching and touchable. "Blooming of one specific flower speaks louder than one thousand theories." *Tiepiguo* from the NEE Research Institute preferred this metaphor, meaning that one particular successful story is more eloquent than tons of theoretical arguments. Every year, NEE endeavors to offer as many opportunities as possible for model teachers to tell their stories, to share their experiences with other NEE teachers across the country. *Lu Zhiwen*, director of the NEE Research Institute, once stressed in his blog the significance of setting up examples, "What NEE can contribute to history is not concepts or slogans, but examples and stories. Make examples talk, let stories write, empower teachers to be the leading role of their life narrative, and enable NEE members to be real heroes of their school."

From initial imposition, to mid-term capriciousness, to final self-motivated implementation

In my site visits as well as the annual NEE conferences, a number of teachers from different districts recounted their personal experience involving NEE. Some felt compelled at the beginning but successfully completed the process from imposition to habituation, and then to autonomous pursuit of excellence. Some, on the contrary, got very passionate at first, however, as time went by, they felt that NEE implementation was too demanding and time consuming. "Then I started to waver." One teacher told me candidly, "I was hesitant whether to go on with it or not because, you know, I really couldn't afford so much time. In addition, in spite of my hard effort, I gained little sense of accomplishment."

Some school principals also mentioned the phenomenon of “mid-term capriciousness,” in which teachers went back to the prior state after their initial excitement was gone. After all, long-term implementation fidelity called for perseverance. The NEE star teacher Chang Ruixia kept communicating with parents by weekly correspondence, and she did not receive any parent’s response till the seventh letter was delivered. Then one by one, parents were touched, and followed her instructions to read together with their kids. Another standard-bearer teacher Chang Lihua wrote letters and notes aggregating more than 200, 000 words in five years, dialoguing with parents sometimes weekly, and sometimes daily. “Only action leads to gain, and only perseverance brings out miracle.” That was what NEE advocated, and constantly reminded of their members.

Seemingly more noticeable success in elementary schools than schools at higher levels

As I further investigated, I noticed a commonly shared view that the New Education Experiment was considered to be more successful at elementary schools---the higher the level of school, the less noticeable the success. Nevertheless, it could not be denied that there were high-performing junior high or even senior high schools. *Yufeng* Experimental School and People’s Senior High School were names in the list. Unfortunately, I did not have much opportunity to visit NEE secondary schools rather than Experimental School Affiliated. Data obtained to support the argument of better NEE effects on elementary schools were from: 1) the focus group interview and personal interviews in 2010 NEE Annual Conference; 2) the eleven-week fieldwork at ESA; 3) informal comments on NEE from websites; and 4) the pyramid structure of NEE participating schools descending from elementary, to junior high, and then to senior high levels.

Principals and teachers who attended focus groups also reported that the New Education Experiment had caused positive changes in teachers as well as students. However, overall, no marked difference had been generated in improving students' outcomes measured by tests. "Students appear to be more able, and feel more relaxed to write a coherent composition within a pre-set time limit compared to those who used to write mainly dependent on sample writing memorization," said one principal from Inner Mongolia. Other desired outcomes regarding students' changes were:

- Students' spiritual state was enhanced because they were supported to take more ownership of their own learning;
- Reading and writing became not only a required but also enjoyable thing for most of them;
- Some weak and bored students became more interested in schooling.

Regardless of the qualitative evidence in favor of elementary schools, what is perplexing is that the quantitative data led to a different conclusion that junior high schools were positively related to teachers' view of the NEE model (TVM), and that of comprehensive efficacy (TVCE). In theory, more reform effectiveness at elementary schools is supposed to associate with more positive TVM and TVCE, which was apparently inconsistent with the quantitative results. Since quantitative data were obtained from a large sample and roughly by stratified sampling, they are supposed to be more convincing. Some possible doubts about the results got by using qualitative methods were justified for the following reasons. First, the case of ESA could be atypical because it was a comprehensive school, and its elementary department got involved in NEE earlier. Second, the data from focus group and personal interviews at the 2010 conference would

also be misleading due to the high quota of participants assigned to high-performing schools or districts, which selected accordingly only those exemplary teachers to attend the conference. Finally, given that over 80% of NEE schools were from elementary level, it is easy to suggest that elementary schools were higher performers in the New Education Experiment. Another explanation is that the effect of NEE on schools depends more on student cohorts rather than teachers. In other words, regardless of teachers' efficacy beliefs, NEE implementation at elementary level is expected to be more successful as long as the student cohort is within the age group between seven and twelve. This hypothesis, however, needs to be supported with further studies.

The next section will discuss the perceived problems that are regarded to be detrimental to the New Education reform among schools visited.

Digging deeper: factors hindering NEE implementation

Integration of NEE curriculum into national curriculum

The biggest challenge most school teachers and administrators reported was how to integrate NEE curriculum into the mandatory national curriculum. This corresponds with the survey data: about 73% of the 2173 survey participants agreed or strongly agreed to this view.

Many teachers confided to me that they felt exhausted struggling to keep both curricula. Below is a strong voice among teachers interviewed:

What's worse, all important exams only test students' mastery of contents in the national curriculum. There is no criterion to assess NEE curriculum, and as a result, we cannot chart our progress in the reform, nor can we evaluate the overall results. While we were asked the question about the implementation effects, the positive answer we offered was often challenged because we could not give them more solid evidence but say "we just feel like that."

Up to now, NEE curriculum played a complementary role at the most in experimental schools. In order for NEE to sustain and develop, implementers generally believed that the conflicting nature of NEE against national curriculum and traditional evaluative mechanism is a primary concern to be considered. Therefore, NEE designers need to consider developing a systematic set of curriculum that can integrate, if not replace, national curriculum. In addition, corresponding assessment criteria and teacher training programs need to match the requirements of the new curriculum and the integrative goal of NEE and national curriculum.

Negligence of the Example + Bottom line principle

On January 12, 2011, an administrator at ESA had an online talk with me about her personal experience in implementing NEE. She used to be an outstanding teacher but she was promoted this year to administrator in charge of campus culture construction, which was part of NEE implementation. She said that she got excited when she learned about New Education for the first time, but she felt overwhelmed with her work this term. Besides the new administrative work, her teaching load was not lessened at all. She impressed me as a highly responsible, intelligent, and efficient person. However, she felt great pains, not because she couldn't endure the hard work, but because she didn't win understanding or respect from many of the teachers who were resistant to NEE even though she devoted herself fully to it.

Now the *Example + Bottom line* principle seems to offer us some insights in understanding her frustrating case. She must have been too impatient, and too stressed by the NEE implementation that she kept pushing, and even harder when teachers were not responsive. Teachers believed that everybody was working hard to produce positive results for their students. When she pushed, teachers' intensive efforts in their own work were interrupted, therefore, they

became resentful, particularly when they perceived it as not conducive to students' learning. It would be somewhat improved if most teachers were only required to reach the bottom line while those few who showed more initial enthusiasm needed to be identified, supported and made exemplary. However, implementation of this principle requires science as well as art, otherwise, how can we know where the line is and how to make it adequately high but not too high to intimidate or frustrate participating teachers? My discussion on the topic with some teachers at the conference suggested that for some schools, the bottom line was too low to challenge any teacher, while for some others, it was too demanding to reach even with tremendous efforts.

Top-down decision making

Although NEE claimed to be a bottom-up grassroots reform model, implementation was largely influenced by a traditional Chinese culture, characterized with unilateral, top-down decision making. While there is a time and a place for top-down decision making, a more collaborative data-based decision making in relation to educational reform must be more appropriate, and better espoused by teachers at school.

Evidence showed that the decision whether to implement New Education was predominantly unilaterally decided by local educational officials or school principals. Most teachers were actually not involved at the beginning. Instead of asking "What can we do to improve the students' achievement and education quality?" teachers were simply told "Listen, this is what we are supposed to do."

Take for example, the NEE action of building an ideal classroom. Administrators at ESA personally conceptualized the framework, or borrowed one from another NEE school, then imposed it on every teacher. This would anger teachers because they felt they had lost control of

their classrooms. While lack of motivation and experience in reforming classroom instruction caused difficulties and serious problems, administrators remained unresponsive because they thought teachers didn't try hard enough. Hence, the foundation of mutual trust was undermined, and a lot of time was wasted in working around the conflicts.

By contrast, teachers implementing *Children Curriculum* were involved in it since the first day they considered it. The vice principal Lee sat down with the classroom teachers to work out a schedule for the upcoming semester. They met once or twice a week to discuss implementing problems and strategies to handle them. Administrators were fully engaged themselves in it, constantly supporting and encouraging participating teachers, and trusting teachers to be professionals who were able to do their jobs to the best of their potentials.

Non-specificity of the NEE model

Unlike the usually scientific, data-based reform models in America, the NEE model is ideal oriented. It highlights such values as happiness of educational life, enjoyment of reading, improvement of spiritual state, and principle of action first. As for very specific guidelines and instructions, there are not many. They are more interested in portraying a beautiful picture of what an ideal education should be, rather than what and how teachers should do for effective implementation. NEE is often described as a pot of *stone soup*,¹ which suggests that it doesn't offer mature, doable models at the very beginning. Every participant is expected to contribute by giving something to make the soup tasty and tempting. This might create significant problems for getting the program running at school, particularly for those who didn't receive training and had no experience dealing with educational reform as complex and ambiguous as NEE. Some

teachers continued to resent having had the program forced on them without articulating what to do and how to do it.

Nevertheless, some implementers took it just as the most appealing aspect of NEE because it opens itself for teachers' creativity. One teacher in a focus group aired this opinion of his: "It is exciting to be engaged in a reform nobody knows exactly how to conduct. Nobody can teach you much. You are free to create it in whatever way you feel right by thinking and discussing online with teachers doing the same model across the country." Quite a few seconded him. This suggested that some teachers valued the chance to design their own instruction and curriculum, rather than being forced into prescribed structures that may not be applicable in specific contexts.

Even under such circumstances, NEE needs to consider the task difficulty which participating teachers can handle and offer guided instruction wherever needed. After all, a considerable number of teachers passionately involved in the experiment were from rural or second-tier urban schools whose credentials and education background were relatively weak. For instance, in *Jiangxian*, one rural school district I visited, 5 of the 12 teachers at one elementary school were substitute teachers (*daike laoshi*) who were undereducated themselves. They were paid 500 RMB monthly, only one third to one fourth of the salary of the formal teachers working at the same school. Teachers would feel overwhelmingly upset when they embarked on the experiment but found few guided resources, and they were left on their own to deal with such a challenging task as *ideal classroom construction*, which demands high intellectual quality and academic foundation.

Dominant role of the exam-centered discourse

Nobody in China dares to disregard the importance of exams in his life. For students, two critical exams are decisive: senior high entrance exam (*zhongkao*) and college entrance exam (*gaokao*). The former is held in the last year in junior high, and the later the final year of senior high. Both are given in each summer throughout China. Those who pass are assured of acceptance to a senior high (*zhongkao*) or university (*gaokao*). Those who score higher have more chance to prestigious schools or universities.

The two exams are not only significant for students, but also for schools and teachers because their reputation and awards are largely judged according to the percentage of students from the school who pass the exams. The central role of exams nurtures an environment conducive to learning and teaching to some extent. However, it also produces negative effect by narrowing teaching and learning to serve the only purpose of passing the exam. Students are taught to practically devour the written words of textbooks and spew everything out during exams. Memorization and mechanical repetition are overemphasized, while creativity, critical thinking, and the ability to present justifiable arguments in intellectual discourse are comparatively weakened. Educators have realized the harm of the current education practice, however, nobody is sure whether abolishing the two exams can create a more desirable learning environment and well-rounded students. There are teachers who do take the initiative to open the eyes of their students to the world instead of having them glued to the textbooks. NEE is one of the models inspiring teachers to strive for quality education rather than exam-oriented education, but the dominant position of exam rhetoric is not easy to shift in the Chinese context. Facing the dilemma of test score and rounded development of students, teachers feel pressure doubled---they were left feeling that they stood in the middle of an impossible task. And most

probably they would choose to work only on improving students' scores if they were not able to give a balanced consideration to both.

In *China New Education Storm*² (Wang, 2004), one teacher reformer was depicted to be very competent in conducting quality-education lessons in the training site. However, she went back to her old instructional method when she returned her Senior Grade 3 classroom. Her backpack was filled with piles of representative test papers selectively collected from various exams. Below is part of the interview between the author Wang and the teacher, which highlighted the powerful influence of *gaokao*:

Doesn't it work without them (test papers)?

No, no 'paper sea' (*tihai*), no way. I am now competing for physical strength. I am young, so I invest my free time at noon. Class ends at 12, and lunchtime is 12 to 12:30. Between 12:35 to 13:15, I have free remedial lessons for academically weak students.

Every day like this?

Yes, every day including Saturday and Sunday.

To "grab" students?

Exactly! Weak students are poor in all subjects, so all teachers are competing for them. I didn't grab him this noon, but I MUST catch him tomorrow noon. I watch him out from morning to evening. People who are not physically strong enough can't be 3rd grade teachers in senior high. 3rd grade senior high is absolutely the frontline.

And every teacher is voluntary?

Yes, everyone is voluntary. Quite touching, as a matter of fact.

Does it work?

Yes, it does. Compete for physical strength, and compete for energy. There is a saying: *liang jing yi qin* (two "intensive" one "diligent").

What's that?

Intensive lecture, intensive practice, and diligent tutoring...

...

The interview appeared to lead to a depressing conclusion that if *gaokao* and *zhongkao* were not abolished, any kind of educational reform would be doomed to fail. To interpret it by borrowing a Chinese idiom, it is *qingfu busi, lunan weiyi*: the State of Lu would always be in trouble unless *Qingfu* was done away with. However, the frequently asked question pops up again: Can abolishing the two exams create a more desirable learning environment and well-rounded students?

Problems in professional identity transformation

Diana used to be an outstanding principal in some elite public schools. Her reputation earned her the current principalship at ESA. She was confident that she could run the new school well, and she did. However, she seemed to have difficulty understanding the school board's new policy of implementing NEE. Her hesitation in enacting it invoked the chairman's dissatisfaction. Thus Steve shifted much of her responsibility to the two vice principals. She was upset by his disfavor, so she earnestly learned the NEE program and relevant theories. However, no matter how hard she worked, she was unable to completely integrate her past experience into this model. "I've always had a teacher complex. I've loved teaching ever since I was a kid. However, it seems that, after I've worked at school for all my life, I become a person who doesn't know how to teach, let alone how to lead a school."

Diana's frustration represents the conflict and challenge brought about by educational reform to teacher professional identity. Unlike other professions, teacher professional identity begins in childhood (Collay, 1998). However, it is fully developed and enacted within the organizational hierarchy of the school (Collay, 2006). "This lifetime of exposure to teachers'

work means that teachers arrive at their first positions with strongly held assumptions about who teachers are and what they do.” (Collay, 2006, p.132).

Teachers who were taught with traditional methods tend to reproduce the methods used by their own teachers because, according to Postman and Weingartner (1969), they are “the ones who were most ‘successful’ in conventional school terms. That is, they are the ones who learned best what they were required to do: to sit quietly, to accept without question whatever nonsense was inflicted on them, to ventriloquize on demand with a high degree of fidelity, to go down only on the down staircase, to speak only on signal from the teacher, and so on” (p. 143).

Teachers’ motivation and effectiveness in implementing educational reform can be powerfully influenced by their preformed teacher identity. A teacher with limited exposure to reform-aligned practices may have problems in connecting content knowledge to innovative methodologies. Similarly, a teacher with much of his own educational experience approaching content knowledge from a teacher-centered perspective may lack the requisites for integrating innovative methodologies into his classroom, or at least he may take more time and effort to integrate the new experience into his existing schemata. As a result, teachers may appear to be resistant, reluctant, or take a passive role in implementing the new model.

Summary of the results

To summarize, the case of ESA showed that teachers approached the New Education Experiment with different attitudes, some embracing it, some passively accepting it, and some resisting it. However, as the experiment was carried on, many teachers, particularly those NEE teacher leaders, and those tried and harvested sweet results, changed their view of the NEE

model from negative to positive although quite a number of them resisted NEE more radically as a result of an external imposition, and frustration after trial.

Teachers appeared to view the model less effective as the school level got higher. Overall, teachers at elementary level had more positive views than their junior high school counterparts, and this appeared to be supported by data from the focus interview and personal interviews collected at the 2010 conference. However, it was not consistent with the quantitative results, and for the reasons analyzed previously, it was challenged while the quantitative results that junior high teachers had more positive view of the model and higher comprehensive efficacy beliefs were considered to be more genuine due to its large sample and roughly stratified sampling methods.

Teachers at ESA generally had high self-efficacy beliefs, and low efficacy doubts. Their reform alignment efficacy varied depending on their attitudes towards the NEE model, while the collective efficacy and collaborative efficacy were moderate, with devoted teachers having higher, and resistant teachers having lower efficacy beliefs of both types, which suggested the impact of NEE on enhancing these two efficacy beliefs.

Other NEE schools had similar practices like using the role model of exemplary teachers, implementation of “Example + Bottom line” principle, and strategies to help teachers become self-motivators of NEE. In terms of problems, externally speaking, the exam-oriented culture, and centralized power structure for management and decision making created constraints hindering NEE development, while internally speaking, NEE required self-perfection. For instance, how to integrate the reform curriculum into the state curriculum, how to chart NEE progress, how to scientifically set and implement the “example + bottom line” principle, how to

keep a balance between model specificity and teacher autonomy, and how to help teachers build up a new professional identity, all these were the questions the New Education Experiment was supposed to address and solve by itself.

Chapter 6 Discussion

The New Education Experiment is a Chinese educational reform which, with teacher development as its starting point, aims at helping teachers and students live a happy and integrative educational life via six actions (Zhu, 2009, p. 3). In this study, the quantitative analysis mainly investigated 1) the influence of individual teacher background and NEE participation on teachers' view of the NEE model, and on their view of comprehensive efficacy; and 2) the direct and indirect effects of teacher background and NEE participation through the mediation of teachers' view of the NEE model on teachers' view of comprehensive efficacy. In contrast, the qualitative analysis further excavated in specific school contexts how the participating teachers viewed the NEE model as well as themselves; and how the three factors of individual teacher background, NEE participation, and teachers' view of the model yielded changes in comprehensive teacher efficacy.

This chapter is a discussion of the major findings of the study. It includes six sections. The first section focuses on the findings and subsequent discussion of the quantitative results of the study. Section 2 centers on the discussion of what was discovered in the qualitative part of the study. Section 3 summarizes the conclusions and implications of the study. Section 4 is an extended discussion by setting the New Education Experiment in the broader historical, cultural, and social context of China. This is followed by limitations of the study, and suggestions for future research.

Major findings from the quantitative data

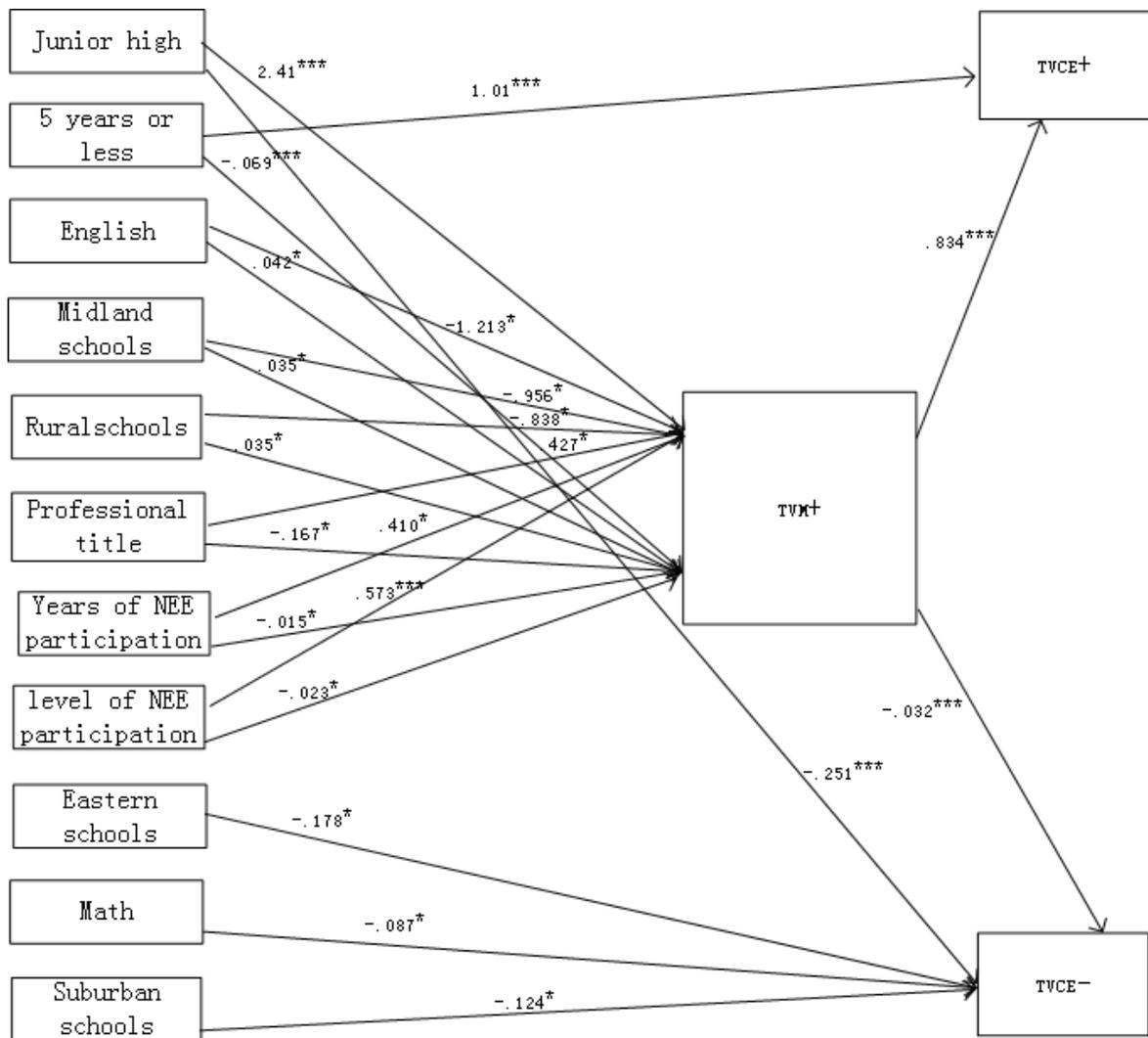
Quantitative data from 2,173 teachers at different school levels across 12 out of 28 school districts in China indicated that, when TVM was not considered, factors that affected positive TVCE were not purely demographic nor geographically contextual, but merely those regarding the teachers' immediate teaching background. In other words, none of the demographic variables like gender, age, professional title, and academic degree, or geographically contextual variables like urban-rural distinction and east-west location, was related to positive TVCE. What mattered were just teachers' immediate background variables like school level, teaching experience, teaching subject, years as well as level of NEE participation. And these factors were also related to negative TVCE except years of NEE participation. Another difference between the predictors of positive TVCE and negative TVCE was the school's geographic contexts, like urban-rural distinction and east-west location, were also associated with negative TVCE. Teachers in suburban, eastern schools were unlikely to have negative TVCE. Nevertheless, these results were misleading because some latent factors that affected TVCE indirectly were not revealed. They were modified when the mediating effect of positive TVM was considered: 1) school's geographic contexts, which had been unrelated to positive TVCE, became related not only to negative TVCE but also to positive TVCE; 2) the non-significant variable of *professional title* became a significant predictor of both positive and negative TVCE; 3) the variable of *years of NEE participation*, which had been non-significant to negative TVCE, became negatively associated with it; 4) *ten years or more teaching experience*, which had been related to higher level of negative TVCE, became unrelated.

The modified results suggested that teachers' positive view of the NEE model was pivotal in predicting teachers' view of comprehensive efficacy. Negligence of its mediating effect could cause severe biases or misleading results. However, regardless of TVM, individual

teacher attributes, like gender, age, and even academic degree, did not affect TVCE. What really mattered were teaching experience, teaching context, geographical circumstances, and the state quo of NEE participation. This is consistent with Woolfolk's explanation that "efficacy judgments are specific to the teacher individual situation (subject taught, teaching and managerial skills, knowledge, students, class size, etc.)" (Shaughnessy, 2004, p. 156). Given NEE's emphasis on teacher development and empowerment, and the large urban-rural or east-west disparity in China's school conditions, it is no wonder that variables regarding NEE participation and school geographic location also became significant predictors of TVCE.

Figure 6.1 reveals the relationships between the predictors, the mediator, and the dependent variables (positive TVCE and negative TVCE), as well as different levels of association among these variables.

Figure 6.1 Relationships between Predictors, MV (TVM⁺), and DVs (TVCE⁺, & TVCE⁻)



*Statistically significant at .05 level; ***statistically significant at .001 level.

Self-efficacy, collective efficacy, and other components of TVCE construct

The highest mean score in the five subscales of comprehensive teacher efficacy scale was reform alignment efficacy (M=3.90), followed by collective efficacy (M=3.73) and self-efficacy (M=3.72). In contrast, the lowest was teacher efficacy doubts (M=2.48), and then came collaborative efficacy (M=3.54).

The result that teacher efficacy doubts, or negative TVCE was relatively low seemed to be inconsistent with Wheatley's (2002) argument that teacher efficacy doubts benefit educational reforms by fostering teacher learning in many ways like "inducing disequilibrium and change, fostering teacher reflection, supporting motivation to learn and responsiveness to diversity, and promoting productive collaboration" (p. 16). At Experimental School Affiliated, we did observe a *temporary* low teacher efficacy beliefs or high efficacy doubts specific to reform tasks at the initial implementation stage, however, in the long-term perspective, teachers high in efficacy beliefs prior to the reform generally tended to be more active in reform implementation, and they regained and oftentimes increased their sense of efficacy very soon even if it was damaged temporarily initially.

The mean scores of self-efficacy and collective efficacy fell within the typical range of their corresponding categories when compared to the normative data in American studies (see Shambaugh, 2008, pp102-103). No evidence obtained in the study revealed that Chinese teachers in the collectivistic society possessed higher level of collective efficacy than their American counterparts. However, this does not suggest comparative study of this regard is not worthwhile. The fact that the concepts of self-efficacy and collective efficacy formulated in this study were different in meaning, and that the items tested also differed greatly would make it non-comparable to relevant American studies.

The reform commitment was very high but the collaborative efficacy was moderate. This seems to suggest that teachers tended to align themselves with the reform goals which they perceived to be right, however, they were not very open to listen to, communicate or collaborate with others. The low score of Item 26 revealed that Chinese teachers nowadays, different from their submissive traditional counterparts, would not follow the authority's commands at the cost

of suppressing their own differing voices. A comparison of the scores between Item 26 and Item 42 suggested that collaboration between NEE community members was higher compared to vertical collaboration with the school authority although it was still not salient enough, probably due to teachers' preference for independent work.

According to Hofstede's culture model (1997), teachers in China are in a high power distance culture that is more tolerant of inequality. Therefore, they would be more likely to accept authority, and be more aligned with the common goal while suppressing their differing personal preferences. The reason that we had findings different from this must be that teachers and schools choosing the grassroots reform model of NEE were comparatively more democratically oriented. They were largely more opposed to Chinese traditional values.

Hofstede (1997) pointed out that people in collective societies are likely to belong to in-groups to which they owe considerable loyalty, and people in an uncertainty avoidance type of culture prefer the security of structured, clear and predictable situations. The cross-China peer collaboration in the NEE community was moderate because on the one side they were the in-group in which each felt close to another, thus facilitated personal interaction. On the other hand, they were strangers after all, consequently it led to uncertainty and insecurity which hindered, to a certain extent, carefree communication and collaboration.

Correlation between individual teacher background, NEE participation, TVM, and TVCE

Quantitative data of this study suggested that there was no significant relationship between teachers' view of comprehensive efficacy and such teacher characteristics and context as gender, age, educational degree, colleague evaluation, and school's public-private difference. However, teachers' teaching experience, teaching subject (Chinese versus English or math), and

school level, school geographic location, and rural-urban distinction were significantly associated with teachers' view of comprehensive efficacy. More specifically, junior high teachers with five years or less teaching experience had more amount of positive TVCE, while English teachers had less amount of positive TVCE. Teachers in different school environments did not differ in positive TVCE, but they differed in negative TVCE. Like teachers at junior high schools, teachers in eastern and suburban schools tended to have fewer efficacy doubts, while teachers teaching math, and having ten years or more experience had more efficacy doubts. Since educational inequality exists between schools in east, midland and west, and schools in urban, suburban and rural areas, teachers in eastern and suburban schools where financial and educational resources are richer and more accessible may consider themselves more capable and more likely to achieve the NEE goal. The reason that less experienced teachers had high positive TVCE while experienced teachers had high negative TVCE is that the former are generally more open to change, while the latter are more conservative, and resistant to reform (Berends, 2000). And the explanation that math teachers had high negative TVCE is that NEE was designed less for them than for teachers who taught Chinese language.

When it came to the relationship between teacher background variables and TVM, in addition to *school level*, *teaching subject*, and *teaching experience*, three more variables, *rural school*, *midland school*, and *professional title*, had a significant effect on teachers' view of the NEE model. English teachers working in midland, and rural schools were likely to view the model as problematic, while junior high teachers with five years or less teaching experience and high professional titles were likely to view it unproblematic. Regardless, these results were largely consistent with the findings for TVCE.

As for variables of NEE participation, both were positively related to positive TVM and positive TVCE. This revealed the significant role of NEE participation in predicting teachers' positive view of the model as well as their high comprehensive efficacy beliefs. In other words, the longer time, and the greater level of NEE participation, the more positively teachers would view the model as well as themselves as efficacious. Surprisingly, *years of NEE participation* was not related to negative TVCE or teachers' efficacy doubts, and even more surprisingly, neither variable, *years of NEE participation* or *level of NEE participation*, was related to negative TVM. However, when the mediator of positive TVM was controlled, both of them became negatively indirectly related to teachers' efficacy doubts. In a word, NEE participation helped to enhance positive TVCE but restrained the development of negative TVCE.

To compare the findings concerning the relationship between teacher background variables and TVCE with early studies of other scholars was extremely difficult, if not completely impossible, because of:

The multidimensional construct of the self-developed Comprehensive Efficacy Scale in relation to the New Education Experiment

The efficacy measure was unique to the study. It did not measure how much teachers believed in their capability in bringing about desired student outcomes, but measure how much *more* confident they felt in their capability as well as their willingness, efforts, behaviors, and commitments in generating desired general outcomes, compared to before they participated in the New Education Experiment. Thus, as a comparative construct of teacher efficacy belief, it included five components: teacher self-efficacy, collective efficacy, collaborative efficacy, reform alignment efficacy, and teacher efficacy doubts.

The cultural and educational differences between Western and Chinese schools

China has a long tradition of respecting teachers and valuing education. Under the Confucian influence, teachers in China are still highly respected by students and their parents as a knowledge source and educational authority. Shouldering the dual responsibility of imparting knowledge and educating the person, Chinese teachers are expected to be exemplary with knowledge as well as moral ethics. Equally important as a solid knowledge base, teachers also need to love students, and be loyal and committed to education. This tradition of laying respect and trust on teachers can empower them in some ways, but the culture of “being modest” may result in self-report of lower efficacy levels in some other ways (Cheung, 2008). Moreover, in the Chinese society where collectivism and interpersonal relations are more valued, teachers may be more concerned about “what we can do” rather than “what I can do”, or “what I can do in getting students and parents engaged in learning tasks (affective efficacy)” rather than “what I can do in dealing with planning, conducting, and evaluating my lessons (academic efficacy)” (Cheung, 2008, p. 397).

However, regardless of the difficulty in comparing the current study with prior research, results of early research can be of implications for better understanding of the findings reported in this study. Thus I will try to make a comparison in possible aspects.

Influence of teacher background variables

In one study to assess self-efficacy beliefs of novice and career teachers, Tschannen-Moran and Woolfolk Hoy (2007) reported that of all the demographic and school setting variables tested (gender, race, teaching experience, age, teaching setting (urban, suburban, rural) and school level (preschool through high school), none was significantly related to novice

teachers' self-efficacy beliefs, and only school level was related to the self-efficacy level of career teachers. In the subsequent regression analysis, school level taught still made a significant independent contribution to explain the variance of career teachers' efficacy beliefs.

Teaching experience was not found to be related to the efficacy beliefs of both novice and career teachers, nor was school setting to their efficacy beliefs. The explanation for the former, before considering mediating effect in the current study, was that "self-efficacy beliefs tend to be fairly stable once set" "they would not necessarily tend to increase as years of experience increase." (p. 952). For the latter, they did not find a satisfying answer although they also expected lower sense of efficacy of teachers in urban schools where teaching environment were more challenging.

The findings of other studies with regard to the relationship between teaching experience and teacher self-efficacy were contradictory. Wenner's (2001) study with pre-service and in-service teachers indicated that longer teacher experience led to greater perceived efficacy of teachers. This was supported by some studies (Hoy et al., 1993; Rubeck et al, 1991; Isler, 2008). For instance, in a dissertation study regarding the implementation of new primary mathematics curriculum in Turkey (Isler 2008), the researcher also reported that teachers' sense of efficacy increased with teaching experience although this increase was not statistically significant.

However, in a study investigating primary school teachers' attitudes and efficacy beliefs towards a nongraded state mandated educational reform, De Mesquita and Drake (1994) found that teachers reported a lower sense of efficacy when their experience increased. Such results were similar to prior research of Brousseau, Book, and Byers (1988), and Dembo and Gibson

(1985), where lowered teacher efficacy was found to be associated with increased number of years of teaching experience.

In China, many studies (Yu, 1995; Jiang, 2001; Huang, 2005) indicated that teaching experience was not a significant predictor of teacher efficacy. Jiang (2001) and Huang (2005) concluded that none of the variables of teaching experience, age, gender, academic degree and teacher rank (i.e., professional title) was significantly related to teacher's sense of self-efficacy.

In terms of relationship between school level and teacher efficacy, available Chinese literature has not proved that such investigation has been conducted, while results of English studies conducted outside of China tended to agree that elementary teachers had higher efficacy beliefs than middle school and high school teachers (Greenwood et al., 1990; Guskey, 1982; Parkay et al., 1988; Fuller et al., 1986; Midgley et al., 1988; Tschannen-Moran et al., 2007). English research further found that grade level in a school was negatively related to teacher efficacy beliefs. Anderson et al. (1988), Raudenbush et al (1992), and Ross (1994a) all concluded that increase in the grade level taught was associated with decrease in teacher efficacy. Isler's (2008) research in Turkey also revealed that primary teachers who taught all subjects possessed higher efficacy beliefs in the implementation of the new math curriculum compared to the mathematics subject-matter teachers teaching higher grades at elementary level. Bandura (1993) studied the findings from research in progress and found a quadratic relationship between grade and efficacy in the elementary school level: kindergarten teachers had low perceived efficacy because students were unprepared for school; efficacy beliefs increased for K-1 teachers because students learned school routines and mastered tasks which were relatively easy; the decrease in grades 2-6 resulted from the increase of academic demands and accumulation of scholastic deficits.

Bandura's quadratic relationship theory offered some implications in understanding the findings of the current study regarding school level and heightened comprehensive teacher efficacy. Junior high school teachers reported higher TVCE because all stakeholders in China at this stage, teachers, students, parents and all important others, begin to become seriously concerned about reading and writing, and engagement of other academic programs of the students. This collective attitude builds up relatively higher respect for junior high teachers. When students and parents show high respect for and strong trust on teachers, teachers may demonstrate more confidence and power when disciplining students and conducting lessons. Cheung's (2008) research indicated that the first of the three most commonly cited factors for the contribution of Shanghai teachers' efficacy beliefs was respect and confidence placed in them by students and parents. The other two were the training they received from universities and the experience they gained from daily teaching practice.

Another hypothetical explanation is that more capable elementary teachers, or teachers with higher efficacy beliefs and credentials, may transfer themselves to higher-level schools, leading teachers in those schools to an increased level of efficacy beliefs in general.

Two explanations may contribute to understanding the positive relationship between school level and teacher self-efficacy, but not necessarily the school level's relationship with *comprehensive* teacher efficacy in relation to educational reform although teacher self-efficacy is indeed one of its significant components. The most robust explanation should be the voluntary level of participating schools. As the survey data showed us, 1,754 of the 2,173 respondents, that is, more than 80% of the sample, were from elementary schools. This number was representative of the actual proportion of elementary school participation. As far as the researcher knows, quite a number of these schools did not have freedom to choose whether to participate or not, which

suggested many elementary schools were required to implement the NEE reform due to the preference of district educational officials. This was not the case with junior high schools. Faced up with the *zhongkao* (senior high entrance exam) pressure, officials did not dare to force these schools, thus left more free choice with the principals to make their decisions. Senior high and vocational schools might have more free will in participating in NEE, however, the former, greatly influenced by the traditional idea of college entrance rate, stuck more firmly to the exam-oriented instructional model and implemented NEE more perfunctorily, while the later, which often had students with low learning motivation and weak academic background, would have more difficulty in NEE type of reforms which emphasize reading and writing.

The negative correlation between teaching experience and TVCE revealed by this study may be because teachers in the first five years of their career were more likely to have passion to make a change of the current educational situation. Berends' (2000) study revealed that young, less experienced teachers were more open to reform changes. He further pointed out that teachers over 40 were significantly less likely to support reforms. In contrast more experienced teachers witnessed educational reforms coming and going very often, thus had low belief in NEE model, which further led to low comprehensive efficacy in relation to reform implementation. Tschannen and Hoy (2007) found that novice teachers who lack significant mastery experiences would have their efficacy beliefs more dependent on other inputs such as verbal persuasion, vicarious experiences, and emotional arousal. As NEE is highly persuasive in motivating teachers, strategic in arousing enthusiasm to take actions, and effective in organizing teaching demonstration for modeling, it is highly likely that young teachers would be more responsive, and have firmer beliefs in the model as well as their comprehensive efficacy to turn the goal of the model into a reality.

Two variables, gender and subjects teachers taught, were expected to be significantly related to TVM and TVCE because for the former, many early studies (Anderson et al., 1988; Cheung, 2006, 2008; Ross et al., 1996) indicated that female teachers tended to report significantly higher efficacy beliefs than males, while for the latter, NEE model was designed more specifically applicable to the subject of Chinese literacy. Subject taught was indeed a significant predictor: English teachers had less positive TVM and TVCE, and math teachers had more efficacy doubts or negative TVCE. However, survey results did not find sufficient evidence to support the gender-efficacy hypothesis although the weak negative B and p value close to .05 for male teachers ($B = -.051$, $p = .069$) probably suggested a slight amount of practical difference in TVM (not in TVCE) between female and male teachers. The difference was not salient enough.

Some early research did get findings demonstrating significantly positive relationships between gender and teacher efficacy. However, researchers acknowledged that because female teachers outnumbered male teachers in many regions at the elementary school level, misperception might occur that elementary education is a feminine profession with female teachers feeling more efficacious than males (Mills, Martino, & Lindgard, 2004; Wilkins & Gamble, 2000).

In summary, prior studies reported mixed findings with regard to the relationship between teacher efficacy and teachers' gender, age, school/grade level, or even years of teaching experience. Teacher characteristics seem to be not consistently related to teacher efficacy. One possible reason for the inconsistency may be disregard of the mediating effects of some other variables.

Influence of NEE participation

This variable includes years of NEE participation, and times for participating in NEE conferences and teacher training programs (level of NEE participation), both of which were significant predictors of positive TVM and positive TVCE. Results showed that the longer teachers participated in the New Education program, and the more often they were involved in the NEE conferences and training programs, the more likely they had positive views of the NEE model and comprehensive efficacy. Surprisingly, only *level of NEE participation* was significant in predicting teacher efficacy doubts (negative TVCE), neither was a significant predictor of teachers' view of NEE problems (negative TVM). In other words, NEE teachers, regardless how long they were in the program, would have lower efficacy doubts only when they got more deeply involved in the program. In contrast, they would not change negative TVM no matter how long or how deeply they were involved. Given that NEE regards teachers as the most important change agents, and it values teacher enhancement as well as teacher emotion, it seems reasonable that it was proved to have a positive effect on TVCE.

In contrast, prior studies examining impact of education programs on teacher efficacy beliefs yielded different results. In their comparative study of efficacy beliefs between U. S. and Taiwan pre-service teachers before and after their teacher-education programs, Lin, Gorrell, and Taylor (2002) found "U. S. pre-service teachers' ending scores were higher than their beginning scores; Taiwanese pre-service teachers' scores were lower than their beginning scores" (p. 44). They explained the difference as being influenced by the different structural context of teachers' study, the goals orientation in their teacher-education programs, and cultural perspectives. Other studies found that 1) the program investigated was effective in enhancing teacher efficacy beliefs (Volkman, Scheffler, & Dana, 1992); 2) it had a short-term positive impact but the effect did not

sustain in the delayed post-test (Ohmart, 1992); 3) the impact on teacher efficacy beliefs was dependent on how it was implemented, and whether participants shared the goal and basic conceptions of the program (Rosenholtz, 1992); and 4) the program was likely to have more positive effect if it considered involvement of teachers' past experiences and effective instructive strategies (Swars, 2005).

The mediating effect through positive TVM on TVCE

The most significant finding of the study is that teachers' positive view of the NEE model is a complete mediator of the effects of many variables regarding teacher participation and teacher background on teachers' view of comprehensive efficacy. Teacher participation of the NEE model influenced both teachers' comprehensive efficacy beliefs and efficacy doubts (positive TVCE and negative TVCE), completely through the mediator of positive TVM. The mediation values of *years of NEE participation* were .410 for positive TVCE, and -.015 for negative TVCE, both at the $p < .05$ level; and the mediation values of *level of NEE participation* were .573 for positive TVCE, and -.023 for negative TVCE, both at the $p < .001$ level. These results suggested that teachers' participation of NEE had a significant impact on TVCE, but the impact was fully mediated by positive TVM. In other words, if teachers did not have a positive view of the reform model, even if they participated in it for a long time and at a high level, it was almost unlikely for comprehensive efficacy beliefs to be high, or efficacy doubts to be low.

As for teachers' background variables, positive TVM was also a complete mediator for many of them. In this study, no significant direct effects of *midland schools*, *rural schools*, and *professional title* on positive TVCE were found, nor were the direct effects of *five years or less teaching experience*, *English*, *midland schools*, *rural schools*, *professional title*, and *years of*

NEE participation on negative TVCE. This was consistent with previous research (e.g., Tschannen-Moran, & Woolfolk Hoy, 2007) which concluded that except for school levels, none of the demographic and school setting variables was related to teacher efficacy beliefs. However, the current study revealed that they were actually indirectly related to both positive and negative TVCE. The indirect effects of *junior high* and *professional title* on teachers' comprehensive efficacy beliefs were significantly positive, while the indirect effects of *English, midland schools*, and *rural schools* were significantly negative. The mediation values of the former two were 2.41 and .429 respectively; and those of the later three were -1.213, -.956, and -.838. Except for the .001 p values of *junior high*, all other p values were less than .05. These results suggested that junior high teachers and teachers with high professional ranks got high positive TVCE, and English teachers, and teachers in midland schools or rural schools got low positive TVCE when positive TVM was controlled. If the mediating effect were not considered, three of the seven variables, that is, midland schools, rural schools, and professional title, would not significantly related to positive TVCE.

The five teacher background variables which had significant indirect effects on negative TVCE via positive TVM were: *five years or less teaching experience, professional title, English, midland schools*, and *rural schools*. The negative values of the first two variables ($B=-.069$, $p<.001$; $B=-.167$, $p<.05$) indicated that less teaching experience and high professional ranks were associated with low level of negative TVCE when positive TVM was controlled. In contrast, the negative values of the other three ($B=-.042$, $p<.05$; $B=-.035$, $p<.05$, and $B=-.035$, $p<.05$) demonstrated teachers who taught English, and who were in midland, or rural schools, would have more efficacy doubts when positive TVM mediated. Moreover, *years of NEE participation*, which used to be unrelated to efficacy doubts, became negatively associated with it when

positive TVM was controlled. To put it simply, if the mediating effect were not considered, six of the seven variables (except for *level of NEE participation*) would not have statistically significant contributions to negative TVCE.

Early research trying to identify factors accounting for teacher efficacy beliefs did examine effects of demographic and contextual variables, and effects of teachers' attitude toward reform on teacher efficacy, but none studied the mediating relationship between them. Studies examining the impact of teacher intervention programs found that some succeeded in increasing teacher efficacy (Dutton, 1990; Stein & Wang, 1988), some failed (Guyton, Fox, & Sisk, 1991; Vitale & Romance, 1992), and still some worked only for a certain group of teachers under certain circumstances (Corbitt, 1989; Rosenholtz, 1987). Chester's (1991) study revealed that the new school environment had a negative impact on experienced teachers' perceived efficacy. Rosenholtz (1987) also reported the negative effects of school reform on teachers' efficacy beliefs. Explanations to the mixed findings were diverse, but one shared view for the successful program implementation appeared to be teachers' understanding and positive attitude toward the program. In other words, teachers' view of the program is of great significance for program implementation as well as development of efficacy level: if teachers saw the meaning and shared the values, they would identify themselves with the program, tend to be more engaged and committed to it, and be more likely to perceive the implementation process as a happy act of empowering themselves. Consequently, their sense of efficacy would be enhanced.

This study may explain why previous studies had inconsistent findings. Results demonstrated that positive TVM mediated the impact of many demographic and contextual variables on TVCE. They were likely to have an indirect impact on teachers' view of

comprehensive efficacy through teachers' positive view of the NEE model even if they did not have direct contributions to it.

Major findings from the qualitative data

The ethnographic piece of this study addressed the issue of teachers' perception of the NEE model, and how this initial buy-in or subsequent changed attitude affected their view of comprehensive efficacy as well as implementation outcome. Findings indicated that teachers' participation in NEE yielded varied changes in TVM and TVCE depending on complex individual and organizational factors. Factors causing variance typically demonstrated in the following areas:

- Whether teachers viewed NEE as desirable or mandatory
- Whether teachers taught elementary or junior high students
- Who decided how and when and which teacher first got exposed to NEE

The eleven-week intensive study of Experimental School Affiliated and one-year-long involvement with NEE schools, organizations, and conferences across the country yielded a number of findings. One major finding was the rather perceivable variation between schools and even within one school. There existed large within-school and between-school variation in implementing New Education Experiment, ranging from very limited, partial, moderate, to largely full participation of the NEE model. Teachers' view of the New Education reform and their comprehensive efficacy also varied greatly either within or across schools. There was still a controversy at NEE top level between deepening existing implementation and extending participation scale regardless of implementation fidelity.

Another big finding was the different teacher attitudes and responses to NEE resulted from the difference in initial buy-in and implementation outcome. Teachers who a) saw the need to change in school practice; b) shared the core values of NEE; and c) got exposed to NEE first as teacher representatives chosen by the schools, tended to espouse the reform model more actively, and demonstrate more commitment to it. Moreover, teachers who had initial doubts and fears but reaped enjoyable outcomes while experiencing the creative and productive process of implementation were more likely to change their initial attitude and perception. All these teachers were more likely to have higher positive TVM and TVCE. In contrast, teachers disengaged in NEE throughout the process regardless of different reasons, and teachers who tried NEE but ended up with frustrating results tended to be resentful, thus had lower positive TVM and TVCE although their self-efficacy alone might continue to increase. The type of teachers included those who a) felt being forced, b) experienced loss of their professional identity, c) held a firm belief in traditional education and saw no meaning to change, d) had stress and pressure from *zhongkao* (the senior high school entrance examination), and e) felt poorly supported and trained in acquiring the necessary resources, knowledge, and capacity to meet the need of NEE implementation.

This led to a third interesting finding, which was the re-construction of teachers' view of the model in the process of NEE implementation, which would further lead to re-construction of teachers' view of comprehensive efficacy. Teachers' view of the NEE model could be gradually re-built depending on their subsequent direct or indirect experiences in NEE reform implementation. Their positive view would be reinforced while negative view would be weakened or turned to be positive after they experienced personal success or saw surrounding teachers' success in implementing the reform initiative, or opposite consequences would follow

if they themselves or surrounding colleagues failed, particularly without being timely encouraged.

Variation in NEE implementation

Results from ethnographic study of Experimental School Affiliated as well as cross-China site visits revealed that there was great variation in the level, depth, and consistency of NEE implementation both within and between schools. The specific within-school variation at ESA was presented in Chapter 5, and the between-school discrepancy was almost the same. Some schools mainly focused on children curriculum, some were even worse, limiting implementation merely to the superficial building of physical campus environment with little substantial change of teaching and learning practices. Since New Education Experiment is more like a comprehensive school-wide reform model, it requires, on the one hand, a transformation of the whole school in terms of setting the shared goal, building a positive school culture, supporting teacher development, and improving curriculum and classroom instruction. On the other hand, it lacks articulated curriculum, prescribed methods, research-based benchmarks and standards for process monitoring and outcome assessment due to its philosophically oriented characteristics and “stone soup making” conception. Although some teachers were excited with the space for creativity left by NEE, and Ross and his collaborators (1997) argued that specific models suppressed creativity, more teachers expressed the desire to be provided with more specific guidelines and examples for better implementation. Porter’s (1989, cited in Desimone, 2002, p. 442) perspective is of implication: “excellent teachers need autonomy to thrive, average teachers need a balance of specificity and autonomy, and weaker teachers benefit from very specific guidelines.” A safe way to ensure successful implementation regardless of teacher difference is to have a balanced consideration of model specificity and teacher autonomy.

Belief change and behavior change, which causes which?

One pattern observed from Experimental School Affiliated was that teachers who actively implemented the reform often viewed the reform model more positively and reported higher level of comprehensive efficacy. Now the question is: did the change in their view of the model and their view of comprehensive efficacy result from their active implementation of NEE? Or, their positive attitude to the reform model and high level of efficacy beliefs enabled them to approach the NEE reform in a more active way? The answer Bandura's (1995, 1997) theory offered is that on the one hand, one's past behavior, to be more exact, mastery experience, is the most powerful source of self-efficacy. Success can lead to establishment of strong beliefs about one's self-efficacy while failure is damaging to self-efficacy beliefs. On the other hand, self-efficacy is a strong indicator of subsequent behavior. Positive efficacy beliefs can lead to sustained efforts, more commitment to the challenging goal, and less stress and fear in front of setbacks or uncertain situations. Bandura explained that cognitive processes like "what individuals think, believe, and feel affect how they behave" (1986, p. 25).

Two strands of early research findings are important in understanding the discussion on this issue. One strand (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Huberman & Miles, 1984) evidenced that successful implementation of innovations must be supported by initial teacher buy-in. Muncey and McQuillan (1993, 1996) concluded that there was more implementation success in schools with consensus on the need for reform and a shared vision, while teachers' disagreement could block implementation and continuation of a reform initiative. Datnow and Castellano (2000) pointed out that sometimes reforms took hold just because they happened to match the preferences and strengths of teachers in a classroom. This can explain teachers' difference in initial response to the NEE reform. Covey's (2004) "See-Do-Get" theory

indicated that how we *see* the world determines what we *do*, and what we *do* determines what we *get*. Teachers initially viewed the model of New Education on the basis of their own perspectives and past experiences. Some became excited and eager to move forward as soon as they got to know the model. Consequently, they were more likely to be selected as pioneers or teacher leaders in the reform-oriented school. For those teachers who did not have such a feel at the beginning, school/district leaders would rather not force them, instead, they need to build up their capacity for reflecting and understanding not only the impact of individuals' experiences on implementation success or failure but also how their own actions and behavior in guiding change efforts influence those experiences. Only by aligning teachers with the reform initiative in this way of servant leadership that dedicated oneself to the empowerment, creativity, and growth of individual teachers, can a school win the heart and willingness of the teachers to plunge into the reform wave and get the results the school intends to get.

It seems naturally right to change people's beliefs before attempting to change their behavior: you have to make people believe in something before they are motivated to act on it. However, the second strand of research indicated that there were times when changes in beliefs followed changes in practice (Fullan, 1985; McLaughlin, 1991). Guskey (1986, 2002) also argued that changes in teaching practices preceded changes in teachers' beliefs, attitudes, and perceptions. He claimed that his idea was grounded in the theory of the 19th century psychologist William James, who explained that "we see a bear and run, therefore we are afraid. Or, if we slip while descending a staircase, we grab for the railing first, and then sense the fear of our near fall" (cited in Guskey, 2002, p. 386). This also echoes Dewey's (1902, 1916) theory of doing prior to knowing (1902, 1916). By doing, we learn, and then we know.

Many teachers studied in this research indeed had their views and attitudes changed gradually after they embarked on the NEE program and began to see the valued outcome. The outcome may not be limited to students' test scores, but broader ranging from students' change in classroom behavior, interest in learning, attitude toward school, to parents' support and engagement in children's education. Below are excerpts of a district administrator's yearly narrative about some teachers' transformation even if they did not have much idea about NEE initially (Li, Dec. 31, 2010):

Like all outstanding teachers in the NEE online teacher college, *Lan Mei* kept writing notes to parents, kept doing children curriculum, and kept reading books together with the kids. Moreover, her class started "book drifting" program with *Zhou Laoshi*'s class, thus kids had more books to read ever since.

Zhou Laoshi led the kids in his class to the exploration of fairy tales. The kids wrote by themselves the script of *The Ugly Duckling*, and they have begun to rehearse. She continued to describe another teacher's change:

Now *Liu Juan* becomes an excellent teacher in the moral education classroom. Since last year, upon the establishment of the moral education classroom, she started to conceive the ideas of her "Little Ants" classroom. For one and a half year, we frequently discussed and exchanged views with each other for the future of "Little Ants". Their shared class goal "reading ten thousand books and walking ten thousand miles" won the approval and support from parents. Therefore, in the past one and a half year, she and parents took the kids to the fields in the country to seek the four seasons of spring, summer, autumn and winter, to *Pingshan* County to trace the footprints of *Wang Erxiao*, the little hero in the anti-Japanese war whose story was compiled in their textbooks, to the climbing of the Great Wall in *Nianziguan* Pass... Then, she, who is comparable with Rafe Esquith, the author of *The Myth of Room 56*, started the rehearsal of *The Wizard of Oz*, together with the kids, they sought love, courage, and wisdom represented in the fantasy tale.

(Source: <http://bbs.eduol.cn/2011-2/2/231924440112.html>)

One teacher (*Luohandaoge*, Jan., 2011) recorded how she influenced the principal and her colleagues by reproducing for them some sections and chapters from a book she loved and read for many times,

At that time, the delivery men working for the online bookstores got puzzled: how come teachers in this school keep buying the same book again and again?

(Source: <http://bbs.eduol.cn/2011-2/2/231924440112.html>)

Sometimes, teachers who had initial resistance to New Education Experiment were found to be motivated by their colleagues who were empowered by what they were able to do to improve themselves as well as student learning, while the first doers became more committed to NEE by experiencing the growing process, the followers, subsequently, changed their conventional beliefs and negative attitudes by observing others' success and doing in person. This process of change was explained by Chairman Mao Zedong (1937) as follows:

The objective world which is to be changed also includes all the opponents of change, who, in order to be changed, must go through a stage of compulsion before they can enter the stage of voluntary, conscious change. The epoch of world communism will be reached when all mankind voluntarily and consciously changes itself and the world (p. 274).

The discussion on relationship between belief change and behavior change is like the old philosophical question concerning the chicken and the egg, it seems exceedingly difficult to judge which comes first. NEE's experience was seeking the people of the same size (i.e., with shared values) on the one hand, and trusting the power of *action first* on the other. Cognition and behavior are reciprocally related and mutually influenced. Perhaps Philipp's (2007) proposal is most insightful: "it is more important to support teachers to change beliefs and practice in tandem than to worry about determining which changes first." (cited in McDonough & Philip, 2010, p. 397).

Further comparison between the quantitative and qualitative findings

Findings from the ethnographic piece of the study were congruent with the quantitative ones in terms of the impact of the variables of teaching experience, professional title, NEE participation, and TVM on TVCE. Young, less experienced teachers with high professional ranks and positive TVM were by far more active implementers in comparison with the old, experienced ones with negative TVM. English teachers, and teachers in midland or rural schools had lower positive TVCE compared to the non-English teachers in eastern or suburban schools. Furthermore, teachers getting involved with NEE earlier, longer, and more deeply oftentimes became teacher leaders in the reform process, and they were by far more positive in viewing the reform model as well as their comprehensive efficacy. Collaborative and collegial relationships, which were salient between them, became part of the norms of communication.

There was only a little inconsistency between the qualitative and quantitative findings. Junior high teachers were found to be more resistant at ESA while in the quantitative study, they demonstrated a statistically significant positive association with positive TVM and TVCE. The reasons for ESA teachers' deviation were three fold: first, it was teachers at elementary department of ESA who were first sent to learn the NEE model, while teachers in the junior high department were not taken into consideration at the planning stage; second, compared to elementary teachers at the same school, junior high teachers had to be more accountable for students' test scores because they were faced up with the senior high entrance examination; third, junior high teachers at ESA were resentful because they felt disregarded at the beginning, and compelled to participate afterwards. In contrast, those independent junior high schools did not have an elementary department to interfere, and they were free to choose to participate or not. Probably, the exclusion and isolation policy mainly targeting the principal Dianne at ESA, who

used to be in charge of the junior high department, worsened the situation, and made it more politically complicated.

One further finding obtained from observational data in the qualitative study was not only teachers' view of the reform model would affect their comprehensive efficacy and implementation behavior, the latter two would also affect the former. The possible interpretation has been discussed, but more research, both qualitative and quantitative, is needed to get more solid evidence to support it.

Conclusions and implications of the study

To recapitulate, the idea of the New Education reform has been generated from a perception that the current education system in China isn't working properly, and that something has to be done to correct, adjust, or improve the troublesome situation. It started from a series of lectures and addresses of Professor Zhu Yongxin, who pointed out the problematic aspects of present Chinese education, and portrayed how the ideal education would be like in his mind. The embryotic ideas was later collected and published as a book entitled *The dream of New Education---My Educational Ideal*. Inspired by these ideas, a number of teachers and educators took on the road to explore approaches to realize the ideal. They firmly believed in the power of books, and advocated to achieve the ideal by teachers', together with students' persistent reading and writing. One's reading history is virtually the history of his spiritual growth; and one nation's civilization level is determined to a large extent by its reading level. While reading is enhancing oneself by standing on others' shoulders, writing is improving oneself by climbing on one's own shoulders. In addition, writing motivates one to read more, think more, and do more. Everybody in anywhere at any time is able to read books as long as he has a willing heart, and a

determination to do it now. Everyone can contribute to making a difference of today's education as long as he has a strong belief and keeps doing. If not, the only reason must be that he does not believe firmly enough, or he does not try hard enough, or he does not persist long enough.

“Believe in seeds, believe in time.” (Zhu, 2009, p. 6).

The quantitative part of this study produced data to demonstrate that very few factors regarding teacher demographics and contexts were significant predictors of TVCE if the mediating effect of positive TVM was ignored. However, when teachers' positive view of the NEE model mediated, variables affecting both positive and negative TVCE almost doubled. It also proved that NEE participation had significant effects on both comprehensive efficacy beliefs and efficacy doubts, particularly when it was mediated by teachers' view of the NEE model. This leads to the first two conclusions of the research:

Conclusion 1: The New Education reform had a positive effect on teachers' comprehensive efficacy beliefs, and negative effect on efficacy doubts.

Generally, the longer time, and the greater level of NEE participation were associated with higher comprehensive efficacy beliefs, and lower efficacy doubts, particularly when teachers' view of the NEE model served mediated.

Conclusion 2: TVM was a good predictor of TVCE, either as an independent contributor, or as a mediator between other predictors and TVCE.

TVM was not only highly predictive of TVCE alone, but also mediated the relationship of other predictors and TVCE. Teachers with higher ranks, and working in junior high schools generally had their effects on positive comprehensive efficacy completely through positive TVM, so were the negative effects of teachers who taught English, in midland, or rural schools

on positive TVCE. The relationships between negative TVCE and five independent variables (*five years or less teaching experience, professional title; and English, midland schools, and rural schools*), and between TVCE (regardless of negative or positive) and the variables of NEE participation were also completely mediated by positive TVM. In addition, TVM independently explained 78.30% of comprehensive efficacy beliefs and 40.04% of efficacy doubts.

One of early researchers' interests in the impact of variables at individual and contextual levels on efficacy beliefs (not only teachers' efficacy beliefs) stemmed from the possibility of identifying the right person for the right job in the right environment to facilitate work efficiency and productivity. One of the implications this study offers is no such "Mr. Right" can be identified if the mediating effect of his attitude about the job is not considered. Teachers' positive view of the reform model in itself was a significant determinant of their comprehensive efficacy, and through it, many individual and contextual variables showed an indirect impact on TVCE.

The qualitative part of this research largely supported the quantitative findings. Teachers' view of the education reform was observed to be related to changes in teachers' comprehensive efficacy. Positive TVM was also perceived to be a powerful motivator of behavior: teachers who aligned themselves with the reform initiative demonstrated more positive TVCE and more implementation success. However, teachers' view of the reform, as qualitative data suggested, could actually be changed after they implemented it and experienced successful change in teaching outcomes, thus supporting the theory that belief change sometimes follows behavior change. In addition, observational data found the role of school culture, management style, and decision making mechanism in changing TVM and TVCE.

This leads to another two conclusions of this research:

Conclusion 3: Successful implementation of the New Education reform depends on a willing heart, a positive attitude, and high comprehensive efficacy beliefs

Perhaps it is meaningful to select suitable candidates for the New Education reform, like those high-ranked, less experienced, non-English junior high teachers. However, what matters more is their view of the reform, or their attitude towards it. Therefore, for a better implementing effect, NEE developers are supposed to select the suitable schools or teachers first, diagnose their specific needs and instructional orientations, identify their individual preferences, willingness and motivation, and arrange for them access to suitable learning or practicing opportunities so that their positive view of the reform model and comprehensive efficacy can be fostered.

Conclusion 4: successful implementation of the New Education reform depends on advocating and creating a more decentralized policy making mechanism, and more equitable environment.

Findings of this study showed that, compared with teachers in rural, midland, or west schools, eastern, suburban school teachers had more positive TVM. Even when the former had high positive TVM (positive TVM mediated), they had higher efficacy doubts or negative TVCE. This does not suggest that those teachers are inherently less competent or less efficacious. The reason is quite a number of them were undereducated, poorly paid, and inaccessible to the opportunities for professional development. Moreover, their schools were more centralized, and less well-equipped. In one rural NEE school I visited, there were four adjuncts out of the nine faculty members. Due to their lack of credentials, they were only paid 500 yuan a month, less than one half to one third of a formal elementary teacher's pay in rural

areas. I was moved by their will to act in accordance with NEE tenets regardless of the treatment. However, the “will to act” alone can not work, some “basic inputs” and “facilitating conditions” as Levin and Lockhead (1993, p. 13) proposed are needed, where necessary teaching equipments and resources are provided, and voices about both teacher-centered and student-centered education, about exam-oriented and quality-oriented instruction, and about top-down and bottom-up leadership can all be equally uttered and heard.

The more significant implication this study offers to reform practice is how to keep a balanced consideration of a) reform model specificity and teacher autonomy; and b) belief change and behavior change when implementing a reform initiative. Overemphasis of one over the other can lead to consequences that inhibit rather than facilitate reform implementation. Thus the last two conclusions emerged:

Conclusion 5: Successful implementation of the New Education reform depends on balancing reform model specificity with teacher autonomy

In her study of American comprehensive school reform, Desimone (2002) concluded that the more specific the reform model, the higher the implementation fidelity. But she further pointed out that the disadvantage was the more specific a reform design, the less creativity it required from teachers, thus the more likely it may stifle creativity. As a non-specific philosophically oriented reform model, NEE was perceived by teachers to be too general and provided insufficient support, guidelines, or resources. Moreover, it was lack of a monitoring system and evaluation mechanism. All this lack of specificity made implementation difficult and inconsistent, therefore, variations between schools and even within one school were particularly large.

To address this problem, NEE design team needs to provide more specific guidelines, implementable curricula, instructional models, teacher development programs, and supportive resources associated with schools' and teachers' specific needs. As one important source for self-efficacy building is vicarious experience (Bandura, 1995), it is better for NEE designers to also provide specific examples of practice for teachers to observe and emulate. In this study, teachers who struggled to implement the reform at the initial stage expressed the desire to be provided with concrete examples that best translated NEE tenets into classroom teaching. The 5+2 NEE teacher training program was embraced by teachers, however, due to a personnel shortage and rapid growth of experimental schools, NEE was unable to continue the program. As a result, a majority of teachers in the recently participating schools got no formal training at all, let alone such training that was tailored to their specific needs.

The use of benchmarks based on research data is another important aspect for successful and faithful implementation of the New Education reform. By benchmarking, the best or better implementation practices were identified, thus schools and teachers knew how much progress they had made and how far they had yet to go to reach or surpass the benchmark. A fatal weakness of NEE was that most of its measures were non-theoretical or non-data-based. It seemed right to have a research institute of their own, however, all the members in the institute were more practitioners rather than researchers, each of whom had a strong teaching background but none had prior research experiences or expertise. What's worse, NEE did not create policies or environment to attract outside researchers---the lack of primary data record in the minimum sense would also discourage researchers to enter the field. The *example + bottom line* model sounded somewhat like a benchmarking project, however, it was dependent more on intuitive estimate and subjective impression rather than measureable scientific data. Implementation

would be stronger and more successful if guided and driven by research and data-based benchmarks for best practices and best performance.

Conclusion 6: Successful implementation of the New Education reform depends on balancing belief change with behavior change

NEE reformers aim to produce desirable changes in student outcomes through changing teachers' beliefs and behaviors. The process of change is highly complicated and extremely difficult. Some efforts to transform education are based on the idea that change in attitudes and beliefs comes first (Bybee, 1993; Covey, 2004; Czeriak, 1996), therefore the reform model is supposed to be designed to gain acceptance, commitment, and enthusiasm from teachers before it is implemented. Other models believe in a different sequence where "significant change in teachers' attitudes and beliefs occurs primarily after they gain evidence of improvements in student learning" (Guskey, 2002, p. 383).

As was discussed previously, the relationship between belief change and behavior change is more reciprocal rather than sequential, therefore, to argue which changes first is not as important as to support teachers to change belief and practice in tandem.

To facilitate or hinder teachers' positive change either in belief or in practice, the first key point is whether the reform design can successfully get teachers' buy-in and provide teachers with required knowledge, skills and curricular resources reflecting the reform tenets because successful implementation depends very much on teachers' willingness and their abilities to take up the innovative project. Secondly, it is determined by whether we can build an environment that nurtures a culture of shared decision-making, open discussion, and genuine collaboration. Fullan (2001) pointed out that a positive, supportive and collaborative working environment is

needed to make any school innovation work. The New Education Experiment seemed to be advantageous in gaining the teachers' acceptance, however, the lack of specific support and insufficient training handicapped participating teachers, leaving many of them struggling terribly in uncertain situations. Moreover, the within-school and across-school environment for open dialogue and collaboration needs to be ameliorated so that problems can be solved together, and best practices be shared. A conflicting environment with turbulent political currents only hinders successful implementation.

Since research (Harootunian & Yargar, 1980; Fullan & Hargreaves, 1996) indicated that most teachers, regardless of teaching level, tended to define their success in terms of students' behaviors and performances, reform designs have to be responsive to the requirements of the high-stakes *zhongkao* and *gaokao* tests. To attract and keep more teachers from secondary schools, the design team, on the one side, needs to develop strategies to integrate reform curriculum with the knowledge and skills required to be assessed by *zhongkao* or *gaokao*. On the other side, they have an obligation to direct teachers toward a broader construal of learning outcomes which include not only cognitive achievement but also a full range of student change in behaviors and attitudes such as attendance, classroom behavior, motivation for learning, and attitudes toward school, the class, and themselves (Guskey, 2002).

Changes are slow and difficult, and resistance is sometimes too powerful to remove. Numerous factors get involved in the change process. To reinterpret our findings according to Bandura (1995, 1997), for teachers to be high in efficacy beliefs as well as active change agents of education, the reform model needs to be designed to help:

Develop mastery experiences Stimulate teachers to actively participate in implementation practices and empower them by mentoring and training so that the difficulty level of the reform task is not far beyond their control. Many teachers who participated in the NEE project actually changed their beliefs of the reform model and adopted instructional approaches consistent with the NEE aim. As a result, their sense of efficacy grew in the implementation practice. Similarly, since successful experiences boost efficacy beliefs while failures erode them, reform designers and school administrators need to provide sufficient support and resources for teachers to experience more success so as to build their efficacy up.

Get vicarious experiences Observing a peer succeed in implementing a reform initiative can strengthen beliefs in one's own efficacy. Sometimes a professional training program may not be specific enough to provide classroom practices in line with the reform conception, therefore, teachers need opportunities to get exposed to benchmarking practices for learning and re-directing.

Provide favorable environment for effective verbal persuasion Teachers' efficacy beliefs can grow with credible communication and feedback to guide them through the challenging reform task. Thus, an open and collaborative working environment may nurture a team of teachers with high level of efficacy beliefs and effective implementation.

Arouse emotional responsiveness A certain level of emotional stimulation can create an energizing feeling that contributes to strong commitment and high performance. Reform developers and school administrators need to find strategies to enhance teacher efficacy by creating more opportunities to identify their progress and success on the one side, and to reduce their stressful situations, and lower their anxieties regarding implementation on the other.

With regard to the four sources of efficacy, Bandura's theory appears to be universally applicable. Nevertheless, they do not necessarily carry the same weight, or the same interpretation for teachers in China's educational context. This study, together with Cheung's (2008) research which identified three factors leading to high efficacy beliefs of Shanghai teachers (respect and confidence placed in them by students and parents, pre-service and in-service training received from universities, and experience gained from daily teaching practice), might suggest that arousing emotional responsiveness (i.e., respect and trust), and even vicarious experience and social persuasion, play a more essential role than developing mastery experience in the collectivist cultural background in China.

To summarize, changes are difficult, but not impossible. The New Education Experiment has initiated a worthwhile try. As was mentioned in Chapter 1, it followed the route of China's economic reform to some extent: By addressing the problems of the current educational practices and delineating a blueprint of ideal education in the future, they quickly turned a call to an action that would possibly generate change. To take immediate action, to pursue change, in slow, incremental, but additive ways, may be the most pragmatic strategy to transform the status quo of the educational system in China. Gan Guoxiang, one member of the NEE Research Institute, once said, "he who cannot see the oasis in the desert is not a New Educationer; he who cannot transform the desert into an oasis is not a New Educationer." With immensely great vision and extremely robust action, teachers in China are expected to be able to meet the urgent needs and challenges of the 21st century classrooms.

Further reflections on the New Education Experiment: constraints and possibilities

From a broader perspective, let us continue to reflect and discuss whether the New Education Experiment worked satisfactorily or not. This discussion will start with an analysis of the tensions between the NEE reform and the educational tradition and culture of Chinese society. Then it will come to the practical consequences of accepting or rejecting the reform model. It concludes with an exploration of how both the NEE developers and participating schools work, jointly and independently, to increase applicability and effectiveness of the NEE model.

The New Education Experiment began as a reaction to what was conceived as the traditional test-oriented education in China. More generally, it developed as a result of, on the one hand, the tremendous advances achieved in China that require students to be taught how to engage in a more open and democratic world in a more participatory fashion, and on the other hand, the backwardness of our education system which has largely failed to respond to the new social and economic reality. Moreover, teachers and students who used to be obedient followers and passive policy implementers begin to think pursuing a much richer and more meaningful life under the influence of Western ideologies. Thus the idea of “helping teachers and students live a happy and integrative educational life” is appealing to schools and individual teachers. Over ten years, schools and even individual teachers came into and went out of NEE: some left, many stayed, still more newcomers joined. Overall, the movement is still expanding. Unfortunately, those schools that left were not included in my investigation. However, even within the remaining schools, differences in accepting NEE were noticeable. Like American progressive education which “does not lend itself to a single fixed definition,” thus it “seems fitting in light of its reputation for resisting conformity and standardization” (Kohn, 2008), p. 1), there was no uniform school practice or instruction model observed in the experimental schools. Still, they

could be differentiated from non-NEE schools according to how much they demonstrated a commitment to such values:

- Trusting and respecting teachers as well as students, and being attentive to their uniqueness;
- Being sincerely concerned about their needs, and committing to the goal of helping them live a happy and integrative educational life;
- Nurturing a school culture which values reading, action, democracy, openness, and enterprising spirit;
- Improving students' intrinsic motivation and long-term dispositions rather than test scores or short-term skills alone;
- Providing opportunities for trial and error, guiding both teachers and students to learn, to act, to make progress, and to grow.

Given such positive aspects of the New Education Experiment, it seems understandable why it has grown and expanded so rapidly. However, 862 NEE schools is still a tiny number compared to the total of over 366, 000 elementary and secondary schools in China (Statistic report on national education development, 2009). They still seem far from being the rule, but the exception. The reasons can not be exhaustive, but few can be disconnected with the constraints resulted from the long history and culture of Chinese education.

One perceived obstacle can be attached to the tension between the NEE vision and the current education system of China. Data from Experiment School Affiliated evidenced that even though there were some changes in both the discourse and practice among teachers, the

overarching theme was that there was a continued reliance on old routines dating far back before the NEE reform. This strange phenomenon occurred mainly as a result of the tension created by the centralized governing system of MOE (Ministry of Education), and NEE's increasing requirement of autonomy at the local level. The NEE philosophy, which is more in line with the Western direction, advocates a strong discourse of decentralization. However, along the traditional line, classroom teaching is guided and controlled through prescribed national curriculum, textbooks, teacher guides, sample lesson plans, and examinations that follow the curriculum and textbooks very closely. This framework formulated by the controlling education system creates constraints for what is possible for NEE reform.

Perhaps the more challenging situation for NEE to face is the examination culture. According to Encyclopedia Britannica, the earliest evidence of standardized testing was in China, where the imperial examination system was designed to select the best officials for the bureaucracy of Imperial China under the Sui Dynasty during the 6th century. This system of giving all test-takers the same test under the same conditions was perceived to be an effective means to ensure fairness in selecting qualified people for upward social mobility irrespective of their race, gender, religion, or SES status. It does have some effect in this respect, however, it “can not measure initiative, creativity, imagination, conceptual thinking, curiosity, effort, irony, judgment, commitment, nuance, good will, ethical reflection, or a host of other valuable dispositions and attributes” (Ayers, 1993, p. 116). Therefore, heavy dependence on standardized tests is often distortive and risky. Regardless of its limitations, its influence on China's social life has nurtured a culture where the pressure to raise test scores exerted by parents, school authorities, teachers and students themselves, and the whole society is growing to such an extent that a new kind of test-centered economy begins to boom: after-class tutoring, remedial

programs, special food and drugs developed for test-takers, and near-school lodging, restaurants, and transportation are all new markets for optimum investment. It seems that no Chinese individual or Chinese family can ignore the importance of exams in their life. Situated in a culture where assessments predominantly stress testing and controlling of students, and where examinations seem to matter more than anything else in one's upward mobility on the social ladder, any education reform effort ignoring the exam orientation will be doomed to, sooner or later, end up with failure. This may partly explain why the New Education Experiment, an appealing model in itself though, is still struggling to rise above its marginalized position after ten years of development.

Uprooting the authoritative status of teachers makes one more challenging task for NEE reform since China has a long history practicing teacher-centered education, which positions the teacher as the authority in the hierarchical society. *Zun shi zhong jiao* (respecting teachers and valuing education) is still one of the core values not only advocated by MOE but also practiced by the whole Chinese society. For tens of centuries, Chinese teachers approach teaching in light of the tradition which takes the teacher as the only authority that all the right answers belong to, and the textbook as the only guide that all the contents studied have to follow. An abrupt shift away from this tradition will oftentimes result in extreme discomfort and difficulty from both teachers and students who were accustomed to the old routines a long time ago. This fits in Choulamany and Kounphilaphanh's (2011) arguments discussing educational reform in Lao:

Moving towards a situation where the teacher is no longer expected to be the authority but the facilitator, where curriculum and textbook do not alone formulate content to be learned, and where students, despite their young ages, are expected to become co-constructors in the teaching and learning process, is without a doubt a challenging task for all involved. This involves both the giving away of authority and the accepting of agency on behalf of people in different positions of the system (p. 150).

All these factors, the centralized education system, the exam rhetoric, and the teacher-centered practice, create problems for NEE implementation, and drive NEE teachers and schools into a dilemma: On the one hand, they have been awakened by the New Education reform to the responsibility of providing the young generation with a better education leading towards a happier, fuller, and more vibrant life. On the other hand, they feel too feeble to initiate any change in front of the mandated national curriculum, textbooks, and assessment approach, which leave them little space to modify the contents into something that can meet the NEE goal. After all, students must pass the two crucial exams of *zhongkao* and *gaokao*, and these are structured according to textbook contents. From the students' perspective, they may also oppose accepting the reform because their future is at stake. As long as fundamental changes are not made at higher levels in the education system, it is fair to assume that local practices will not be completely changed along the line NEE developers and implementers have dreamed of, since both teachers and students would gain less by sacrificing more. Nevertheless, this does not suggest that reformers will vanish without a fight. Based on this study, the following are some of the major solutions:

Attending to and transcending the tradition of test priority It is not exaggerated that in China, the students without good scores cannot survive at this very moment, and those without high quality cannot survive in the future. Therefore, as a pioneer of so-called quality education (versus test-oriented education), NEE is challenged to raise students' life-long quality together with their test scores. From the perspective of participating teachers and schools, their willingness and commitments to NEE sustain only when they keep being ranked among the first, and the pursuit of test scores is no longer a preoccupation for them. Revisiting the research data which revealed that teachers in midland, rural schools had lower positive TVCE, while teachers

in eastern, suburban schools had higher negative TVCE, we may conclude that the difference lies in the educational disparity between east and midland of China, and between rural and suburban areas: many midland, rural schools are still struggling to improve test scores while their eastern, suburban counterparts have transcended it.

I once asked one principal to reflect on the conflict between educational tradition and educational reform. Being a good friend of mine, he enjoys following me everywhere to attend all kinds of conferences and seminars regarding reform initiatives. Therefore, I regarded him as an expert, and the answer he offered kept me thinking for a long time. “For schools,” he said, “particularly for those that are struggling to keep above water in the ‘test war,’ the New Education model is no less appealing, but the thing is it is unrealistic to accept. Only those that have already succeeded by conventional standards are able to do NEE, and possibly do it well.” In other words, for the poorly performed schools, NEE is but a luxury rather than a necessity. Hence, for the sake of sustained development, NEE must not only *jin shang tian hua* (add flowers to embroidery) but also *xue zhong song tan* (offer fuels in snowy weather). Simply put, it must attend to exams, and then transcend them. There is no choice but to get into the system, adapt to it, and then overthrow it from within by sabotage.

Reshaping teachers’ professional identity The New Education Experiment presents a tremendous challenge to the teachers who teach and were taught in light of traditional methods. It is much more demanding of teachers, who have to know not only their subject matter but also pedagogy of how to facilitate learning in a broader and more profound way, because learning is no longer reduced to a process of passive absorption relying on mechanical memorization and imitation. NEE teachers, like progressive teachers in America, need to “be comfortable with

uncertainty, not only to abandon a predictable march toward the ‘right answer’ but to let students play an active role in the quest for meaning that replaces it” (Kohn, 2008, p. 5).

According to Collay (1998, 2006), the formation of teacher identity begins in childhood, and evolves in the hierarchical context of the school in which they work. Teachers being long exposed to traditional education would approach their teaching job with traditional assumptions about who they are and what they do. It is too uncomfortable for those with the teacher-centered perspective to lessen control of the classroom for development of student autonomy. Thus, NEE plays a vital role in making teachers understand the significance of the reform, and the meaning for change through training programs. During the process of implementation, NEE should scaffold teacher to change by building learning communities and supporting groups. The complexity of teacher identity reconstruction demands that NEE be mindful of keeping teachers in the persistent pursuit of educational change while minimizing their stress level. Vygotsky’s ZPD (Zone of Proximal Development) theory revealed that a task too far out of reach can lead a learner to frustration, and a task that is too simple can cause boredom, both of which may discourage the learner and result in his giving up.

Committing to NEE in the real sense Although NEE is labeled a bottom-up reform model, and schools and teachers are said to participate at their own free will, they actually choose NEE out of many hidden reasons. According to my observation, some schools just joined NEE for political motives. They took NEE as a tool to gain attention, resources, support, and reputation throughout China. In other words, they would not pursue the NEE vision steadfastly, and they would compromise when something new turns out to be more likely to get them such resources, or get them out of trouble. Consequently, there is little hope for shifting from top-

down control to participatory decision-making, nor any sincerity in respecting teachers' professionalism and need for autonomy.

Maintainability of a genuine commitment to NEE is also determined by the healthy growth of NEE itself. As our respondents reported, NEE is actually challenged by the big task of improving itself in terms of its monitoring process, its capacity to guide and support teachers, its attentiveness to student outcomes and so on. If NEE degrades itself to be an "all-inclusive" thing showing little possibility to bring about substantial change, it is doomed to be abandoned and thrown into the garbage heap of history.

This discussion seems to lead us back to the contingency analysis of NEE and other education reforms. The complex and substantially different characteristics of education reforms, the uncertainty about the nature of education problems and possible solutions, the diverse and rapidly changing conditions under which projects are implemented, and the weak administrative capacity in the bureaucratically structured education institutions, may all be latent factors to make implementation difficult to achieve the reform objective. In addition, education reforms are "people-centered" projects. "They depend heavily for their success on the values, attitudes, and behavior of intended beneficiaries and on their effective participation in project design and management" (Rondinelli, Middleton, & Verspoor, 1990, p. 16). Therefore, to implement education reforms successfully, the most significant task for project designers to perform is to provide training programs and resources with which teachers and administrators can understand the rationale for change, and develop their own capacity to cope with it. Moreover, designers need to comprehensively consider the effects of other contingent elements such as education system, task complexity, cultural values, social and school environments, organizational structures, and management process.

Limitations of the study

This study, as the first empirical NEE study, and the first done by a researcher outside of the NEE community, contributed to opening the NEE black box, helping educators to rethink about the strategies for reform success. More specifically, it led to a greater understanding of the relationships among teacher background, NEE participation experience, TVM, and TVCE, and relationships between all these factors and reform effectiveness. However, there are a number of limitations that should be acknowledged.

One limitation is the lack of strictly randomized sample selection, and the atypical aspects of the school for in-depth ethnographic study. Although the sample was large, and the diverse participants provided a rich source of data that enabled the researcher to analyze the relationship among the independent variables, the mediation variable, and dependent variable, it may still prevent generalization of the findings to a broader population to some extent. Teachers who could participate in the study, and even which school district could participate were largely restricted and determined by the NEE Research Institute, also the institute was the goalkeeper to grant the researcher access to the fieldwork study. The representativeness of Experimental School Affiliated was discussed in Chapter 5, however, its all-inclusiveness (from elementary Grade 1 to junior high Grade 3), its metropolitan location, its private and elite school nature, each made it atypical, thus affected the general applicability of the obtained data in many other school contexts.

Another limitation is the difficulty in designing an instrument to capture and measure all of the relevant variables, and all aspects of one single variable in one survey. For the parsimony's sake, variables investigated, including the teacher background variable and NEE

participation variable, may fail to cover all relevant sub-variables. The construct of comprehensive teacher efficacy has multiple dimensions of teacher efficacy combined in the current study. Although it was considered to be necessary and important to measure all of them together, it differed greatly from the commonly used standard measure. Even the conventional teacher efficacy measure, according to Wheatley (2005), is a conceptually elusive construct that is difficult to assess teacher efficacy with certainty. Therefore, further modification and follow-up tests are needed to examine and enhance its quality, validity and reliability.

The third limitation is quantitative data obtained from the survey were all self-reported by the respondents. As with any self-reported data, information gathered this way might not completely accurate, and possibly resulted in bias. Moreover, the question items in the survey involved teachers' self-evaluation, and evaluation of the reform in which they were engaged, thus there was a high possibility that they would give more desirable answers that may interfere with the credibility of the survey. Fortunately, bias or not, the quantitative data were further studied in the follow-up ethnographic study.

Suggestions for future research

The New Education Experiment is fruitful in practice outcomes but considerably destitute of research outcomes, therefore, the range for future research is broad. Along the line of the current study, at least five areas require deeper and more specific examination:

Mixed method studies, particularly qualitative studies, on relationships between teacher efficacy and educational reform

As was reviewed, "in the rare studies in which both teachers efficacy and teaching practices changed" (Wheatley, 2005, p. 755), many were quantitative rather than qualitative, and

the predominant perspective was that teacher efficacy had effects on reform implementation although a limited few concluded that increase in teacher efficacy followed rather than preceded successful implementation of new programs (Guskey,1986; Stein &Wang,1988). Generally, researchers agreed that teacher efficacy matters (Ross, 1998), but “it is not yet clear when, how, or how much it matters” (Wheatley, 2005, p. 755). Therefore, to develop deep understanding and rich interpretation of how teacher efficacy is related to reform efforts and effectiveness, more qualitative studies which include teacher observations and interviews, longitudinal follow-up, and use of ethnographic method are required so as to identify useful patterns, relationships, and effective practices to support meaningful change in educational reforms.

Systematic studies on all factors, both destructive and constructive, that are related to effective implementation of reform projects

No educational reform can be implemented uniformly due to the complex interplay of a multitude of internal and external factors. However, some schools even only partially implementing a model got better effects than other schools with complete implementation of the same model. What are the factors that affecting successful implementation? Is a specific model better than a non-specific model? How much specificity is enough to provide adequate support but not too much to kill teachers’ creativity? How does this specificity principle vary in different school contexts? Based on our findings of high TVM associated with high TVCE, does the high TVCE necessarily bring about more successful implementation outcomes independent of influence of other variables? How do all relevant variables interplay to contribute to more faithful and more effective implementation?

Studies on broader conceptualization of outcome assessment including both the targeted outcomes measured by tests and important goals reflecting reform effectiveness

As was discussed, teachers tended to define their success in terms of students' performance, the only measure of students' test scores is definitely too narrow to motivate teachers to move away from the exam-oriented instructional practice. What kind of assessment and accountability mechanism can simultaneously encourage innovation while meeting high academic standards (Desimone, 2002)? Similarly, what kind of reform model can both improve students' academic performance and all-rounded development?

Studies on reform initiatives from a broader perspective including students' ideas

Students are regarded to be the missing participants of educational reform. Reformers take for granted that a certain model is helpful for students not from the students' perspective but from their own adults' perspective. This study found that although teachers believed the usefulness of the NEE model, it did not achieve much to the improvement of students' performance. Since educational reform is all about students, reform developers and researchers need to respect their voices. How do they respond to the reform initiative? How do they believe that their school experiences can be improved? Do they feel they are more motivated for learning? do they perceive the new program has positive effects on them? Sometimes, students' voices can better inform efforts to improve educational practices than traditional research data of test scores and graduation rates.

Comparative studies on teachers' change between NEE experimental schools and non-experimental schools, between different levels of NEE schools, between more successful and

less successful NEE experimental schools, and between Chinese schools and schools of other nations

In a recent U. S. report concerning a national strategy to prepare effective teachers, the authors stated, “research over the past decades indicates that no in-school intervention has a greater impact on students’ learning than an effective teacher” (The National Council for Accreditation of Teacher Education, 2010, p. 1). A comparative study of teacher characteristics and change patterns between various experimental and non-experimental schools in China is helpful to identify what works and how to translate the effective reform efforts into normative practices in a broader context. Similarly, a cross-national investigation of the same issues is beneficial not only to learn from other nations’ successful reform experiences in order to improve our own, but also to understand our own strengths and weaknesses in relation to theirs to identify areas for improvement.

Notes

Preface

Note 1

Zhu Yongxin: Member of 11th NPC (National People’s Congress) Standing Committee, Member of 11th NPC Education, Science, Culture and Health Committee, Vice-Chairman of China Association for Promoting Democracy Central Committee, and Vice-Chairman of Chinese Education Society. He used to be a professor at Suzhou University, Vice mayor of Suzhou City, Jiangsu Province, and initiator of the New Education reform in China.

Note 2

China Association for Promoting Democracy: formed on December 12, 1945, is one of the eight legally acknowledged political parties in the People's Republic of China that follow the direction of the Communist Party of China and are member of the Chinese People's Political Consultative Conference.

Note 3

The official ranking system in China is complicated. My position as vice president of Pingxiang College is approximately equivalent to the county-level Party Secretary or Director. Thus, according to relevant regulations, my plan of studying abroad must be approved by the Municipal Party Committee and Municipal Government, otherwise I am not permitted to even apply for the passport.

Chapter 1

Note 1

Collective unconsciousness: According to Wikipedia

(http://en.wikipedia.org/wiki/Collective_unconscious), collective unconscious is a term of analytical psychology, coined by Carl Jung. It refers to the unconscious mind, expressed in humanity and all life forms with nervous systems, and describes how the structure of the psyche autonomously organizes experience. Here it means the passive wait-and-see attitude prevalent as a collective, universal, and impersonal way in all Chinese teachers implementing an educational reform.

Note 2

For some time, one more action *optimize the home-school collaboration* was additionally proposed but not sustained because in the Chinese context, parents tend to be less involved in school activities due to their relatively high trust on and respect for school authority.

Note 3

Tiepigou: Internet name of *Wei Zhiyuan*. He works together with another big name, *Gan Guoxiang*, in the Research Institute of NEE. Currently he is Director of the NEE teacher development program and Chief of the Teaching Affairs Sector, Virtual Teachers College of NEE.

Note 4

Meiyue yishi: roughly meaning in English “one conduct a month,” or “learning to form one good habit in a month.” The goal of this program is to help students gradually develop good habits by doing something small but meaningful around them. For example, the topical activity for January is: Let’s learn to eat. In this activity, young students not only learn the appropriate table manners, but also understand the importance of keeping a healthful diet and a thrifty lifestyle.

Note 5

Teacher ranks or professional titles in Chinese elementary or secondary schools are similar to the academic titles in higher education institutions. The highest level is the special-ranked teacher. Like the title of distinguished professor, very few can obtain it. The second highest is the advanced teacher. The third is the first grade teacher, the fourth is the second grade teacher, and the last category is the teacher below the second grade.

Chapter 2

Note 1

Wang Er Xiao, name of a little anti-Japanese hero who was killed by a Japanese soldier by holding the 13-year-old kid high in the sky with his pointed bayonet and dropped him heavily on a huge rock because he led them to the ambush area of the PLA forces. The story of *Wang Er Xiao* told in the elementary school textbook goes like this: *Wang Er Xiao* is a member of the Communist Youth League. While watching his cows graze he helps the People's Liberation Army stand guard. One day, the Japanese enemy came by and was lost. The enemy saw *Wang Er Xiao* on the hillside and told him to show them the way to where the villagers hid. In order to protect the villagers, *Wang Er Xiao* pretended to obey their orders and walked ahead leading the enemy to the PLA forces in the area. Suddenly, there was the sound of gunfire everywhere. As the enemy figured out what had happened, they killed the little hero, *Wang Er Xiao*. At the same time, the PLA came down the hill and annihilated the enemy.

Note 2

Michael Harris Bond and his collaborators subsequently found a fifth dimension which was initially called Confucian dynamism. Hofstede later incorporated this into his framework as: Long vs. short term orientation. A society's "time horizon," or the importance attached to the future versus the past and present. In long term oriented societies, people value actions and attitudes that affect the future: persistence/perseverance, thrift, and shame. In short term oriented societies, people value actions and attitudes that are affected by the past or the present: normative statements, immediate stability, protecting one's own face, respect for tradition, and reciprocation of greetings, favors, and gifts.

Chapter 4

Note 1

Statistic methods

Both descriptive and inferential statistic methods were used for data analysis. Descriptive analyses were performed on all items of the questionnaire. Other statistical procedures used included Cronbach's alpha test, factor analysis, multiple regression, and mediation test. Since five-category variables are ok to use ML estimation (Kline, 2010), all categorical variables except for those having five categories each were dummy coded for further regression and mediation analysis, with the largest value in each categorical variable as the reference group.

Usable Response Rate

Altogether 2,260 teachers from 12 experimental school districts across China participated in this survey. Copies of the survey were sent to a contact person in each district who then distributed them to the individual teachers. 87 copies of returned questionnaires were deemed to be unusable due to more than 5% incomplete responses, thus, they were excluded from the analysis. This yielded the final usable total of 2,173, representing a usable response rate of 96.15%.

According to Steven (2009), the adequacy of a sufficient sample size can be calculated by the criterion of 15 subjects times the number of variables, suggesting that the total number of subjects would be acceptable if it exceeded 750 ($15 \times 50 = 750$) for this research. Therefore, the 2173 responses obtained were more than sufficient to support the proposed analysis.

Missing data strategy

Two strategies were used to deal with the missing data: 1) delete questionnaires with more than 5% incomplete or inadequate responses. Inadequate responses were those with either

meaningless or ambiguous responses. For instance, there were only two choices for gender: 1 for male and 2 for female, but some respondents wrote 3, which was equivalent to a non-choice; and 2) keep all those with fewer non-responded items and marked the missing data with a dash sign (“-”). All missing data totaled to 359, yielding an average of about 7 for each question item. Since the missing data were extremely small in contrast with the large sample size, they were ignored in data analysis; 3) for question items #4, #5, and #6 asking information about school types in terms of geographic location, financial support, and urban-rural distinction, respondents wrote specific answers which belonged to none of the prescriptive categories due to the complex nature of school types. And these answers were recoded as a) “4” indicating any other type different from the forced choices for Question #4, b) “3” indicating predominantly public-funded schools, and “4” indicating predominantly private-funded schools for Question #5, and c) “3” indicating any other category falling out of the forced choices for Question #6. There were a few other cases in which inadequate or invalid responses were kept as an independent category when they had a less than 5% share of the total responses for one questionnaire.

Note 2

The first part of the questionnaire contained 15 items on NEE teachers’ demographic and other personal background. All variables fell into four categories: 1) gender and age; 2) levels and types of school; 3) educational background, teaching experience, and ranking; and 4) participation of New Education Experiment.

Note 3

The variable of “gender” was recoded with “female” being the reference group to run the next step of analysis, while the variable of “age” was not because it had five values.

Note 4

To run the next step's analysis, all the variables were dummy coded, and the reference group for each of them was elementary school, east of China, public school, and urban school.

Note 5

Teachers from private schools (n=101, 4.6%), predominantly public-funded schools (n=21, 1.0%), and predominantly private-funded schools (n=7, 0.3%) totaled to 129.

Note 6

Two variables (first degree/diploma, highest degree/diploma) were used to measure teachers' education background, four (years of teaching experience, professional title, subject, and colleague evaluation) measuring their teaching experience and ranking. Since most of the variables in this area had five values each or were non-categorical, only "years of teaching" and "teaching subject" were recoded for further analysis with the reference group being "more than ten years" for the former, and "Chinese" for the latter.

Note 7

The independent variables included in this area were years of NEE involvement, times of NEE conference participation, and times of NEE training participation. Since "times of NEE conference participation" and "times of NEE training participation" both reflected participation level, the researcher recoded them as one variable by summing their values and then averaging them for running further analysis of regression and mediation.

Note 8

The 18 items examining teachers' view of the model were: #16, 25, 28, 30, 31, 32, 33, 34, 37, 38, 40, 43, 44, 45, 46, 47, 48, and 50. They covered areas of 1) perceived reasons for NEE development (#28, 30, 31, 40, 48); 2) teachers' exposure to NEE (#16, 25); 3) effectiveness of NEE sub-projects and overall project (#32, 43, 44, 46, 50); 4) effects on students (#34, 37), and 5) negative view of the model (#33, 38, 45, 47).

Note 9

Variables #33, 34, and 37 examined teachers' perception of the effects of NEE on students. Since Item 33 was negative in connotation and categorized into Factor 2 in factor analysis, it was excluded from this sector.

Note 10

Four variables (#33, 38, 45, 47) were used to evaluate teachers' view concerning the problems of the NEE model.

Note 11

The 17 items were: #17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 29, 35, 36, 39, 41, 42, and 49. They covered a variety of efficacy ranging from self-efficacy (#17, 20, 21, 23, 24, 36), collective efficacy (#27, 29, 35), collaborative efficacy (#26, 42), reform alignment efficacy (#22, 39, 41), to efficacy doubts (#18, 19, 49). While the first four groups of items tested teachers' efficacy belief, the last group tested teachers' efficacy doubts, or teachers' negative view of comprehensive efficacy.

Note 12

Six variables examined teachers' belief of self-efficacy, and they were: #17, 20, 21, 23, 24, and 36.

Note 13

The assumptions examined included: linearity; normally distributed errors with a mean of 0 and a constant variance; independence of errors, and no multicollinearity (Garson, 2010). According to the testing results, the predicting variables were not a linear combination of other independent variables. Therefore, multicollinearity was tested by using variance inflation factors (VIF) for the independent variables. Since all VIFs were less than 10, the analysis was robust to multicollinearity issue. In other words, there were no problems of multicollinearity among the independent variables.

Note 14

Due to the fact that the variety of independent variables to be tested were too many, and predictor significance needed to be judged for model parsimony, an analysis of backward stepwise multiple regression was conducted to measure how the individual teacher background and participation in NEE predicted the way teachers viewed the NEE model. The first step in this process was to dummy code all the categorical variables, leaving the largest value in each categorical variable as the reference group. The second step was to enter all the variables for analysis. And the third step was to exclude the insignificant variables one after another by using backward stepwise regression method. As for the dummy coded categorical variables, if only one category was significant, the researcher added the reference group into analysis. None of the reference group was significant in predicting TVM or TVCE.

Note 15

The six variables regarding teacher background were: school level_ junior high, school location_ midland schools, school distinction_ rural schools, teaching subject_ English, teaching experience_ five years or less, and professional title. And the two variables regarding NEE participation were years of NEE participation, and level of NEE participation,

Note 16

The six variables were: school level_ junior high, school distinction_ suburban schools, teaching subject_ math, school location_ eastern schools, teaching experience_ ten years or above, and level of NEE participation.

Note 17

5000 replications were selected to compute bootstrap standard errors and confidence intervals.

Note 18

The value of this variable *teaching experience_ ten years or above* dropped from .079 to .057 and its significant level dropped from $p < .05$ to non-significance when positive TVM was controlled, which seemed to suggest the existence of a possible mediating effect. However, it violated Condition 2 (i. e., The regression of the mediator on the treatment is significant) because it was not a significant predictor of positive TVM. Consequently, it was excluded from further mediation test.

Chapter 5

Note 1

Stone Soup is an old folk story in which hungry strangers persuade local people of a town to give them food. It is usually told as a lesson in cooperation, especially amid scarcity. The story goes in different versions, and below is one of them:

Some travelers come to a village, carrying nothing more than an empty cooking pot. Upon their arrival, the villagers are unwilling to share any of their food stores with the hungry travelers. The travelers fill the pot with water, drop a large stone in it, and place it over a fire in the village square. One of the villagers becomes curious and asks what they are doing. The travelers answer that they are making “stone soup”, which tastes wonderful, although it still needs a little bit of garnish to improve the flavor, which they are missing. The villager does not mind parting with just a little bit of carrot to help them out, so it gets added to the soup. Another villager walks by, inquiring about the pot, and the travelers again mention their stone soup which has not reached its full potential yet. The villager hands them a little bit of seasoning to help them out. More and more villagers walk by, each adding another ingredient. Finally, a delicious and nourishing pot of soup is enjoyed by all.

Source: http://en.wikipedia.org/wiki/Stone_soup

Note 2

The “New Education Reform” here has nothing to do with Zhu Yongxin’s New Education. It is but a general term referring to different kinds of educational reforms implemented in China since 1980s.

Appendices

Appendix 1

Questionnaire for NEE Teacher Survey (English Version)

Dear teachers,

Funded by the Ford Foundation, we are conducting a survey on the outcomes and impact of the New Education Experiment (NEE) being implemented in your school. The survey is designed to help each participating individual and institution to understand how participating teachers view the reform model, especially their view of its particular effect on themselves as efficacious teachers. It aims to evaluate the effectiveness of NEE in teacher development, and provide genuine, objective data for improvement of the NEE model.

This survey consists of two sections ---15 items for personal information and 35 items for data in the content area. It may take you about 20-25 minutes to complete. When you participate in this survey, your identity will always remain confidential, and your personal data are used only for the categorization's sake. All individual responses will be held strictly confidential.

We need your assistance. Your participation in this survey will be greatly appreciated. However, participation is completely voluntary. Refusal to participate will not have any negative effect on you.

For each of the 50 statements, please darken in another standardized sheet with a #5 pencil the circle that best represents your opinion about the statement.

We thank you for your cooperation. Your thoughtful responses to the questions in the survey will help to improve NEE and k12 education reform in China at large.

Section I. Personal Background Information

For each of the statements below, please circle the letter that best describes your status quo

1. Your gender:
 - a) Female
 - b) Male
2. Your age:
 - a) 30 or below
 - b) 31-35
 - c) 36-40
 - d) 41-45
 - e) above 45
3. The school in which you are teaching now:
 - a) Elementary school
 - b) Junior high
 - c) Senior high
 - d) Vocational school

4. You are from the school in:
 - a) East of China
 - b) Midland of China
 - c) West of China
5. Type of school in which you are working in terms of financial support:
 - a) Public school
 - b) Private school
 - c) Predominantly public-funded school
 - d) Predominantly private-funded school
6. Type of school in which you are working in terms of urban-rural location:
 - a) Urban school
 - b) Rural school
 - c) Suburban school
7. Years of teaching experience:
 - a) Five years or below
 - b) Six to ten years
 - c) More than ten years
8. First degree/diploma you earned upon entering teaching occupation:
 - a) Two-year college diploma
 - b) Three-year college diploma
 - c) BA/BS
 - d) MA/MS
 - e) Ph. D.
9. Highest degree/diploma earned:
 - a) Three-year college diploma
 - b) BA/BS
 - c) MA/MS
 - d) Ph. D.
10. Your teaching rank:
 - a) Below Grade 2
 - b) Grade 2
 - c) Grade 1
 - d) Senior
 - e) Special-rank teacher
11. Years you have been involved in NEE:
 - a) Less than one year
 - b) 1-2 years
 - c) 2-5 years
 - d) More than 5 years
12. Subject you are teaching:

- a) Chinese
 - b) Math
 - c) English
 - d) Others (please specify)_____
13. Times for you to attend NEE annual conference (including 2010 conference):
- a) None
 - b) Once
 - c) Twice
 - d) Three times
 - e) Four times and more
14. NEE training session you attended:
- a) None
 - b) Once
 - c) Twice
 - d) Three times and more
15. Overall, you are ranked among your colleagues in your school as a/ an:
- a) Top-level teacher
 - b) Not top but above average
 - c) Average teacher
 - d) Below average

Section II NEE content area

For each statement below, please circle the letter that best represents your opinion about the statement (A=Strongly Disagree, B=Disagree, C=Unsure, D=Agree, E=Strongly Agree)

	SD	D	U	A	SA
16. Through NEE, teachers gained more exposure to new education theories and teaching approaches.	A	B	C	D	E
17. Compared to before I started the NEE program, I have a greater amount of confidence in teaching well.	A	B	C	D	E
18. I feel more tired and unhappy than before because NEE increases rather than decreases teachers' workloads.	A	B	C	D	E
19. NEE distracts my attention. I feel somewhat confused about what the teaching focus is now.	A	B	C	D	E
20. I tend to devote more of my private time to teaching since I participated in NEE.	A	B	C	D	E

21. I am more interested in teaching and more likely to take it as my lifelong career/cause. A B C D E
22. Given a choice, I would choose to go on with NEE. A B C D E
23. I become more and more aware of the importance of professional development and participate in relevant activities more often. A B C D E
24. Generally I read and think more, and have more presentations and publications ever since. A B C D E
25. As NEE teachers, we have received sufficient and effective training and information from NEE to fulfill the new role. A B C D E
26. Personally, I am not interested in NEE, but our leaders require me to do it. A B C D E
27. I feel that members of the administration at my institution support this NEE program. A B C D E
28. One of the primary reasons for the rapid growth of NEE is the mode of experts' leadership, voluntary participation, and administrative promotion. A B C D E
29. The faculty members at my institution are committed to reforming their courses along the NEE principle and guidelines. A B C D E
30. Overall, I think NEE facilitates to enhance the education quality in our school. A B C D E
31. Compared to other reform models, NEE is the one that is best in line with my education ideal. A B C D E
32. Of the six actions NEE advocates, the first action "building a book-enticing campus" is most effectively implemented in our school. A B C D E
33. Through NEE, the students' reading and writing abilities are improved but there is little substantial change in their comprehensive academic performance. A B C D E
34. Students are more self-motivated and autonomous in A B C D E

learning now.

- | | | | | | |
|--|---|---|---|---|---|
| 35. Both teachers and students feel happier with their educational life than before and more willing to take challenges in teaching and learning. | A | B | C | D | E |
| 36. I used to regard teaching kids as a boring job but now I feel teaching is both interesting and meaningful. | A | B | C | D | E |
| 37. Through NEE, both the scores on standardized tests and all-round qualities of students are improved. | A | B | C | D | E |
| 38. Like any education reform in the past, NEE will come and go without making much substantial change. | A | B | C | D | E |
| 39. I firmly believe in NEE's ethos: "No pains, no gains"; "Only action leads to gains"; "You'll meet with celebrations sooner or later as long as you are always on the way". | A | B | C | D | E |
| 40. The key to NEE's successful popularization and the reason that teachers embrace it is that it respects teachers' feelings and emotions. | A | B | C | D | E |
| 41. Education is a job that requires teachers' emotional engagement and private commitment rather than passive manipulation. | A | B | C | D | E |
| 42. I believe I can actively engage myself in communicating and sharing ideas with the members in the national NEE community so as to align with NEE's latest development. | A | B | C | D | E |
| 43. The most beneficial activity for NEE teachers' growth is "reading a book together". | A | B | C | D | E |
| 44. The most successful project of NEE is the Children Curriculum. | A | B | C | D | E |
| 45. NEE focuses too much on humanistic courses while neglecting subjects like math and science. | A | B | C | D | E |
| 46. NEE's "Three Professionalizations" model gives the impetus to teachers' professional development. | A | B | C | D | E |

- | | | | | | |
|---|---|---|---|---|---|
| 47. NEE is lack of a systematic monitoring and evaluation mechanism. | A | B | C | D | E |
| 48. The biggest challenge to implement NEE is to integrate NEE curriculum with the state curriculum. | A | B | C | D | E |
| 49. The more I get engaged in NEE, the more disappointed and lack of the initial passion I feel. | A | B | C | D | E |
| 50. Overall, I believe the goal of NEE “helping the NEE community members lead a happy and integrated educational life” is basically fulfilled. | A | B | C | D | E |

SD=Strongly Disagree, D=Disagree, U=Unsure, A=Agree, SA=Strongly Agree.

Appendix 2

Questionnaire for NEE teacher Survey (Chinese Version)

新教育试验教师调查问卷

亲爱的老师：

您好！

受美国福特基金会资助，我们拟对贵校正在实施的新教育试验的成效与影响进行调研。本次调研旨在帮助新教育改革的参与人员和试验学校了解该试验教师对新教育改革的看法，尤其是教师如何看待新教育对其自身综合效能方面所产生的作用与影响。其目的在于评估新教育试验在教师发展方面的成效，同时为改进新教育试验提供客观、真实的数据依据。

本调查问卷包括两部分——个人信息部分 15 题，试验内容类数据部分 35 题。预计需要 20-25 分钟才能完成。我们将对参研者的身份永保机密，您的个人信息仅供分类之便。所有个人答案都将严格遵守保密原则。

我们需要您的帮助，同时，我们竭诚感谢您的参与。但您的参与纯属自愿，拒绝参与不会对您有任何负面影响。

请将 50 道题的每一道题均用 5 号铅笔在另外配备的答卷纸上勾出您认为最能代表您观点的答案。

感谢您的合作。您对所有问题的认真回答将不仅有助于改进新教育试验，而且进而将有助于中国基础教育的宏观改革。

第一部分：个人信息

请将下面最能描述您目前身份的表述的字母勾出

1. 您的性别:

a) 女

b) 男

2. 您的年龄:

a) 30 岁或以下

b) 31-35

c) 36-40

d) 41-45

e) 45 岁以上

3. 您现在任教的学校是:

a) 小学

b) 初中

c) 高中

d) 职业中学

4. 您来自_____的学校:

a) 中国东部

b) 中国中部

c) 中国西部

5) 从财政支持来看, 您任教的学校类型是:

a) 公立学校

b) 私立学校

c) 公办民助学校

d) 民办公助学校

6. 从城乡地理位置看，您任教的学校类型是：

a) 城区学校

b) 农村学校

c) 郊区（城乡结合部）学校

7. 您的教龄为：

a) 5年或以下

b) 6-10年

c) 10年以上

8. 您涉入教职时的第一学历/学位为：

a) 中专

b) 大专

c) 本科

d) 硕士

e) 博士

9. 您所获得的最高学历/学位为：

a) 大专

b) 本科

c) 硕士

d) 博士

10. 您的职称为：

a) 二级以下

b) 二级

c) 一级

d) 高级

e) 特级

11. 您参与新教育试验的年数为：

a) 1 年以下

b) 1-2 年

c) 2-5 年

d) 5 年以上

12. 您任教的科目主要是：

a) 语文

b) 数学

c) 英语

d) 其它（请注明）_____

13. 您参加的新教育年会次数（含 2010 年年会）为：

a) 一次也没有

b) 一次

c) 两次

d) 三次

e) 四次或以上

14. 您参加的新教育培训次数为：

a) 一次也没有

b) 一次

c) 两次

d) 三次或以上

15. 总体而言，您的同事认为您是该校中的：

a) 优秀教师

b) 中上级教师

c) 水平一般的教师

d) 低于一般水平的教师

第二部分：新教育试验内容方面信息

请将最能代表您个人观点的表述的字母勾出（A=完全不同意，B=不同意，C=不确定，D=同意，E=完全同意）

	完全 不同 意	不同 意	不确 定	完全 同意	完全 同意
16.通过新教育试验，老师们获得了更多的学习新的教育理论和教学方法的机会。	A	B	C	D	E
17.与参加新教育试验之前相比，我对搞好教学更有信心。	A	B	C	D	E
18.我觉得比以前更辛苦更不快乐——因为新教育试验是增加了而不是减轻了教师的工作负担。	A	B	C	D	E
19.新教育试验分散了我的注意力。我现在对什么是教学重点感到有些困惑。	A	B	C	D	E
20.自从参加新教育试验以来，我倾向于将更多的私人时间投入教学工作。	A	B	C	D	E
21.我对教育教学更感兴趣，而且更有可能把教育当作我的终生职业/事业。	A	B	C	D	E
22.如果给我选择的话，我会选择继续从事新教育试验。	A	B	C	D	E

- 23.我越来越意识到专业发展的重要性，参加相关活动的次数也更频繁了。 A B C D E
- 24.参与新教育试验之后我阅读得更多，也思考得更多，口头交流和发表文章的频数也增多了。 A B C D E
- 25.作为新教育试验教师，大家获得了新教育提供的足够的有效训练和信息以履行新的教师职能。 A B C D E
- 26.我个人对新教育并没有什么兴趣，参加新教育试验不过是长官意志而已。 A B C D E
- 27.我觉得我校的行政人员支持新教育试验项目。 A B C D E
- 28.专家引领、自愿参与和行政推动是新教育队伍不断发展壮大的主要原因之一。 A B C D E
- 29.我校教师致力于按新教育试验的原则和指南来改革他们的课程。 A B C D E
- 30.总而言之，我认为新教育试验有助于我校教学质量的提高。 A B C D E
- 31.与其它教育改革模式相比而言，新教育试验是与我的教育理想最相吻合的改革模式。 A B C D E
- 32.在新教育试验倡导的六大行动中，第一大行动“营造书香校园”在我校实施得最有成效。 A B C D E
- 33.通过新教育试验，学生的读写能力提高了，但综合学业成绩没有实质性的变化。 A B C D E
- 34.现在学生的学习动机和学习自主性都增强了。 A B C D E
- 35.师生都觉得他们的教育生活比以前更幸福，而且更愿意接受来自教与学两方面的挑战。 A B C D E
- 36.我过去常认为教孩子是项很枯燥的工作，但现在我觉得教学既有趣味又有意义。 A B C D E
- 37.通过新教育试验，学生的考试成绩和综合素质都有 A B C D E

提高。

38.我认为，就像以往的任何教育改革一样，新教育试验也不过是匆匆过客，不会带来多大的实质性变化。

A B C D E

39.我坚信新教育试验的以下观点：“只要行动就有收获”，“只要你上路，总会遇到庆典”。

A B C D E

40.新教育试验成功推广和受广大教师青睐的秘诀是它尊重教师的感受和情感。

A B C D E

41.教育教学工作要求教师的积极的情感投入和个人奉献，而不是被动应付。

A B C D E

42.我认为自己可以主动融入全国新教育试验社区的交流与经验分享活动之中，以紧跟新教育试验的最新发展步伐。

A B C D E

43.最有利于新教育试验教师成长的活动是“共读一本书”。

A B C D E

44.新教育做得最成功的项目是儿童课程。

A B C D E

45.新教育太过偏重人文学科，对数学等理科课程的重视程度不够。

A B C D E

46.新教育教师“三专”发展模式对教师专业发展起了很大推动作用。

A B C D E

47.新教育缺乏比较系统的监控和评价机制。

A B C D E

48.实施新教育试验的最大挑战是如何将新教育试验课程整合到国家课程之中去。

A B C D E

49.我越深入新教育试验，就越感到失望和缺乏原有的激情。

A B C D E

50.总的说来，我认为新教育试验的目标“帮助新教育共同体成员过一种幸福完整的教育生活”基本实现了。

A B C D E

新教育实验教师问卷调查答卷纸

(Answer Sheet for the NEE Teacher Survey)

题号	A	B	C	D	E
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Question No.

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Appendix 3

Data collection matrix

What data do I need?	Why do I need to know this?	What method do I use to get the data?	Where / from whom do I find the data from?	Whom do I contact for access?	Timeline for data collection
General and specific data for NEE schools	To explore the feasibility and significance of the research	1) NEE literature and file reading 2) Site visit to some schools and interviews	1) NEE website, books, papers, documents etc. 2) Schools	Prof. Zhu, the NEE initiator	1) Sep.- Dec., 2009 2) Dec. 2009
General data of teachers' views on the NEE program	To know the teachers' perception of NEE; to assess the impact of NEE on teachers' efficacy beliefs	Survey with a questionnaire	Teachers across different school districts	Du Tao, Secretary, and Dr. Xu Xinhai, Research Head of the NEE Institute	July - Sep., 2010

Specific data concerning teacher efficacy change in one school, including attitudes, behavior, capability, personal fulfillment, performance.	To discover and interpret why and how the changes, positive and negative, occur; to seek the manifestation of correlated, causal or contingent relationships between NEE and the changes.	Ethnographic method, including non-participant observation, interviews, focus groups, daily interaction and immersion, community participation.	One particular school fitting the clearly defined research requirements and goals	Prof. Zhu, Mr. Chen Lianlin, Office Director of the NEE Institute	Sep. - Nov., 2010
Specific data concerning teacher efficacy change in other schools	Same as above	Interviews and observations, and review of teacher blogs	The NEE annual conference, their open week, their yearly report conference, available and permissible teacher blogs	Prof. Zhu, Dr. Xu Xinhai, teachers allowing me to use their blogs as research data.	Early July and late November, 2010

Appendix 4

Descriptive Information about Teacher Background

Number	Items	A N (%)	B N (%)	C N (%)	D N (%)	E N (%)	Missing N (%)
1	Gender	1641(75.5%)	529(24.3%)				3(0.1%)
2	Age	812(37.4%)	717(33%)	364(16.8%)	175(8.1%)	101(4.6%)	4(0.2%)
3	School level	1754(80.7%)	382(17.6%)	31(1.4%)	5(0.2%)		1(0.0%)
4	School location	1600(73.6%)	303(13.9%)	252(11.6%)	6(0.3%)		12(0.6%)
5	School type -Private- Public	2040(93.9%)	101(4.6%)	21(1.0%)	7(0.3%)		4(0.2%)
6	School distinction - Rural-Urban	963(44.3%)	937(43.1%)	258(11.9%)	6(0.3%)		9(0.4%)
7	Teaching experience	489(22.5%)	463(21.3%)	1209(55.6%)	4(0.2%)		8(0.4%)
8	First degree	989(45.5%)	797(36.7%)	360(16.6%)	19(0.9%)	1(0.0%)	7(0.3%)
9	Highest degree	393(18.1%)	1626(74.8%)	113(5.2%)	26(1.2%)		15(0.7%)
10	Professional title	177(8.1%)	284(13.1%)	870(40%)	824(37.9%)		18(0.8%)
11	NEE participation	426(19.6%)	549(25.3%)	868(39.9)	305(14.0%)	7(0.3%)	18(0.8%)
12	Subject	1151(53.0%)	518(23.8)	232(10.7%)	260(12.0%)		12(0.6%)
13	NEE conference participation	340(15.6%)	1282(59.0%)	302(13.9%)	101(4.6%)	148(6.8%)	0(0.0%)
14	NEE training participation	487(22.4%)	483(22.2%)	470(21.6%)	689(31.7%)		44(2.0%)

15	Colleagues evaluation	891(41.0%)	785(36.1%)	418(19.2%)	69(3.2%)	10(0.5%)
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Appendix 5

Factor analysis

Two scales, TVM and TVCE, were analyzed using principal component factor analysis to assess the structure of latent variables. Two criteria were used to determine the number of components: Kaiser’s (1960) criterion of eigenvalues greater than 1, and Cattell’s (1966) scree plot test.

TVM scale

Oblique oblimin rotation was used to identify a simple structure. The eigenvalues greater than 1 and scree plot analyses suggested retaining two factors: positive TVM and negative TVM. Initially a total of more than 44% of the variance in the totality of items in TVM was explained. Factor loadings are presented in Table 1.

Items 33, 38, 45, and 47 loaded on Factor 2, while all other items loaded on Factor 1. Factor 1 accounted for 33% of the variance and represented teachers’ positive evaluation of the NEE model or “Positive TVM.” Factor 2 accounted for 11.4% of the variance and represented teachers’ perception of the problems of the model or “Negative TVM.”

Table 1 Factor Analysis for Items on the TVM Scale

Scale Item	Factor Loading	
	1	2

Factor 1: Positive TVM

16. Through NEE, teachers gained more exposure to new education theories and teaching approaches.	0.59	0.05
25. As NEE teachers, we have received sufficient and effective training and information from NEE to fulfill the new role.	0.60	0.15
28. One of the primary reasons for the rapid growth of NEE is the mode of experts' leadership, voluntary participation, and administrative promotion.	0.64	0.05
30. Overall, I think NEE facilitates to enhance the education quality in our school.	0.74	-0.13
31. Compared to other reform models, NEE is the one that is best in line with my education ideal.	0.71	-0.04
32. Of the six actions NEE advocates, the first action "building a book-enticing campus" is most effectively implemented in our school.	0.64	0.19
34. Students are more self-motivated and autonomous in learning now.	0.68	-0.11
37. Through NEE, both the scores on standardized tests and all-round qualities of students are improved.	0.70	-0.16
40. The key to NEE's successful popularization and the reason that teachers embrace it is that it respects teachers' feelings and emotions.	0.71	-0.05
43. The most beneficial activity for NEE teachers' growth is "reading a book together".	0.60	0.10
44. The most successful project of NEE is the Children Curriculum.	0.56	0.24
46. NEE's "Three Professionalizations" model gives the impetus to teachers' professional development.	0.70	0.03
48. The biggest challenge to implement NEE is to integrate NEE curriculum with the state curriculum.	0.48	0.27
50. Overall, I believe the goal of NEE "helping the NEE community members lead a happy and integrated educational life" is basically fulfilled.	0.62	-0.13

Factor 2: Negative TVM

33. Through NEE, the students' reading and writing abilities are improved but there is little substantial change in their comprehensive academic performance.	0.03	0.62
38. Like any education reform in the past, NEE will come and go without making much substantial change.	-0.24	0.63
45. NEE focuses too much on humanistic courses while neglecting subjects like math and science.	0.08	0.73
47. NEE is lack of a systematic monitoring and evaluation mechanism.	-0.001	0.68

Note: SD=Strongly Disagree; D=Disagree; N=Not Sure; A=Agree; SA=Strongly Agree

TVCE scale

As was done with TVM previously, Oblique Oblimin rotation was used to identify the simple structure of the TVCE scale. The eigenvalues greater than 1 and scree plot analyses suggested retaining two factors: "Positive TVCE" and "Negative TVCE." Initially a total of over 50 % of the variance in the array of items in TVCE was explained. Factor loadings are presented in Table 2.

Items 18, 19, 26, and 49 loaded on Factor 2, while all other items loaded on Factor 1. Factor 1 accounted for 33% of the variance and represented teachers' beliefs in their comprehensive efficacy, or positive TVCE. Factor 2 accounted for over 17% of the variance and represented teachers' doubts in their comprehensive efficacy, or Negative TVCE.

Table 2 Factor Analysis for Items on the TVCE Scale

Scale Items	Factor Loading	
	1	2

Factor 1: Positive TVCE

17. Compared to before I started the NEE program, I have a greater amount of confidence in teaching well.	0.61	0.06
20. I tend to devote more of my private time to teaching since I participated in NEE.	0.50	-0.28
21. I am more interested in teaching and more likely to take it as my lifelong career/cause.	0.65	0.12
22. Given a choice, I would choose to go on with NEE.	0.65	0.22
23. I become more and more aware of the importance of professional development and participate in relevant activities more often.	0.68	-0.09
24. Generally I read and think more, and have more presentations and publications ever since.	0.65	0.08
27. I feel that members of the administration at my institution support this NEE program.	0.63	-0.18
29. The faculty members at my institution are committed to reforming their courses along the NEE principle and guidelines.	0.69	-0.04
35. Both teachers and students feel happier with their educational life than before and more willing to take challenges in teaching and learning.	0.60	0.22
36. I used to regard teaching kids as a boring job but now I feel teaching is both interesting and meaningful.	0.64	0.12
39. I firmly believe in NEE's ethos: "No pains, no gains"; "Only action leads to gains"; "You'll meet with celebrations sooner or later as long as you are always on the way".	0.64	-0.07
41. Education is a job that requires teachers' emotional engagement and private commitment rather than passive manipulation.	0.70	-0.13
42. I believe I can actively engage myself in communicating and sharing ideas with the members in the NEE community so as to align with NEE's latest development.	0.62	0.04

Factor 2: Negative TVCE

18. I feel more tired and unhappy than before because NEE increases rather than decreases teachers' workloads.	0.02	0.75
19. NEE distracts my attention. I feel somewhat confused about what the teaching focus is now.	-0.02	0.70
26. Personally, I am not interested in NEE, but our leaders require me to do it.	-0.07	0.69
49. The more I get engaged in NEE, the more disappointed and lack of the initial passion I feel.	-0.05	0.55

Note: SD=Strongly Disagree; D=Disagree; N=Not Sure; A=Agree; SA=Strongly Agree

Appendix 6

Cronbach's Alpha Test

Cronbach's alpha for the specific items in both scales was tested. The Cronbach's alpha coefficient for the 18-item TVM measure was .835, while that for the 17-item TVCE measure was .867. The results of Cronbach's alpha test suggested that the internal consistency within each construct, that is, teachers' view of the model or view of their comprehensive efficacy, was above the acceptable threshold. Cronbach's alpha coefficients for the study can be found in the table below.

Instrument Reliability

Variables	Number of items	Cronbach's alpha
TVM	18	0.835
TVCE	17	0.867

TVM includes 18 items: #16, 25, 28, 30, 31, 32, 33, 34, 37, 38, 40, 43, 44, 45, 46, 47, 48, and 50.

TVCE includes 17 items: #17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 29, 35, 36, 39, 41, 42, and 49.

Appendix 7

Descriptive Information for Items on TVM

Items	SD	D	N	A	SA	Missing
	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)
16. Through NEE, teachers gained more exposure to new education theories and teaching approaches.	110(5.0)	115(5.3)	287(13.2)	1041(47.9)	612(28.2)	8(0.4)
25. As NEE teachers, we have received sufficient and effective training and information from NEE to fulfill the new role.	85(3.9)	268(12.3)	418(19.2)	1020(46.9)	379(17.4)	3(0.1)
28. One of the primary reasons for the rapid growth of NEE is the mode of experts' leadership, voluntary participation, and administrative promotion.	61(2.8)	89(4.1)	187(8.6)	1169(53.8)	665(30.6)	2(0.1)
30. Overall, I think NEE facilitates to enhance the education quality in our school.	77(3.5)	100(4.6)	413(19.0)	1018(46.8)	559(25.7)	6(0.3)
31. Compared to other reform models, NEE is the one that is best in line with my education ideal.	76(3.5)	177(8.1)	642(29.5)	921(42.4)	356(16.4)	1(0.0)
32. Of the six actions NEE advocates, the first action "building a book-enticing campus" is most effectively implemented in our school.	80(3.7)	147(6.8)	316(14.5)	1016(46.8)	610(28.1)	4(0.2)
33. Through NEE, the students' reading and writing abilities are improved but there is little substantial change in their comprehensive academic performance.	116(5.3)	505(23.2)	627(28.9)	669(30.8)	252(11.6)	4(0.2)
34. Students are more self-motivated	78(3.6)	258(11.9)	658(30.3)	861(39.6)	294(13.5)	24(1.1)

and autonomous in learning now.

37. Through NEE, both the scores on standardized tests and all-round qualities of students are improved.	79(3.6)	237(10.9)	657(30.2)	914(42.1)	279(12.8)	7(0.3)
38. Like any education reform in the past, NEE will come and go without making much substantial change.	261(12.0)	773(35.6)	562(25.9)	411(18.9)	162(7.5)	4(0.2)
40. The key to NEE's successful popularization and the reason that teachers embrace it is that it respects teachers' feelings and emotions.	72(3.3)	165(7.6)	406(18.7)	1080(49.7)	442(20.3)	8(0.4)
43. The most beneficial activity for NEE teachers' growth is "reading a book together".	65(3.0)	194(8.9)	525(24.2)	1048(48.2)	335(15.4)	6(0.3)
44. The most successful project of NEE is the Children Curriculum.	67(3.1)	164(7.5)	636(29.3)	953(43.9)	351(16.2)	2(0.1)
45. NEE focuses too much on humanistic courses while neglecting subjects like math and science.	142(6.5)	468(21.5)	542(24.9)	739(34.0)	279(12.8)	3(0.1)
46. NEE's "Three Professionalizations" model gives the impetus to teachers' professional development.	53(2.4)	144(6.6)	498(22.9)	1148(52.8)	325(15.0)	5(0.2)
47. NEE is lack of a systematic monitoring and evaluation mechanism.	113(5.2)	493(22.7)	600(27.6)	763(35.1)	200(9.2)	4(0.2)
48. The biggest challenge to implement NEE is to integrate NEE curriculum with the state curriculum.	63(2.9)	170(7.8)	362(16.7)	1150(52.9)	424(19.5)	4(0.2)
50. Overall, I believe the goal of NEE "helping the NEE community members lead a happy and integrated educational life" is basically fulfilled.	111(5.1)	250(11.5)	576(26.5)	955(43.9)	276(12.7)	5(0.2)

Note: SD=Strongly Disagree; D=Disagree; N=Not Sure; A=Agree; SA=Strongly Agree

Appendix 8

Descriptive Information for Items on TVCE

Items	SD	D	N	A	SA	Missing
	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)
17. Compared to before I started the NEE program, I have the more amount of confidence in teaching well.	82(3.8)	143(6.6)	406(18.7)	1042(48.0)	496(22.8)	4(0.2%)
18. I feel more tired and unhappy than before because NEE increases rather than decreases teachers' workload.	276(12.7)	797(36.7)	451(20.8)	409(18.8)	235(10.8)	5(0.2)
19. NEE distracts my attention. I feel somewhat confused about what the teaching focus is now.	272(12.5)	930(42.8)	429(19.7)	405(18.6)	130(6.0)	7(0.3)
20. I tend to devote more of my private time to teaching since I participated in NEE.	140(6.4)	346(15.9)	440(20.2)	884(40.7)	357(16.4)	6(0.3)
21. I am more interested in teaching and more likely to take it as my lifelong career/cause.	87(4.0)	136(6.3)	409(18.8)	999(46.0)	538(24.8)	4(0.2)
22. Given a choice, I would choose to go on with NEE.	84(3.9)	214(9.8)	519(23.9)	848(39.0)	504(23.2)	4(0.2)
23. I become more and more aware of the importance of professional development and participate in relevant activities more often.	87(4.0)	116(5.3)	281(12.9)	1117(51.4)	567(26.1)	5(0.2)
24. Generally I read and think more, and have more presentations and publications ever since.	69(3.2)	159(7.3)	416(19.1)	1082(49.8)	443(20.4)	4(0.2)
26. Personally, I am not interested in NEE, but our leaders require me to do it	368(16.9)	919(42.3)	338(15.6)	394(18.1)	144(6.6)	10(0.5)
27. I feel that members of the administration at my institution support this NEE program.	88(4.0)	156(7.2)	219(10.1)	996(45.8)	706(32.5)	8(0.4)
29. The faculty members at my institution are committed to reforming their courses along the NEE principle and guidelines.	76(3.5)	128(5.9)	453(20.8)	1095(50.4)	419(19.3)	2(0.1)

35. Both teachers and students feel happier with their educational life than before and more willing to take challenges in teaching and learning.	103(4.7)	256(11.8)	611(28.1)	878(40.4)	318(14.6)	7(0.3)
36. I used to regard teaching kids as a boring job but now I feel teaching is both interesting and meaningful.	75(3.5)	255(11.7)	439(20.2)	1068(49.1)	327(15.0)	9(0.4)
39. I firmly believe in NEE's ethos: "No pains, no gains"; "Only action leads to gains"; "You'll meet with celebrations sooner or later as long as you are always on the way".	59(2.7)	117(5.4)	211(9.7)	1142(52.6)	637(29.3)	7(0.3)
41. Education is a job that requires teachers' emotional engagement and private commitment rather than passive manipulation.	52(2.4)	95(4.4)	192(8.8)	1277(58.8)	553(25.4)	4(0.2)
42. I believe I can actively engage myself in communicating and sharing ideas with the members in the NEE community so as to align with NEE's latest development.	75(3.5)	272(12.5)	528(24.3)	993(45.7)	300(13.8)	5(0.2)
49. The more I get engaged in NEE, the more disappointed and lack of the initial passion I feel.	343(15.8)	884(40.7)	500(23.0)	354(16.3)	89(4.1)	3(0.1)

Note: SD=Strongly Disagree; D=Disagree; N=Not Sure; A=Agree; SA=Strongly Agree

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