Chinese teachers' self-reported beliefs and practices related to majority and minority students in Xinjiang Uygur Autonomous Region

Hongyan Z. Newton

A dissertation
submitted in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy
University of Washington

2011

Program Authorized to Offer Degree:

College of Education

© Copyright 2011

University of Washington
Graduate School

This is to certify that I have examined this copy of a doctoral dissertation by

Hongyan Z. Newton

and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by the final
examining committee have been made.

Chair of the Supervisory Committee:

_____
Kenneth M. Zeichner

Reading Committee:

_____
Kenneth M. Zeichner

_____
William G. McDiarmid

_____
Manka M. Varghese

Date:_____

In presenting this dissertation in partial fulfillment of the requirements for the doctoral degree at the University of Washington, I agree that the Library shall make its copies freely available for inspection. I further agree that extensive copying of the dissertation is allowable only for scholarly purposes, consistent with “fair use” as prescribed in the U.S. Copyright Law. Requests for copying or reproduction of this dissertation may be referred to ProQuest Information and Learning, 300 North Zeeb Road, Ann Arbor, MI 48106-1346, 1-800-521-0600, to whom the author has granted “the right to reproduce and sell (a) copies of the manuscript in microform and/or (b) printed copies of the manuscript made from microform.”

Signature_____

Date_____

University of Washington

Abstract

Chinese teachers' self-reported beliefs and practices related to majority and minority students in Xinjiang Uygur Autonomous Region

Hongyan Z. Newton

Chair of the Supervisory Committee:

Dr. Kenneth M. Zeichner

College of Education

This study begins to address the questions of what beliefs Chinese teachers hold about teaching and learning, about different student groups, and how these beliefs and expectations mediate their daily instructional practices. A triangulated mixed methods design was used for this study. This is a type of design in which different but complementary data was collected on the same topic. Guided by aspects of Cultural-Historical Activity Theory (CHAT), research instruments were designed and applied. CHAT connects Chinese middle school teachers' beliefs about teaching and learning, and hence their instructional practices, to cultural, political, organizational and personal frame factors related to the local schooling system. Research data was collected in three multicultural and multilingual middle schools in the city of Urumqi in northwest China. A 66-item questionnaire was completed by teachers in the three schools. Concurrent with the survey, qualitative data including interviews, observation field-notes, and documents and other artifacts was also collected. The concurrent collection and analysis of both quantitative and qualitative data strengthened the research, added rigor to the study and its

findings, and enabled comparison of qualitative and quantitative findings, thus improving validation.

The study's findings followed four major themes: 1) The beliefs of the Chinese middle school teachers in the sample were shaped and reshaped by cultural values and historical sediments; 2) Teachers' beliefs were mediated by their various personal background; 3) Teachers' beliefs were influenced by political and organizational mandates, policies, regulations and rituals; 4) Teachers' beliefs influenced their choices of instructional practices.

This study makes several contributions to the field. The major contribution is that it offers evidence that Cultural Historical Activity Theory (CHAT) is a powerful lens for exploring and understanding the educational activities in different cultural systems. CHAT fruitfully enables the researcher to move from an analysis of individual actions such as those of teachers' and students,' to the analysis of their activities' broader cultural and political contexts, and back to the individuals again. A second contribution of the study revealed that in the local activity system, political and organizational frame factors sometimes suppressed personal frame factors, and sometimes even cultural frame factors. The study suggests that understanding correlations between teachers' beliefs and their associated teaching practices might have the potential to significantly affect teacher preparation and professional development.

Certainly this study has limitations, most of which are related to where, when and how data was collected. One area of concern pertains to the limits produced by local political and organizational environment. Another crucial limitation has to do with my dualistic roles as both a native Chinese educator and a U.S. researcher. To enhance and extend our understanding of the relationship between teachers' beliefs and their associated instructional practices, I recommend a longitudinal study with sampling of more minority groups than were covered here, as well as sampling and evaluation of student subjects.

Table of Contents

List of Figures

List of Tables

Acknowledgement

Although words can do little to express my gratitude for the guidance, encouragement and support that many people have offered to make this work possible, I nonetheless offer my sincere and heartfelt appreciation here.

My thanks and appreciation, first and foremost, go to my adviser, Kenneth Zeichner and my dissertation Committee, Bill McDiarmid, Manka Varghese, and William Lavely for their commitments to my success and holding this work to a high standard. I appreciate their time and patience, thoughtful and careful listening, and high expectations throughout my doctoral studies. Much of what they have taught me extends far beyond the pages of this study and has helped me as an educator, a scholar and a person. Professor Varghese sets a wonderful example of how women can succeed both at home and at work. Professor Lavely guided me with his priceless expertise on doing research in China. I would also like to thank Tom Stritikus and Min Li. Tom provided valuable guidance during the transition from Bill to Ken when Bill took a new job at UNC in Chapel Hill. Also, my quantitative work would have been immensely more difficult without the knowledgeable advice of Min Li and her students.

More needs to be said about my two advisers – Bill and Ken. I cannot imagine taking this trip without their dedicated and tireless guidance and support. I immigrated to America in 2006, leaving my family, friends, colleagues, and all social relationships behind me in China. My husband and I both thought that I should go back to school where I would more quickly learn about my new country, and more importantly, where I could make friends and establish my own social network. Luckily, Bill agreed to take me as his advisee. He is interested in China, and he knows Chinese people, making me feel safe to talk to him. Making friends with classmates did create some relatedness for me socially with peers, but the relatedness created by Bill contributed more to my academic learning. That is, he instilled within me a powerful sense of personal connection to academe. He offered me a Research Assistant position in the Teachers for New Era Project, thus creating an opportunity for me to learn broadly how the, until then unfamiliar, U.S. educational system works, including teacher education programs, School-University partnerships, etc. Scaffolding from my knowledge of the Chinese educational system and his knowledge of what I should know about education in America, Bill successfully balanced challenge and support, inspiring my interest and curiosity, mediating my frustration, providing encouragement, and advocating risk taking. He helped me lay a solid foundation of understanding of American education.

Like Bill, Ken was similarly generous with his time, wisdom, guidance and encouragement. He took me under his wing at my general exam, and from that point forward continually pushed me really hard to think critically and deeply. He helped me develop an enduring curiosity about the issues and debates in teacher education. Most importantly, he valued my knowledge of Chinese education and offered me several positions as a Research Assistant to work closely with him on teaching and teacher education studies, both domestic and global. These opportunities made it possible for me to grow as a researcher under his constant guidance and influence. He took me to a higher level, and trained me as a scholar.

I also express my sincere appreciation to my mentors Bret Norris, Mary Clevenger-Bright and Kersti Tyson for their consistent availability, critical feedback, thoughtful insights and helpful tips. I feel so grateful that they were willing to share their

experiences in the College of Education with me so that I could follow their steps very closely. As a new graduate student, being invited to listen in on their advanced graduate student study groups was immensely helpful. And I especially thank Bret who patiently proofread almost all my writings.

I would like to convey my gratitude to the educators, particularly the teachers, who participated in this study in Urumqi, Xinjiang, P. R. China. Their contributions were important to our understanding of teachers' beliefs and practices in different cultures.

Finally, I thank my family for their support and confidence in me as I worked towards meeting this goal. My mom, Liu Changfeng and my dad, Zhang Shu'an have always been encouraging and supportive. My mother-in-law Edna Newton, as a former teacher, offered me priceless insights through our routine Sunday telephone calls. Paul Newton, my husband and my best buddy, has opened a new world for me. The best decision that I have ever made in my life is to marry this amazing and wonderful man who taught me the importance of asking questions. His unselfish support and encouragement have kept me going through far too many mental and emotional breakdowns throughout the process. Thank you, Paul, for having faith in me, for making unexplainable sacrifices, for proof-reading "a foreigner's writing", for muddling through the learning theories with me over numerous weekends, and for helping me remain grounded and centered throughout this process. A very special thank-you goes to our cat, BB (Big Boy), who offered me unconditional emotional support from the very first day I arrived at the U. S. He was the only one who I could talk to in my native language before I made friends on this new land. Imagine that!

Dedication

To my dear husband, Paul, who cares about education wholeheartedly

Listen to the words, but observe the actions (听其言, 观其行).

— Chinese adage

Chapter One – Introduction

Background

In recent decades, when social or political value conflicts arose in the U.S. or external economic pressures accelerated, a typical response was to put the education system under the spotlight, as Cuban (1990) describes, "If society has as an itch, schools get scratched" (p. 9). In the wake of the Sputnik challenge in the late 1950s, gains in student achievement were widely seen as the answer, and so increases in educational rigor, especially in math and science, were demanded nationwide (A *Nation at Risk*, 1983). When U.S. economic power waned in the 1980s, the educational system was blamed for failing to educate the bulk of the population, thereby risking U.S. competitiveness threatening her future prospects in an increasingly global economy. As U.S. students have consistently scored worse than their peers around the world, especially their Asian counterparts, on international assessments such as TIMSS and PISA[1] since 1990s, critics have likewise once again translated this reality into yet another set of educational goals.

One of the more recent pressures on education comes from the results of PISA 2010 when students of Shanghai, China "stunningly" outscored students in dozens of other countries, including U.S. students. In response Secretary of Education Arne Duncan warned us that "we have to see this as a wake-up call" (New York Times, 2010). Although there are many in and out-of-school factors associated with students' achievement, Duncan (2009) emphasizes that "a great teacher can change the course of a student's life. A great teacher lights a lifelong curiosity, a desire to explore, and a hunger

[1] TIMSS: International Mathematics and Science Study, which assessed students in grades 4 and 8.
PISA: The Program for International Student Assessment, which assessed the students in 10th grade (15-year- olds)

for knowledge. It's no surprise that studies repeatedly document that the single biggest influence on student achievement is the quality of the teacher standing in the front of the classroom." Thus creating more great classroom teachers can significantly address our nation's education problem. Chinese students' high rankings in international tests make China a great case to explore: What are Chinese teachers doing correctly or differently? Studying Chinese teachers and their practices holds great promise in helping the U.S. tackle its student achievement problem.

Rationale of the Study

As teachers are considered as a major factor on increasing students' learning, there is an increasing body of literature demonstrating a strong correlation among teachers' beliefs about and expectations of students, their associated instructional practices, and resultant student performance. Teachers' beliefs and perceptions about various student groups translate into and shape, their instructional practices (Oakes, 1985; Peterson, 1988; Fang, 1996; Deemer, 2004; Diamond et al, 2004; Love & Kruger, 2005; Villegas & Davis, 2008; Schanbacher, 2009), their curricular and pedagogical choices (Zeichner & Hoeft, 1996; Schmidt et al, 2002; Johnson & Hall, 2007), their establishment of academic standards (Lipman, 1998), where they draw lines of their responsibility (Diamond et al, 2004), and their ways of taking up educational reforms (Cohen & Ball, 1990; Jennings, 1996; Wilson, 2003).

Most of the literature on the U. S. teachers' beliefs about various student groups suggests that the majority of teachers tend to have higher expectations of children from mainstream backgrounds than of children from ethnically, socio-culturally, linguistically and financially (low-income) diverse backgrounds. However, the research in the similar arena revealed that many teachers of color, compared to White teachers, have more favorable views of students from diverse backgrounds, including higher expectations regarding their academic potential (Villegas & Irvine, 2010; Dee, 2005; Oates, 2003;

Irvine 1990). Generally, teachers with high expectations for their students spend more time instructing their students, more frequently provide their students with a framework for their learning, adopt more challenging curriculum, more often question their students, and provide them with more feedback on their learning than those who have uniformly low expectations for their students (Oakes, 1985; Page, 1991; Casteel, 1998; Rubie, 2003). Research indicates teachers are more effective who hold the beliefs that all students can be successful learners, who further believe that teachers can make a difference in every student's academic life, and who therefore commit themselves to help each student learn. Students learn better when teachers communicate their positive beliefs to students in personal ways (Ladson-Billings, 1994; Gay, 2000) and when teachers effectively translate their beliefs into more academically demanding curriculum (Zeichner, 2003; Jussim & Harber, 2005).

The research further reveals that instructional change can be expected only when teachers' beliefs about teaching and learning change (Dwyer et al, 1991; Jennings, 1996; Lipman, 1998; Ladson-Billings, 1994; Richard et al, 2001; Zhang et al, 2009). More importantly, the dramatically increasing diversity of the student population in the U.S requires that many teachers' negative beliefs about students who differ from teachers' perceptions as the norm, and so are insidiously detrimental to student learning, be significantly rethought and changed. And different beliefs of teachers of color about the similar student groups might offer some insights in helping the teachers rethink about their beliefs. Teachers' expectations, like all human beings' expectations, are shaped by their beliefs, which themselves are shaped socially, politically, culturally and historically, and so are difficult to change. But, for the sake of our students, they must change. The question is how. To answer this question, we have to be clear what mental models and beliefs are, and in what way we can visualize them so as to change them when needed.

Senge (2006) defines “mental models” as “deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world, and how we take action.” Chi (2008) states that “an organized collection of individual beliefs can be viewed as forming a mental model” and offers ways to confront and correct our beliefs by confronting their derived mental models. Senge (2006) likewise states “working with mental models starts with turning the mirror inward; learning unearth our internal pictures of the world, to being them to the surface and hold them rigorously to scrutiny.” He describes two broad skills to surface and change mental models: Skills of reflection and skills of inquiry. Skills of reflection can potentially slow down our own thinking processes so that we can become more aware of how we form our mental models and the ways they influence our actions. Inquiry skills deals with the way we operate in face-to-face interactions with others, especially in dealing with complex and contentious issues. Teachers who recognize the pernicious role that their mental models can play in student learning can choose to learn and use these two skills to come to understand their mental models and their beliefs underlying them, and so have an opportunity to change them. This line of research-based reasoning suggests at least one way that teachers can work to change their beliefs, mental models, expectations and actions to improve student learning.

Study Purposes and Research Questions

Although more and more attention has been drawn to teachers’ beliefs and their effects on student learning, there are few empirical studies that investigate possible alternative mental models and underlying beliefs, which might exist in different cultural value systems. That is, even with an evolution in research frameworks and a growing literature, much of the research on teachers’ beliefs has continued to examine the experience of U.S. teachers, rather than teachers elsewhere. This study was motivated by an interest in searching elsewhere for unfamiliar patterns, aiming to create opportunities

to help us see the existence of other mental models and beliefs by "making the familiar strange" (Stevenson & Stigler, 1992) and so surface ours as suggested by Senge (2006). The study investigated teachers' beliefs about students with ethnic, linguistic, and socioeconomic diversity in Xinjiang, China, which has cultural value and belief systems different from those in the U.S., but which, like the U.S., has a diverse student population. It was hoped that by "making the familiar strange," this study could and would provide information useful in surfacing and modifying teachers' beliefs, and resultant mental models, expectations and actions, opening up possibilities for alternative mental models that might lead to improved teaching practices in our nation (Morecroft & Sterman, 2000; Senge, 2006; Sterman, 2000). The study therefore was designed to investigate and clarify the following questions.

1. *What are Chinese teachers' beliefs about teaching and learning?*
2. *What beliefs and expectations do Chinese teachers hold about students who are different - financially, linguistically and ethnically - from what the teacher perceives as the norm?*
    a. *What do Chinese teachers believe about Han and non-Han students?*
    b. *What beliefs and expectations do Chinese teachers hold about low socio-economic status students?*
    c. *What beliefs and expectations do Chinese teachers hold about students who don't have, or are still working on, Mandarin language proficiency?*
3. *How are Chinese teachers' instructional practices mediated by their beliefs about, and expectations of, ethnically, linguistically and financially diverse students?*

Question One was designed to investigate Chinese teachers' beliefs about teaching and learning in general. Question Two aimed to explore what kind of beliefs Chinese

teachers hold about different student groups. And Question Three should help explain why teachers teach in the way they do in relation to their beliefs and perceptions about their diverse students.

Organization of the Dissertation

The dissertation report first articulates the history and context of the problem, aiming to explain why the study is important and necessary (Chapter II). Chapter III reviews the literature that sets up the theoretical conversation of this study. The literature review addresses four areas: 1) Comparative studies of education in the U.S. and China; 2) Research on U.S. teachers' beliefs; 3) Research on Chinese teachers' beliefs; and, 4) Research on minority education in China. Chapter III also introduces the theoretical framework that guided the study. Chapter IV, Methodology, describes how the study was conducted and what data was collected and analyzed in order to address the research questions. Following description of the research methods used, I dedicate four chapters to reporting the findings of the study (Chapters V – VIII). The concluding chapter – Chapter IX, discusses interprets the findings in light of the theoretical framework, discusses limitations that I see in the study and poses avenues for further inquiry.

Chapter Two – History and Context

Historical Background

Although education alone cannot create (or negate) the economic well-being of a nation, "[s]chooling is also seen as having a key role in helping nation states respond to rising social expectations and in achieving greater social equity" (Furlong et al, 2008). Top-level policy-makers and politicians in the U.S. have consistently concluded that: 1) the current system is failing to produce the workforce we need, and 2) policies regarding the nation's education system, particularly the recruitment, preparation, and retention of its teaching force, are fundamentally wrong and need serious rethinking and vast improvement (Fraser, 2007; Zeichner, 2010a), or even revolutionary changes (Duncan, 2009). Teaching and teacher education are tightly linked to the nation's aspirations for global competitiveness, and thus, teacher education is more and more often seen as the focal area to improve in order to prepare qualified teachers for every child in the U.S.

It becomes more urgent to address this issue because the degree of diversity in the U.S. is dramatically increasing, and many ethnic minority students and students living in poverty are consistently seen to perform poorly on standardized tests and a variety of other educational outcomes. According to Secretary of Education Duncan (2009), "Barely 60 percent of African-American and Latino students graduate on time—and in many cities, half or more of low-income teens drop out of school." A sub-par education for so many students will create multiple negative consequences for the Nation, ideologically, socially and economically. Failing to educate the bulk of the population risks U.S. competitiveness and threatens its future prospects in an increasingly global economy. Another consequence is that less educated people will be less able to participate effectively in a democratic society. There are many factors influencing relative academic success across public schools, and the next section will discuss the issues that are considered closely related to students' learning.

Problem Articulation

Articulation of the problem can thus be best expressed via four views: tracking students; the urgency of the problem due to the increasing diversity of the U.S.; factors that influence the education of diverse students; and the insidious effects of teachers' beliefs about diverse students. Each of these views will be considered here in turn.

Tracking students

Traditionally in the United States, different outcomes for students are explained based on individual differences including academic achievement, ability to learn, family backgrounds, socioeconomic status (SES), and English language proficiency (Oakes, 1985, 1986; Page, 1991; Stevenson & Stigler, 1992; Lipman, 1998; Zohar, et al; 2001; Diamond, et al, 2004). Oakes (1985) claims that tracking students is a deeply ingrained practice in public school in the U.S., and almost all schools do it. The rationale of tracking lies in the notion that students differ in capabilities and backgrounds that influence speed of learning, interests, and motivation. According to Oakes, this ingrained practice is supported by four instructional beliefs about the presumed benefits of tracking: 1) Students learn better when grounded with others like themselves academically, and bright/gifted students will be held back in mixed groups; 2) Slower students develop more positive attitudes when grouped by the same level; 3) Placements are fair based on past achievement and native abilities; 4) It is easier for the teacher to accommodate differences of students. As a result, students are divided into instructional groups or separate classes based on the criteria of assumed similarities in ability or academic achievement to form homogeneous groups for instruction, such as levels (high, middle, and low), and tracks like Honors, College Prep, general, vocational, and special education classes. Problematically, this differentiation of students results in the fact that teachers hold specific beliefs about, and expectations of, students in certain tracks, and they set up different standards in their instructional practices to accommodate these student

differences. For instance, teachers hold low expectations of students of color and students from low SES who are often seen in lower tracks, and they set up low standards for these students.

An increasingly diverse nation

The United States is becoming an increasingly diverse nation. Almost 30 million people, about one tenth of the total population of the U.S., were born in other countries. Minorities, now roughly one-third of the U.S. population, are expected to become the majority in 2042, with the nation projected to be 54 percent minority by 2050. By 2023, minorities will comprise more than half of all children (U.S. Census Bureau, 2009)[2].

In 2000, over 3 million elementary students were designated as English Language Learners (ELLs), a number still expected to dramatically increase (U.S. Census Bureau, 2008). It was reported in 2006, approximately 13 million children in the U.S. lived in families with incomes below the poverty level and over 9 million of these children did not have health insurance. When the 13 million children living in poverty were broken down by ethnicity and race, 35.3 percent were of African-American children, 28 percent of Latino children, and 10.8 percent of white non-Latino children (Zeichner, 2009). Currently, over 40% of public K-12 students are of color (National Center for Education Statistics, 2002; Christensen & Karp, 2003). In addition, despite being from different races, religions, socioeconomic statuses, and with different ability levels and language skills, students are expected to learn using the same curriculum. In contrast, pre-service teachers are overwhelmingly white, female and monolingual English speaking (Zeichner, 1996a), and 90% of the in-service teachers are white (Christensen & Karp, 2003). The situation of this cultural division between teachers and their students is further complicated by the fact that most teacher education programs do not pay sustained

[2] Details of projected population of the United States refer to Appendix A.

attention to preparing teachers to teach across lines of ethnicity/race, language, and social class (Zeichner, 2009).

Factors that influence education of diverse students

A partial list of the factors that influence academic success in public schools includes disproportionate distribution of qualified and experienced teachers, uneven funding, teachers' personal backgrounds, teachers' beliefs about teaching and learning, increased segregation of students in accordance with their race, ethnicity, and social class backgrounds, and communities where schools are located, all of which produce, or further, inequities in the U.S. public schools (Zeichner, 2009). "There is now substantial research indicating that the quality of teachers and their teaching are the most important factors in student outcomes that are open to policy influence" (McKenzie and Santiago, 2005, p. 12). Nonetheless, the research reveals that students living in poverty and students in high-need schools are more likely taught by some underprepared novice teachers (Peske & Haycock, 2006). A University of Missouri study (2008) found that children from low-income families in the United States do not have the same access to qualified teachers as their wealthier peers. In a comparison across 46 countries, the United States had the fourth largest opportunity gap between students of high and low socioeconomic status in their access to qualified teachers. Due to uneven funding, districts in very poor areas often do not have the resources or capacity to recruit highly qualified and experienced teachers. Also, qualified and experienced teachers are more likely to move to more affluent districts whenever possible. Consequently, students in high-poverty schools, low-performing schools and schools with high concentrations of African-American or Latino students have less-qualified teachers (Zeichner, 2009).

Although the aforementioned factors do influence the education of students, especially the diverse students, the study focused on better understanding teachers' beliefs

in relation to their instructional practices, that is, teachers' beliefs as a mediator of teaching activity.

The insidious effect for teachers' beliefs

Ample evidence suggests the role of teachers' beliefs should be carefully examined in efforts to improve instructional practices[3]. The research literature supports that teachers' beliefs about diverse students produce impacts on how they interpret curriculum materials and instructional strategies promoted by reforms related to changing their practices (Oakes, 1985, 1986; Spillane & Jennings, 1997; Lipman, 1998; Gay, 2010). The continually increasing diversity of the student populations in the U.S. makes rethinking the role of teachers' low expectations (beliefs) of diverse students more and more urgent and challenging. The pernicious lack of development of so many students was created in part by these beliefs and it leads to a sub-par education for an increasing proportion of the population, creating risk for the U.S. ability to remain competitive in an increasingly global economy.

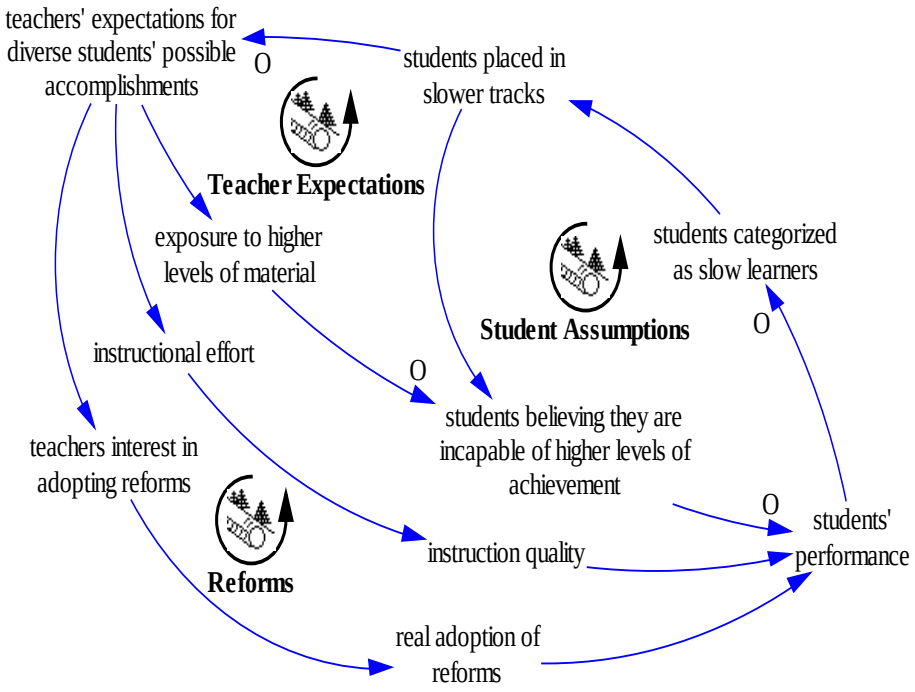
A considerable body of research reveals that the U.S. teachers, most of whom are White middle class women, hold low expectations for ethnically, financially, and linguistically diverse students (Baron et al, 1985; Oakes, 1985, 1990; Oakes et al, 1997; Lipman, 1998; Ferguson, 2003; Diamond et al, 2004; Love & Kruger, 2005; Oates, 2003; Dee, 2005; Villegas & Davis, 2008; Gay, 2010), though some literature claims that it is not true for many teachers of color (Villegas & Irvine, 2010). In their meta-analysis of experimental studies on teachers' beliefs, Baron et al. (1985) discover that whereas nine of the sixteen studies concluded teachers hold high expectations for White students, only one study indicated that teachers had high expectations for Black students. Villegas & Davis (2008) reviewed more recent literature on teacher expectations as related to student

[3] More details see Chapter III – Literature Review.

race, concluding “Black students continue to experience more negative interactions with their teachers than their White counterparts” (p. 589).

Teachers’ beliefs about subject matter, pedagogy, and student groups, especially in diverse contexts, influence how they make decisions on curriculum material choices and instructional strategies, which determine students’ learning opportunities and the quality of their actual learning (Oakes, 1985, Sep. & Oct. 1986; Cohen & Ball, 1990; Peterson, 1988, 1990; Stevenson & Stigler, 1992; Spillane & Jennings, 1997; Oakes, et al, 1997; Lipman, 1998; Zeichner, 2003; Johnson & Hall, 2007). It becomes very crucial how teachers perceive their students. Stevenson & Stigler (1992) claim, “Once [students are] categorized as slow learners, a vicious cycle begins: they are placed in slower tracks; teachers hold lower expectations for their possible accomplishments, and thus expose them to lower levels of material than they do the more able students; the students come to believe that they indeed are incapable of higher levels of achievement; and many end up dropping out of school” (p. 109). These vicious feedback loops, as an example, are illustrated in Figure 1 below:

Figure 1: Vicious Feedback Loops of Teachers’ Beliefs, Curricular and Instructional Strategies and Responses to Curriculum Reform



Apart from choosing less challenging curriculum materials, many teachers with low expectations of students do not take reform as a message to improve their practices and tend to spend more class time managing students' behavior. As a result, students will perform even more poorly due to reduced instructional quality, resulting in teachers developing even lower expectations of them, and thus selecting even less challenging curriculum materials, completing a persistent vicious cycle. In this way, a sub-par education could arise from, or be reinforced by, teachers' negative beliefs about diverse students.

These vicious feedback loops illustrate that teachers' mental models (beliefs) play a significant role in students' performance. As a matter of fact, teachers' beliefs create these vicious feedback loops, and they also have the potentials to reverse the direction of the loops, making them virtuous cycles instead of vicious circles. That is, if teachers hold higher expectation of the students, they would more likely adopt more challenging curriculum materials, the associated instructional quality would be improved with more teaching time instead of behavioral control, and teachers would more actively respond to curriculum reforms through which teachers would improve their knowledge of subject matter and pedagogy. All these, in turn, will improve students' learning. Undoubtedly, this would depend in part on the contexts in which they are teaching.

It is not JUST the individual teachers' beliefs that determine the quality of student learning. However, I argue that if teachers are helped to see the role of their beliefs about their students in the schooling system, they might be more open to other mental models, and they might be willing to change their own. This suggests that teachers' beliefs about students should be surfaced and compared with other models that exist in other cultural systems so that teachers can realize how pernicious their negative beliefs could be for students' development. Helping teachers see the inter-generational effects of their mental models may be most effective for many teachers to improve or change their practices.

In sum, the nation faces the challenge of providing a quality education for increasingly diverse student populations. The potential of failing to educate this increasing proportion of the population creates serious negative consequences, including risks for the U.S.'s democratic society and competitiveness in the global economy. Zeichner (2009) ponders the challenge at a higher and deeper level, and he believes, "It is a violation of the most basic principles of social justice that a country as wealthy as ours denies the opportunities that come with a high-quality education to a substantial portion of our young people"[4] (p. xiii). Darling-Hammond & McLaughlin (1995) assert that dramatic demographic changes in the student population require teachers to "rethink their own practice … and to teach in ways they have never taught before and probably never experienced as students" (p. 8). To face the challenge, the literature calls for teachers to develop additional knowledge, and a particular set of beliefs, dispositions, and visions, in order to make instructional decisions that meet the demands of diversity (Sleeter, 2001; Villegas & Lucas, 2002; Banks, et al, 2005; Darling-Hammond & Bransford, 2005; Howard & Aleman, 2008). Since my study attempts to explore teachers' beliefs and expectations and the impacts on students' learning, in next chapter, I review what the research has found with regard to the teachers' beliefs of the U.S. and of China about diverse student groups and their associated instructional practices. Following the literature review, I introduce the theoretical framework that guided the study.

[4] Zeichner quotes from Economic Policy Institute (2008).

Chapter Three – Literature Review

The research questions touch upon four primary areas of scholarship: educational comparisons of the U.S. and China, American teachers' beliefs about diverse students, Chinese teachers' beliefs about diverse students, and minority education in China. It is impossible and unnecessary to conduct a comprehensive literature review of each category due to the vast quantity of available literature in each of these areas. To serve the purpose of this study, I have provided synopses of the literature that is the most relevant in these four areas.

Comparative Studies on Education of the U.S. and China

In recent decades, the research comparing education in China and the U.S has grown rapidly. The comparative research embraces teaching and learning in general (Stevenson & Lee, 1990; Stevenson & Stigler, 1992); mathematics teaching and learning in particular (Kwok & Lytton, 1996; Ma, 1999; Cai, 2000; Cai & Wang, 2006; Tsui, 2007; Correa, et al, 2008); early childhood education (McMullen et al, 2005; Wang et al, 2008); homework examination (Chen & Stevenson, 1989); educational testing systems (Niu, 2007); roles of parenting in schooling (Chao, 1996); cultural learning models (Li, 2002), beliefs about learning and achievement (Yang & Sternberg, 1997); teacher preparation (Liu and Qi, 2006); and teachers' attitudes towards their self-disclosure (Zhang et al, 2009). Chen & Stevenson's 1989 study looked into cultural differences in the amount of time spent on homework, and beliefs about, and attitudes towards, homework. In their study, more than 3500 participants were investigated, including elementary school children, their mothers, and their teachers who lived in 5 cities: Beijing, Chicago, Minneapolis, Sendai (Japan), and Taipei. The study found that, of Chinese, Japanese and American children, Chinese children were assigned the most homework, spent the most time doing homework, and had the most positive attitudes toward homework. In addition, Chinese children received the most help from family

members with their homework. The research of Liu and Qi (2006) explored elementary teacher preparation programs in China and the U.S., including comparison elements of program admission, course requirements, field experience, student teaching, and exit program evaluation. Despite similarities in gender and age composition in each country's program, it found that many differences in teacher preparation practices, characteristics of teachers, salary scales, teachers' social status, and perspectives on teaching as a profession.

Correa, et al. (2008) conducted a qualitative study comparing US and Chinese elementary mathematics teachers' beliefs about how students learned math. Their study found that US and Chinese teachers held different beliefs about both how mathematics could be better taught and how students learned math. Many Chinese teachers chose to help students learn mathematics by relating the content of mathematics lessons to real-life situations, while the US teachers preferred to focus on students' learning styles and hands-on approaches to teaching mathematics. For Liu and Qi (2006), these beliefs were internally consistent and persistent within each country due to the development over time of a common internal culture in those countries. Wang et al (2008) conducted a mixed-method study with 442 survey participants (296 Chinese teachers and 146 American teachers) and 20 interview participants (10 in each country), investigating similarities and differences between US and Chinese teachers' beliefs about early childhood curriculum, and relations between these beliefs and teachers' characteristics – personally, professionally and socio-culturally. The study revealed that general education, professional training, school location, and class size were all significantly associated with Chinese teachers' beliefs about early childhood curriculum; whereas, only the general education level was related to US teachers' beliefs about early childhood curriculum. However, a discriminant analysis indicated significant cross-national

differences in teachers' level of endorsement of specific beliefs, which called for further research.

The literature also shows that cross-nation comparative research has indeed had a considerable influence on the US policymakers and reformers in education, who are seeking to learn from East Asia, especially from countries with high student achievement scores in international tests such as China, Japan, South Korea and Singapore (Cummings & Altbach, 1997). For instance, the US Department of Education began an extensive survey of Japanese education, and as a result, the then-Secretary of Education William J. Bennett listed 12 principles of good education for the U.S. The list includes the importance of parental involvement in their children's schooling, strong motivation and high standards, the importance of maximizing learning time and making good use of it, the centrality of holding high expectations for all children, and a firm commitment to develop a strong work ethic and good study habits. Another good example is the Third International Mathematics & Science Study (TIMSS), which was first released in 1996 and 1999 respectively, and then became an important reference for U.S. curriculum reform with regards to width (coverage) and depth of subject matter in K-12 education (Lindquist, 2001; Schmidt, et al, 1999; Schmidt et al, 2002).

Research on U. S. Teachers' Beliefs

The research on teachers' beliefs in the U.S. has a long history and covers a wide range. Included in the research are beliefs about students' innate ability (Oakes, 1985; Schanbacher, 2009), low-achievers (McDiarmid & Price, 1990; Peterson, 1988), students of color (Oakes, 1985; Lipman, 1998; Ferguson, 2003; Perry et al, 2003; Oates, 2003; Diamonds, 2004; Dee, 2005), students from low socio-cultural status (Oakes, 1985; Schmidt, 2001; Oakes et al, 2004), English language learners (ELLs) (Walker et al, 2004; Reeves, 2006; Lucas & Grinberg, 2008), language learning (Richard et al, 2001), students heuristic strategies of problem solving (Koichu et al, 2003), students' ways of

mathematical thinking (Nathan & Koedinger, 2000; Gates, 2001; Torff & Warburton, 2005), religion and religious diversity (Subedi, 2006); and educational reforms (Wilson, 1990; Cohen, 1990; Peterson; 1990; Jennings, 1996; Griffiths et al, 2006). For the purpose of this study, five themes that emerged from the literature related to the U.S. teachers' beliefs about different student groups are discussed here.

1. Teachers' beliefs about students' innate ability

Noguera (2008) points out the history of beliefs about the relationship between race and intelligence in the United States is relevant to what schools are doing now for closing the achievement gap. The scholars think it was acceptable and understandable to consider innate genetic differences between population groups as attributes of racial disparities in educational achievement and academic performance (Fredrickson, 1981). Unfortunately, it has been so throughout most of American history. Students are born with different innate abilities. Some are born gifted and talented, some are born mediocre, and some just too slow to learn or even dumb. "Once a GT (gifted and talented) will always be the GT" is one common belief among U.S. teachers. And there are entrenched beliefs about racial and ethnic biological difference in innate ability (Oakes, 1986). For instance, a misguided social Darwinistic view posits that darker-skinned people are on a fundamentally lower rung of the evolutionary ladder, and so are less intelligent. Consequently, Oakes quotes what Lewis Terman (1923), the intelligence test pioneer, says, "Their dullness seems to be racial…. Children of this group should be segregated in special classes…. They cannot master abstractions, but they can often be made efficient workers" (p. 28).

These unexamined beliefs about inherent group differences are still seen by many as enormous differences in students' innate potential for school learning. Accordingly, students are openly labeled as "to-be-employers" and "to-be-employees" through tracking, and so they are educated based on these labels during their school years. The "to-be-

employees" are perceived to be less intelligent, and so are given opportunities to learn only what is required for them to succeed in the future for which they are perceived to be suitable. Therefore, teachers often teach them with traditional instructional methods, by drilling and assisting students in memorizing sequences. Teachers do not select challenging curriculum or innovative pedagogical methods, and they do not see educational reform as containing important messages that they need to change their teaching practice for these "to-be-employees", because they do not think any change is needed for these disadvantaged students (Peterson, 1990; Jennings, 1999).

Brown and Smart (2007) studied data from the Social Capital Community Benchmark Survey, and they revealed "strong support for the interpretation of race effects as spurious artifacts of having included data on educational attainment without measures of innate ability" (p. 17). Therefore, they argue that when the costs and benefits of education vary by race, and when innate ability remains an unmeasured source of heterogeneity across individuals, controlling for educational attainment and not for ability will create illegitimate race effects in empirical studies of behaviors that depend on both education and ability, especially in a racialized society such as the U.S. Unfortunately, resources are continuingly poured into the search for genetic causes even when the epidemiological studies have revealed that environmental factors are stronger than genetic for students' learning. However, intelligence was regarded as an innate human property rooted in the particular genetic endowments of individuals and groups (Duster, 2003) in American society.

2. Teachers' beliefs about low-achievers

Many U.S. teachers believe that low student achievement is indicative of inadequate metacognitive knowledge and skills, and therefore they come to believe that low-achieving students are incapable of higher order thinking. Often, these teachers believe that learning is linear and sequential (hierarchical), and thus their low-achieving

students must progress up the learning ladder before being allowed to experience curriculum and instruction opportunities that challenge their higher order thinking abilities (Oakes, 1985; Peterson, 1988; McDiarmid & Price, 1990; Oakes, et al, 1997; Jennings, 1999; Zohar, et al, 2001; Jussim & Haraber, 2005). Accordingly, low-achievers may chronically experience lower order instructional emphasis, since teachers see these students as "stuck" in the early phases of the learning process. This perception of low-achievers results in some students never getting to the point of having opportunities to engage with challenging problems and higher order thinking, which are typically emphasized in education reforms. Oakes (1985, 1986) provides evidence that low-achievers sometimes receive less attention, are seated further from the teacher, are given less demanding work, most possibly receive less teacher support in failure situations, and are given fewer opportunities to answer questions.

3. Teachers' beliefs about students of color

The research (Lipman, 1998; Diamond et al, 2004) reveals that teachers' beliefs about students are patterned by the race and social class composition of the student population, and that white teachers are more likely to hold low expectations of students of color (Pang & Sablan, 1998; Warren, 2002; Oates, 2003; Dee, 2005; Villegas & Davis, 2008; Sleeter, 2008). Teachers often do not accurately interpret the social characteristics of different ethnicities. For instance, teachers often interpret the cultural, class, and racial characteristics of African American students as indicative of less educational ability, particularly in comparison with upper-middle-class White students (Lipman, 1998; Diamond, et al, 2004). In their studies, Diamond, Randolph and Spillane found out that when students were majority African American and from low-income families, teachers held more deficit-oriented beliefs about them. When teachers' beliefs emphasized students' deficits, they often saw the deficits as a lack innate ability, parental support, and motivation.

What is more, Lipman (1998) discovered that some educators could be quite candid about their belief that African-American students pose greater behavioral problems. Many teachers believe that there is connection between social class, poverty, and the devaluation of education; they believe that many African American parents have low academic expectations and goals for their children and little commitment to education. Instead of focusing on the effectiveness of instructional practice for these students, teachers tend to focus on how to modify students' behavior to have a more manageable classroom, and on social control and support for these students (Oakes, 1985; Lipman, 1998). "Defective environments, negligent parents, and deficient students" can best describe teachers' internal images about low SES students.

As a result, their associated instructional strategies tend to be "back to basics" through rote memorization and drilling instead of teaching for understanding. Contrasting such beliefs, scholars like Perry, Steel and Hilliard III (2004) argue that the African American community has historically, from slavery to the civil rights era, recognized the powerful value of education and knowledge. For them, the differences for African American children are seen in instructional quality and the comfort of the school and classroom environment, that is, the "classroom climate" as defined by Oakes (1985).

4. Teachers' beliefs about low SES students

Often teachers' mental models about students from low-income families are very negative and degrading. Teachers tend to believe that parents in these families are uneducated, uncaring, and unable to provide their children with the skills, values, and social support they needed in school (Lipman, 1998), resulting in these students often being seen as poor learners. Pang and Sablan (1998) discovered that teachers with the biased notions tended to believe that low SES students brought so many deficits to the classroom that it was too difficult to make a difference in their academic performance, even applying best teaching practices. In their research, Pang and Sablan illustrated these

beliefs with dramatic stories about individual students in crisis, but deemed applicable to all students with similar backgrounds. In general, many teachers hold a deficit model of students from low SES with low expectations for their academic achievement. Some teachers even choose only to act as a "Babysitter" for these students. As a result, teachers more likely use a watered-down curriculum, and instructional practice tends to focus on more rote learning, often emphasizing control of student behavior in the classroom rather than emphasizing teaching and learning (Oakes, 1985; Lipman, 1998; Diamond et al, 2004). "Defective environments, negligent parents, and deficient students" also can best describe what teachers believe about students from low SES.

5. Teachers' beliefs about English Language Learners (ELLs)

The literature reveals that mainstream teachers hold overwhelmingly negative beliefs about English language learners (ELLs) (Bynes et al., 1997; Flores, 2001; Walker et al, 2004; Garcia-Nevarez et al., 2005; Reeves, 2006; Lee & Oxelson, 2006). Some teachers have the notion that second language learners do not want to learn; while others believe that English language skills should be a prerequisite for learning subject matter, e.g. science (Dong, 2004). Some believe that specially prepared teachers should teach ELLs subject matter (science, math, history, etc.), and they can enter mainstream classrooms only after they have acquired English language proficiency (See Lucas & Grinberg, 2008).

When teachers with such beliefs have ELLs in their classrooms, they often unwittingly undermine learning opportunities for these students by choosing less challenging content; making few modifications to, or using over-simplified language in, their instruction; or ignoring or excluding these students in class discussions (Ladson-Billing, 1998; Byrnes et al., 1997; Dong, 2004). Walker and colleagues (2004) found that over 70% of the teachers in their study were not even interested in working with students without English language proficiency. They claim that teachers' knowledge of ELLs

played an important role in the effective teaching of ELLs; teachers who personally experienced foreign cultures and languages, or had opportunities to learn about ELLs in carefully organized, formal training tend to have positive beliefs about, and attitudes towards, ELLs, and would be more likely to help these students learn (Byrnes et al, 1997; Reeves, 2006; de Oliveira & Athanases, 2007; Villegas & Davis, 2008). Yet, other researchers claim that pre-service and in-service teacher training on language minority education by itself will not guarantee success, and so they suggest that more attention be paid to the systemic nature of professional development such as its continuity (change over time) and complexity including influences from teachers' personal backgrounds, federal, state, county and district levels, and the university teacher preparation program (Varghese & Jenkins, 2005).

In sum, most of the literature on the U. S. teachers' beliefs about student groups reveals that teachers generally tend to have higher expectations of children from mainstream backgrounds than those from ethnically, socio-culturally, linguistically and financially diverse backgrounds. And teachers with high expectations for their students spend more time instructing their students, more frequently provide their students with supports, adopt more challenging curriculum, more often question their students, and provide them with more feedback on their learning than those who have uniformly low expectations for their students (Oakes, 1985; Page, 1991; Casteel, 1998; Rubie, 2003). However, some research suggests that teachers can be more effective if they believe that all students can be successful learners, and that teachers can make a difference in every student's academic life, and if they commit themselves to help each student learn. In addition, students learn better when teachers communicate their positive beliefs to students in personal ways (Ladson-Billings, 1994; Gay, 2000) and effectively translate their beliefs into more academically demanding curriculum (Zeichner, 2003; Jussim & Harber, 2005).

Research on Chinese Teachers' Beliefs

The last decade saw a growing body of research on Chinese teachers' beliefs (Hui, 2001; Tong & Chu, 2005; Guan et al, 2007; Ding et al, 2008; Zhang et al; 2008; Sang et al, 2009; Liu et al, 2010; Gu & Yawkey, 2010; Sharon & Rao, 2010). Ding et al's study examined Chinese teachers' beliefs about classroom management. They conducted a survey with questionnaire to investigate 244 valid respondents from elementary to high school teachers in two provinces in China regarding to teachers' general concerns about classroom management, teachers' beliefs about the most frequent and troublesome types of misbehavior, and teachers' perceived needs for help to improve classroom management. The study found that 65.6% of Chinese teachers do not take classroom management as a great concern, and that "daydreaming"— absent-minded, was considered to be the most frequent and troublesome misbehavior. In addition, Chinese teachers believed that there must be psychological reasons for student misbehavior, and teachers eagerly attempted to discover what the reasons hid behind.

Sang et al (2009) investigated teachers' educational beliefs – their socioeconomic and geographical perspectives on Chinese primary schools. They conducted an 820-participant survey of primary school teachers to explore the nature and profiles of primary teachers' educational beliefs. The questionnaire focused on teachers' traditional and constructivist beliefs about teaching and learning. The study reveals that traditional educational beliefs vary with gender and subject, and across economic and geographical contexts. Liu et al (2010) examined teachers' explicit and implicit gender-science stereotypes and affective attitudes towards science among Chinese secondary school students. They found that gender-science stereotyping became more and more apparent as the specialization of science subjects progressed through secondary school, especially from the 10th grade. Girls tended to have an implicit science-unpleasant/humanities-

pleasant association by teachers from the 8th grade. They also found that an implicit affective attitude was strongly predictive of stereotyping.

Since the research on teachers' beliefs started much later in China than the U.S., it has primarily concentrated on Chinese teachers' beliefs about teaching and learning in general, and math and science teaching in particular. Therefore, I was unable to synthesize the literature by categorizing it into five themes as I did in my review of research on the U.S. teachers' beliefs. Nevertheless, I hope that my study findings add to the scholarship in this area, especially with regard to teachers' beliefs about diverse students and their associated teaching practices. Because my study attempts to investigate Chinese teachers' beliefs about diverse students, it is useful to examine research related to the education of ethnic minorities in China. Fortunately studies of minority education in China have become more frequent in the English-speaking world in the past. My next section discusses the relevant studies from this literature.

Research on the Education of Ethnic Minorities in China

Since the 1980s when China opened her doors to the outside world, research in English on ethnic minority education access and underachievement in China has grown rapidly (Postiglione, 2009). The research covers a large-range of foci in the arena of bilingual policy for ethnic minorities (Zhou & Sun, 2004; Lam, 2005); educational policies (Bass, 1998; Dai and Xu, 2009); religious education (Gladney, 1999), cultural transmission (Stites, 1999), challenges of language proficiency (Tsung, 2003; Hong, 2010); curriculum content (Yu, 2008); teacher education for minority regions (Chapman et al, 2000); and bilingual and trilingual education (Li, 2005; Adamson & Feng, 2009; Ma, 2009; Zhao, 2010). The ethnic groups examined in the research included Uygur students in a boarding school in inland China (Chen, 2004; 2008); Yi minority in Yunnan and Guizhou (Harrell & Ma, 1999), Dai minority in Guizhou (Hansen, 1999); Miao minority in Yunnan (Truba & Zou, 1994); Naxi minority in Yuannan (Yu, 2008); Yao

minority in Guangdong (Nam, 1996); Korean minority in northeast China (Gao, 2007, 2008); Tibetan students in Tibet and Qinghai (Wang, 2007; Zhang et al, 2008; Seeberg, 2006, 2008); and Mongols in Chinese universities (Zhao, 2007). The following table summarizes the studies covered in the literature review:

Table 1: Summary of Literature on Minority Education in China[5]

	Ethnic Groups	Study Location	Author (s)	Year
1	Yi	Sichuan	Harrell	1990
2	Miao	Yunnan	Truba & Zou	1994
3	Yao	Guangdong	Nam	1996
4	Yi	Yunnan & Guizhou	Harrell & Ma	1999
5	Dai	Guizhou	Hansen	1999
6	Tibetan	In boarding schools in inland	Postiglione, Zhu & Jiao	2004
7	Dai, Qiang, Pumi, Naxi	Yunnan	Bradley	2005
8	Tibetan	Qinghai	Yi	2005a
9	Tibetan girls	Tibet	Seeberg	2006, 2008
10	Tibetan	Qinghai	Wang	2007
11	Mongols	In universities of China	Zhao	2007
12	Korean	Northeast	Gao	2007, 2008
13	Uyghur	Boarding school in inland	Chen	2008
14	Tibetan	Tibet	Zhang, Fu & Jiao	2008
15	Naxi	Yunnan	Yu	2008
16	Yugur	Gansu	Ba	2009
17	Uygur	Southern Xinjiang	Ma, R.	2009
18	Zhuang, Yi, Uygur	In China	Adamson & Feng	2009
19	Machu Tibetan	Sichuan, Gansu, Guangxi, Yunnan, Ningxia	Gelek	2009
20	Policies	Yunnan	Dai and Xu	2009
21	Hui	Shandong	Ma, X.	2009
22	Home language	In Western China	Hong	2010

Ma's study (2009) investigated the fundamental modes and developing processes of bilingual education in Xinjiang, concentrating on the Uygur population in Kashgur which is in the southern area of the province. He analyzed a myriad of government documents, statistical data and research literature, and concluded that many issues called for more research pertaining to how to promote and develop bilingual education in Xinjiang, due to many relevant problems remaining unsolved. Because there was great regional variation, the various extant modes of bilingual education in each area must be taken into consideration.

Hong (2010) conducted a survey investigating effects of home language usage during minority students' transition from elementary to secondary schools in western

[5] All the references in this table are summarized in Appendix B.

China. The study reveals that non-Chinese-speaking minority students encountered a great disadvantage in the transition to senior high schools due to lack of Mandarin proficiency. Yet, surprisingly, the study found that it was more complicated for them to transit to junior middle schools. It further suggested that in the northwest rural areas, non-Chinese-speaking minority students who benefited from a completely bilingual education system were at the greatest disadvantage in educational transition.

In general, no research has been found with regard to Chinese teachers' beliefs about minority students and associated instructional strategies, and there is only little research on the education of ethnic minorities in Xinjiang Uygur Autonomous Region.

What Has the Literature Review Told Us?

In relation to this study, three conclusions are drawn from this literature review. First, although more and more attention has been drawn to teachers' beliefs and the effects on students' learning, there are few empirical studies to investigate possible alternative mental models (beliefs), which might exist in different cultural value systems. That is, even with an evolution in research frameworks and a growing literature, much of the research on teachers' beliefs has continued to examine the experiences of the U.S. teachers, rather than teachers elsewhere. Additionally, there is little research on the influence of Chinese teachers' beliefs about diverse students on their instructional strategies. The existing literature, especially in English-language, about the education of minority students in China mainly concentrates on few ethnic student groups including Tibetan, Yi, Miao and Hui, and in the several provinces such as Yunnan, Guizhou and Tibet. The site where the study was situated – Xinjiang, was seldom studied, but it is worth studying due to its rich varieties of ethnic, linguistic, financial and religious diversity.

Second, the methods used in the studies on teachers' beliefs both in China and in the U.S. have paid insufficient attention to empirical, repeatable, verifiable research with

comparisons across sites. Future research should include multiple sites with methods that could be repeated and verified. Holistic qualitative research should include methods driven by the frameworks that allow multiple sources of data and triangulated findings. Mixed method designs should include data collected across multiple sites. The survey data of teachers should be supplemented with qualitative data from interviews, observations and artifacts in order to appropriately understand teachers' beliefs and how their beliefs' mediate teaching and learning. Hence, to add to the scholarship of understanding teachers' beliefs and their effects on students' learning, I conducted a study with mixed methods investigating teachers' beliefs about diverse students, and their associated teaching practices in the capital city of the biggest province in west of China. The province (autonomous region) is the most diverse in the country, ethnically, linguistically and socio-culturally (see later section herein on site selection) and so is an excellent place to explore these issues in a non-western culture.

Third, the framework used in research on teachers' beliefs were successful at understanding and explaining correlations between teachers' beliefs and the associated instructional practices and resultant student performance. However, the frameworks applied in the research focus on individual interactions among participants such as teachers, students, administrators, parents and other interested citizens. To fully understand teachers' beliefs as a dynamic classroom practice mediator, an ecological, systems-based approach should be adopted to investigate the cultural and historical complexities and interrelations of individuals, institutions, traditions (history), and regulations/policies in context. Valencia et al (2009) claim that "More than ever before, there is a need for an approach that can dialectically link the individual and the social structure. CHAT (Cultural-Historical Activity Theory) has been elaborated with this task in mind" (p. 19). By making an activity system the unit of analysis, CHAT allows researchers to look at the developmental processes shaping and reshaping teachers'

beliefs in both present and historical contexts, and to investigate the dynamics of the dialectic links in the teaching activity system that inter-relate identity, agency, rules/frame factors, tools, community and the division of labor[6]. Hence, Cultural-historical activity theory was employed as the theoretical framework to guide data collection and data analysis for the study.

Theoretical Framework

> Schools are sites in which people come together from various social worlds to construct and enact the rituals and routines of schooling in everyday practice. These rituals and routines entail two distinctive but related educational processes: the intentional or overt pedagogical practices, or direct teaching and learning in classrooms, and…the values, beliefs, and norms that are enacted during day-to-day life in schools. These normative routines and rituals of schooling are central mechanisms in processes of subject formation.
>
> --- Hall (2002, p.88)

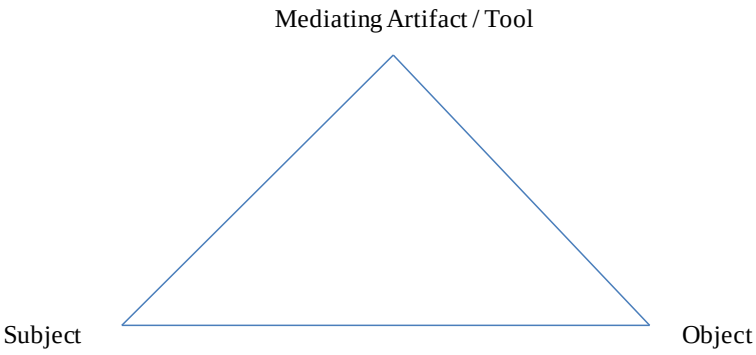
This section discuses some aspects of Cultural-Historical Activity Theory (hereinafter CHAT) that the study employed as a lens through which the relations between teachers' beliefs and the associated instructional practice has been studied. As Shulman & Shulman (2004) assert that teacher learning and development occur within communities and contexts. Socio-cultural theories are often seen as useful for understanding teachers' learning and development, because these theories recognize that learning is an on-going, continuous, complex and complicated process which takes place in socially and culturally mediated contexts, and these theories focus on interrelatedness of individual, social and cultural elements. "In contrast to purely cognitive views of learning in which learning is thought to occur within each individual, sociocultural theory recognizes that learning occurs in the social interactions between people in relation to the tasks they are performing and the contexts in which they engage in those tasks and interactions." (Monkman et al, 2003, p. 247).

[6] More details refer to the section of theoretical framework.

Such learning and development from a sociocultural perspective can be defined as the ways in which individuals internalize and transform cultural tools as they participate in the social practices inherent in the work of teaching (Vygotsky, 1978). Roth and Lee (2007) assert that "[CHAT] has shown to be fruitful for both analyzing data recorded in real classrooms and designing change when trouble and contradictions become evident in these [social] and cultural settings" (p. 188).

Engeström (1987, 1994, 1999a, 2009) developed the third generation of activity theory, a meta-theory which he called CHAT, from the first generation of activity theory of Vygotsky (See Figure 2) and the second generation of the theory of Aleksandra Luria (1981) and Leont'ev (1974, 1978, 1981) who incorporated societal, cultural, and historical dimensions into an explication of human mental functioning (Roth and Lee, 2007).

Figure 2: Vygotsky's (1978) Model of Mediated Action



Since the late 1980s, CHAT has gained dramatic and international attention in the fields of education, psychology and social science due to publications and presentations by Engeström and Cole (Roth et al, 2004; Kaptelinin & Nardi, 2006). Although Toomela claims the CHAT comes to a dead end for cultural-historical psychology (2000) and for methodological thinking in cultural psychology (2008), other scholars advocate that CHAT remains useful, especially for educational research (Grossman, et al., 1999; Grossman, et al., 2000; Johnson et al, 2003; Smagorinsky et al, 2002; Roth et al, 2004; Clift and Brady, 2005; Roth & Lee, 2007, LCHC, 2009). In the past decade it has been

increasingly used by more and more educational researchers (Edwards et al,2002; Karaagaç & Threlfall, 2004; Roth et al, 2004; Roth & Lee, 2007; Pearson & Ralph, 2007; Venkat & Adler, 2008; Yamagata-Lynch & Haudenschild, 2009; Pearson, 2009; Valencia et al, 2009; Ellis et al, 2010).

Ellis et al (2010) demonstrate the contributions of cultural-historical activity theory (CHAT) toward understanding of teacher professional development: what, how and where teachers learn. And both Pearson (2009) and Valencia et al (2009) have used CHAT for better understanding teacher preparation, because activity theory provides a specific way to think about and understand the situative nature of teacher development. Pearson conducted a study in the context of the English systems focusing on preseverice teachers' conceptualizations of special educational needs and/or disabilities. She collected data through word association and employed activity theory to analyze the data. Her study revealed that all preservice teachers need a degree of knowledge about the systems and procedures for meeting special educational needs, which have "to be located within the context of understanding the role of attitudes and beliefs, and ways to develop and contribute to an inclusive curriculum" (p. 9).

Valencia et al (2009) used CHAT to study experiences of student teaching to see how novice teachers interacted in specific contexts that provided opportunities for them to learn to teach language arts. They found that all members in the system simultaneously interacted in multiple settings and encountered competing demands that shaped what and how they acted in these settings. Unfortunately, opportunities for student teachers to learn to teach, such as feedback on teaching subject matter, often times got lost in this milieu of settings and demands. Hence, they concluded, "The structures that frame student teaching and its participants have deep roots in the cultures of universities and schools that must be considered if student teaching is to maximize its potential" (p.1). They further argue that CHAT may illuminate the underlying contradictions that give rise to both failures and

innovation in teacher education, because it analyzes the broader activity context instead of individual actions, echoing Shulman & Shulman (2004).

Therefore, this study employed some aspects of CHAT as its theoretical framework to guide data collection and further to explore the data collected in real classrooms in cross-cultural settings for better understanding how teacher beliefs, which have historically been understood to be essentially individual cognitive processes, both shaped, and are shaped by, the social and organizational conditions of teachers' collective work. CHAT theory is elaborated in the next section.

Engeström's (1987) Cultural-Historical Activity Theory (CHAT)

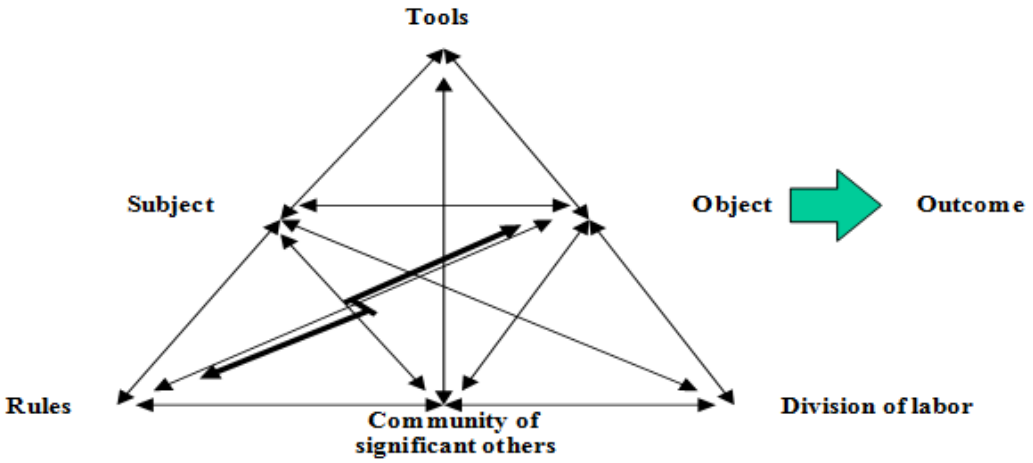
Evolved from the cultural-historical school of psychology, Engeström's (1987) CHAT has threefold historical origins in classic German philosophy (from Kant to Hegel), in the writings of Marx and Engels, and in the Soviet Russian cultural-historical psychology of Vygotsky, Leont'ev and Luria (Engeström, 1999a)[7]. Based on Vygotsky's and Leont'ev and Luia's work, Engeström emphasized three additional components that explicate the social structure of activity into the unit of activity:

1) *Rules*: The rules include political and legal policies, regulations, standards and stipulations, and also relations with other participants in the activity. The subject's actions in the system are regulated by rules toward an object.
2) *The community*: all members in the system who share a interest/goal and who are involved with the same object;
3) *The division of labor*: who does what toward the object to realize a goal, including both the relatively horizontal division of tasks and the vertical division of power, positions, access to resources as well as benefits

The relationship of the three components is presented in the activity system model by Engeström below (See Figure 3):

[7] More historical overviews of CHAT can be found in Roth and Lee (2007).

Figure 3: Activity System Model by Engeström (1987)



Since the unit of analysis of CHAT is the activity in the system, the theory makes it possible to look at whole dynamic relationships and interactions while realizing shared goals in an activity system for understanding the life of larger population. Engeström (1999a) defines an activity system as "a multivoiced formation. An expansive cycle is a reorchestration of those voices, of the different viewpoints and approaches of the various participants. Historicity in this perspective means identifying the past cycles of the activity system. The reorchestration of the multiple voices is dramatically facilitated when the different voices are seen against their historical background as layers in a pool of complementary competencies within the activity system" (p. 35).

Engeström points out that for analyzing a milieu of human life, separate, specific activities can be isolated based on the criteria of objects and the motives that elicit them. Once an activity has been singled out, actions which he defines as the processes subordinated to conscious goals-- can be isolated and analyzed. And then, it becomes possible to closely observe the operations that directly depend on the conditions of attaining concrete goals (Foot, 2001). The higher order processes of production, exchange, distribution, and consumption also demand attention when analyzing an activity system.

The activity theory is goal-directed, but pays more attention to the dialectic relationship from a developmental and historical perspective. CHAT focuses on what people (in the activity system) actually do, the objects that motivate their activity, the tools they use, the community of which they are part, the rules that subjects follow and that pattern their actions, and the division of labor they take in activity (Roth et al, 2004). In addition, CHAT is a theory for analyzing problems and relations at several levels within systems (Bjørke, 2004). Influenced by a realist approach, CHAT analysis can reveal specific conflicts and tensions between/among different communities of stakeholders (Redmiles, 2002).

Bjørke claims CHAT can be thought of as a flexible lens that can be tightened down to look at particular aspects or problems in an activity system, or it can be widened to look at problems that may arise between different activity systems in the network of the primary system. LCHC (2009) asserts that CHAT-inspired research captures the complexity of the dynamic interactions between individuals in groups that routinely occurs in schooling settings, "by focusing simultaneously on the activities or practices that contextualize these interactions. It also focuses on microgenetic changes, ontogenetic changes and cultural historical changes in relation one another" (p.4). The explanatory power of CHAT as a guide for data collection and analysis for this study is then discussed next.

Explanatory power of CHAT

1. Cultural and historical perspective

Engeström (1993) asserts that CHAT is deeply contextual and oriented toward understanding historically specific local practices, their objects, mediating artifacts, and social organizations. By making activity the minimal unit of analysis, it is possible to analyze the dynamic and complex daily practices in the classroom from a cultural and historical perspective. This study focused on how *rules* – political and organizational

frame factors mediate or manipulate *subjects* who have various personal frame factors such as their beliefs in their decision-making relative to their *tools* (curriculum and pedagogy) in pursuit of object (student learning) through collective action of *community* – cultural and historical frame factors. Teachers come to the activity of teaching with existing personal frame factors – mental models (beliefs and ideologies about teaching and learning) that have been shaped socially, culturally, politically and historically in their individual circumstances, e.g. home, schools, communities, and university-based or other alternative teacher education programs. Thus, cultural context might be a possible influence on the development of teachers' beliefs about students in terms of gender, ethnic, linguistic, and socioeconomic diversity. Although at the inception of their teaching careers teachers may have been trained in similar programs and therefore may hold similar beliefs about teaching and learning, their beliefs could change dramatically as they are melted into the social fabric of their first school with particular political and organizational frame factors.

As Pang and Sablin (1998) suggested, in-service teachers may have been influenced, over time, by the beliefs and attitudes of other teachers who were not successful in working with minority students. The beliefs that determine a teacher's sense of responsibility for her students' learning could well be reinforced in School A, which has students from mainstream with high test scores, or from high socio-economic status; while the same teacher's beliefs about her responsibility for student learning could decline over time were she situated in School B, which is ethnically diverse with a large student achievement gap. Further, teachers' beliefs unconsciously mediate the actions of other participants in the system (students) and the objects of their own and their students' actions. That is, teachers' beliefs were unconsciously associated with their natural daily practices, e.g. their treatment of students and others in the school community, their selection of the objects of their actions (what and how to teach), and their direction on

division of labor (i.e. differentiating their, and their students,' responsibilities based on their roles). With its dialectical core, CHAT can be very helpful as a framework for understanding interactions and tensions/contradictions between rules and tools, rules and division of labor (responsibilities) and interactions between both teachers and students as well as between teachers and teachers. For instance, teachers' beliefs (subject/personal frame factors) mediate their teaching activity, which, in turn, could shape, or be shaped with, various institutional resources in the community such as cultural frame factors, and personal frame factors of other members, etc.

2. The Developmental feature of Personal frame factors

Rules are normally thought of as being consciously created by the actors (subject) in the system. Beliefs and the mental models that drive them, are like rules in that they influence decision/strategies for teaching. However, they are unlike political or legal frame factors (rules) in that they are not consciously created. Since Engeström (1999c) claims that CHAT is a developmental theory, which seeks to explain and influence qualitative changes in human practice over time, it is then valuable to historically understand how social cultural capital such as teachers' beliefs and identities – personal frame factors, change over time in their social organization (the specific local teaching practices in classrooms). In order to understand why teachers set up different objects of actions and various standards for different student groups, we need to understand how their personal frame factors (beliefs about teaching and learning) are associated with operations and interactions which might, in return, influence beliefs in the activity system from a developmental point of view. That is, in the activity system, the actual relations between elements of the system are reciprocal and transactional.

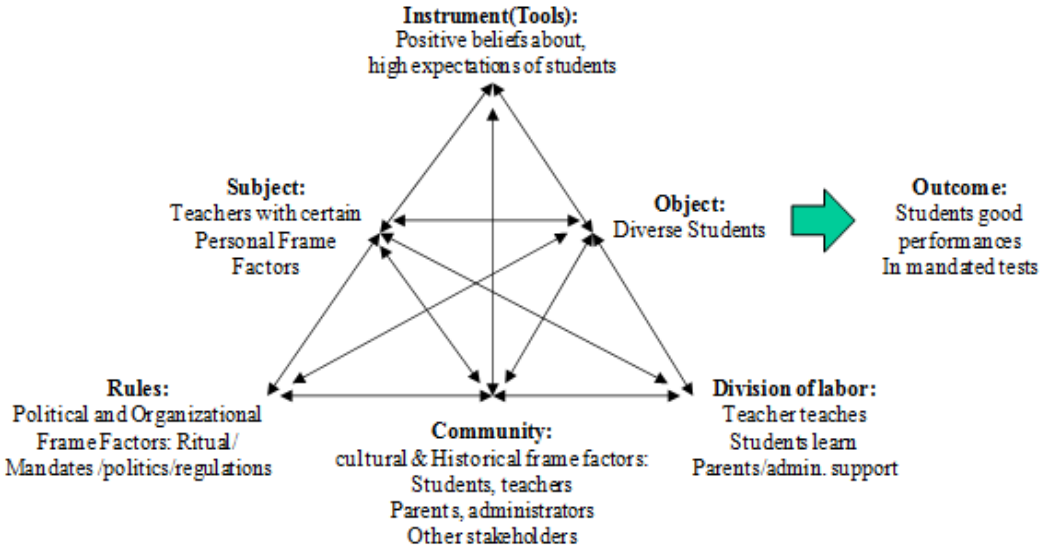
CHAT also recognizes that a person's framework for thinking is developed through participation and problem solving in specific environments which themselves are shaped by both present and historical contexts. Teachers' beliefs and identities might

encounter some trouble and contradictions when teachers are teaching students with whom they are not familiar, and so the activity of teaching might change teachers' beliefs and perceptions over time. Another possibility is that teachers' beliefs and identities could be reinforced by their daily experiences in classrooms. For instance, when teachers see the students from low SES perform poorly due to a defective family environment, the cultural model of deficient students with defective family and negligent parents will be reinforced. The personal frame factors of students, perhaps their identity as less able students, may be reinforced at the same time, especially given the teachers' power and authority of agency. Investigating the developmental process of shaping and reshaping beliefs in both present and historical contexts may shed some lights on helping teachers surface and reevaluate their own beliefs (personal frame factors).

In order to understand what and how teachers teach in the schooling system, a range of complex interacting frame factors have to be identified. These frame factors include political and organizational frame factors such as educational policies and guidance at both local and national levels, school rules and rituals; personal frame factors such as teachers' beliefs about teaching and learning, and about diversity especially for this study; and cultural and historical frame factors such as shared beliefs of the community. For better understanding of the data, I borrowed personal, cultural and political-organizational frame factors from Posner (2004) and Poetter (2007), and used them in the theoretical framework to be more explicit and specific about what the study tried to investigate. To serve the purposes of the study, I focused on investigating, individually and collectively, personal frame factors in the "subjects", cultural and historical frame factors in "community", and political and organizational frame factors in "rules" in Engeström's system model (see below). Further, the dialectical relationships among the elements of the system were explored as well using the related aspects of

CHAT as analytical tools. The system model that was utilized in this study is depicted in the figure below.

Figure 4: Activity System Model Used in the study



Posner (2004) introduces educators to the concept of frame factors, which can be personal, physical, temporal, economic, organizational, cultural, political and legal. Posner claims that these frame factors can, as resources and constraints, produce both positive and negative effects on classrooms or school settings independently or in combination. He calls for attention to the impact of these frame factors on curriculum implementation, when these factors function as limitations or constraints on teaching. Posner gives brief explanation for each of the frame factors that pertain to schooling (p. 201):

- Personal: Backgrounds, mastered knowledge, interests of students, staff, and parents
- Physical: Natural and built environment; materials and equipment
- Temporal: Time; amount, regularity, frequency, duration, scheduling
- Economic: Costs and benefits broadly conceived
- Organizational: Administrative factors, including class size, ability groupings, policies, rituals
- Cultural: Values and beliefs of school and community
- Political-Legal: State and federal mandates, limits, requirements, regulations

Focal frame factors for the study

I chose personal, cultural and historical, political and organizational frame factors as the focal points, because I sensed they, as predicted by CHAT, are more likely than the others to influence teaching practices at school and classroom levels in the centralized educational system cultural context in China, though the other frame factors unquestionably also play an active and important role in schooling. The personal frame factor of subject is important because it is the key factor throughout all activities. On a daily basis, it directly and/or indirectly impacts all members in the community – students, teachers, parents, administrators and other stakeholders, all of whom have come together with different personal frame factors of their own. This study focuses on teachers' personal frame factors including personal backgrounds, mastered knowledge, and interests which are more likely to affect what kind of persons (subjects) become involved in an activity system. This is crucial because the mastered knowledge, for instance, could positively or negatively influence the realization of objects – the outcome. Posner claims that the "teachers' beliefs about such things as the formality of their role with children, how children learn, classroom management, the nature of knowledge, the reasons for learning their subject matter, and their role in curriculum decision making, determine the degree to which a new curriculum 'fits' in a particular teachers' classroom" (p. 198). The personal frame factors of teachers themselves vary, and adding complexity, teachers' knowledge of their students matters because it enhances their ability to teach students effectively. Such knowledge of students would include their cultural backgrounds, experience, interests and prior knowledge. Poetter (2007) asserts that no two classes, and no two students, come into a lesson with the same prior knowledge, previous experiences or speed and method of learning. Hence, recognition of the importance of personal frame factors is crucial for successful education.

A growing body of literature investigates the influence that the relative backgrounds of teachers have on student academic success. It is argued that teachers' personal frame factors influence the content taught, pedagogical choices, and interpretations of classroom situations and students' behavior (Smith, 2000). To make matters more complicated, students' personal frame factors as who they are produce impact on their learning as well. After reviewing ample empirical literature regarding the effects of teacher race/ethnicity, Villegas & Davis (2008) conclude, "…there is sufficient evidence to suggest that teacher's race and ethnicity do matter in the education of students of color" (p. 599). Studies on racial pairing of teachers and students provide evidence that teachers of a given ethnic background often have less favorable perceptions of students who are of a different ethnic background than they do of students of their own ethnic background (Oates, 2003; Dee, 2005). Also, many pre-service teachers have negative attitudes about racial, ethnic, and language student groups other than their own (Zeichner & Hoeft, 1996).

Garcia & Pugh (1992) and Sleeter (1995) identify three of the main background attributes of preservice teachers that affect their attitudes about, and instructional practices in relation to teaching, culturally diverse students: 1) race, gender, and social class membership; 2) prior experiences with diversity; and 3) support for ideologies of individualism. Youngs and Youngs (2001) elaborate five factors correlated to teachers' positive beliefs and attitudes about ELLs, two of which pertain to individual background: personal experience with foreign cultures, and female gender. Both Dee (2005) and Brodsky (2009) claim that teacher gender produces significant effects on teaching and learning as well. Teachers' language-related experiences also affect their attitudes toward ELLs and their instructional practices (Byrnes, et al, 1997; Youngs & Youngs, 2001; Walker, et al, 2004). For instance, bilingual teachers are significantly more supportive of

ELLs' use of their native language in class, which use is helpful to student learning (Garcia-Nevarez et al, 2005, Villegas & Davis, 2008).

The research supports that students of a given ethnicity, when exposed to teachers of their own ethnicity who hold high expectations, are familiar with students' communities, and thus able to relate the curriculum to students (Villegas & Lucas, 2002; Sleeter, 2008; Villegas & Davis, 2008), are more likely to achieve academic success through lower rates of absenteeism (Farkas et al, 1990), significantly increased enrollment in challenging courses such as Algebra II (Klopfensten, 2005), and reduced drop-out rates, and increased college matriculation rates (Fraga et al, 1986; Hess & Leal, 1997). All the literature reviewed here indicates that teachers' linguistic, racial, and ethnical, cultural and gender backgrounds do matter in students' education.

The subject's personal factors are closely related to cultural/historical frame factors – values and beliefs of the community which shape, and are shaped by, personal values and beliefs in the community. Posner (2004) calls for special attention to levels of cultural factors, that is, two different sets of cultural frame factors: the culture within a school, and the culture of the community in which the school exists. (Poetter, 2007) agrees to Posner, but adds that there are also unique combinations of culture within each individual student and colleague. Cultural diversity expands worldwide, and educators must actively adapt their instructional practices to meet the needs of the cultural groups reflected in their classrooms. To make more effective teaching choices teachers have to analyze and understand the cultures within their classrooms as well as the cultures within the community. On one hand, by acknowledging cultural background information, teachers can adapt their teaching practices to better meet the needs and interests of their students. On the other hand, the cultural frame factors of the community could and would have some impact on daily schooling activities.

It is undeniable that political and organizational frame factors are also closely linked with cultural frame factors. Posner (2004) reminds us that "classrooms are not autonomous units." (p. 195). Classroom events are greatly influenced and determined by state mandates. Political and organizational frame factors as rules influence which individual(s) can do what and how. These factors include national mandates, regulations, policies and requirements - especially the mandated standardized testing including provincial entrance examinations for middle school and the national entrance examination for college in the case of China. The enrollment rate means almost everything for schools and teachers in China. One example is that it is tightly related to teachers' salaries.

In order to hold schools, teachers, and students accountable, the Ministry of Education historically prescribes a particular set of tests at different levels, together with a complete set of textbooks, as part of centralized education. In this way, everyone involved in schooling including teachers, students, parents and administrators concentrates their attention on those tests, and they cannot risk trying something else. Consequently, what happens in Chinese school settings is quite similar to what Posner (2004) describes in the U.S. schools, "the greatest impact on local classrooms from the state education bureaucracy comes from state-mandated testing, because once the state decides to require those tests, the textbooks used in schools, advice from professional journals, admonitions from schools of education, the students' expressed needs and interests, parents' objections and the teachers' better judgments all get pushed aside" (p. 196).

CHAT theory enables the study to understand how teachers' beliefs (personal frame factors) in the complex teaching and learning activity system. The effect for teachers' beliefs on students is a "collective" activity across a community involving not only the teacher and her students, but also other teachers in the school, administrators, parents, and citizens interested in local education. Thus, the activity system's structure is expanded to understand the cultural and historical frame factors of the community which

includes not only the classroom, but also the school, families and neighborhood. Each subject in the community comes to the activity system with their own personal frame factors which have been culturally shaped and mediated by multiple visions, expectations, histories, past experiences, tools, and settings, and have been constructed and negotiated over time, thus further complicating the setting (Valencia et al, 2009).

CHAT posits that each role, each person, comes to the setting with past experiences, beliefs, and knowledge – various personal frame factors. Thus, understanding the confluence of demands, histories, and expectations (both explicit and implicit) in instructional practice in natural daily contexts is essential to understanding the challenges of improving teachers' practice (Valencia et al, 2009). To understand teachers' beliefs about student groups as a mediator of their instructional practices, the elements in the system – tools, objects, subjects with personal frame factors and communities with cultural and historical frame factors, rules of political-legal and organizational frame factors and the division of labor in the primary activity system – must be considered together, because they stand in transactional relation to one another. In addition, other activity systems that are part of the primary activity system must be taken into consideration too.

The next chapter discusses the methods the study adopted, data collection procedures and data collected, as well as the researcher's dual position of insider and outsider.

Chapter Four – Methodology

This chapter discusses the research design and approaches, including study timeframe, site selection, participant selection and recruitment, data collection methods and procedures, and data analysis techniques. It also examines how issues like the researcher as a research instrument and her cultural and social biases and identities might influence the approaches and interpretation to data collection and analysis. It further elaborates the researcher's dualistic role of insider and outsider throughout the entire research process.

Methodological Approach

I engaged in a mixed method study in China to examine what are the Chinese teachers' beliefs about and expectations of, their students with different demographic and financial characteristics from what the teacher perceives as the norm, and how these beliefs and expectations influence their teaching practices, and students' learning. The study incorporated a combination of a quantitative analysis of survey results with a qualitative analysis of interviews in three schools in Urumqi, China. The instruments included a 66-item questionnaire and two sets of semi-structured interview protocols, one for teachers and the other for administrators at both school and district levels. All the instruments were originally written in English, piloted and improved in U.S.A. schools, then translated into Chinese, and again improved after further pilot study in Urumqi.

Mertens (2010) claims that mixed methods can be used to answer questions that could not be answered in any other way especially in a complex educational or social context, because techniques from both the quantitative and qualitative research traditions are incorporated, which enriches the researcher's ability to draw conclusions about the problem under study. Creswell and Plano (2007) assert, "… in 5 to 10 years, most research in the social, behavioral, and health sciences will incorporate mixed methods strategies either in a single studies or across programs of studies. Mixed methods is,

simply, best suited for addressing many of today's complex research questions, which require context and outcomes, meaning and trends, and narratives and numbers" (p. 184).

Creswell (2003) suggests the use of a mixed method approach when a research site calls for open-ended observations and closed results. In order to get an accurate picture of how teachers' beliefs about their students influence their instructional decision-making, it is necessary to think about teachers' beliefs and expectations in an open-ended way, while considering their selected instructional practice as closed results. Applying mixed methods has provided approaches to enrich research findings and to enhance the study's scientific rigor via data triangulation. With the ethnographic data, I tried to capture the social interactions, the cultural accounts and interconnections, and the daily decisions of the Chinese teachers in their teaching practices. Through methods of in-depth semi-structured interviews, participant observation, and the researcher as instrument, the specific beliefs of Chinese teachers, regarding their Han and non-Han students, poor and rich students, as well as the students with and without Mandarin language proficiency, were collected.

Being exploratory and investigative, qualitative methods helped capture an "emic" view of individual teachers' beliefs about their students with different backgrounds in terms of race, ethnicity, language and social class, and to provide further detailed evidence for the interpretation of the quantitative data, though they are not conclusive and cannot be used to make generalizations about the teacher population. Quantitative data provided opportunities to determine teacher beliefs about diverse students, and to cross-analyze data in terms of multiple demographic factors such as teachers' backgrounds in relation to students' backgrounds. The anonymous questionnaires created an opportunity for teachers to express themselves more authentically, which made it possible for me to compare the findings with what was found in the qualitative data. Furthermore, the relatively large sample size of the survey

data helped paint a bigger picture of how teachers as a group tailor their instructional practices based on their beliefs about different students. It has also reflected the social, professional, and organizational contexts in which teachers work, which is very important for a better understanding of the multiplicity of cultural tools, artifacts, frame factors and historical precedents in the schooling system.

Details of the method will be further discussed in the later sections on data collection and data analysis.

Timeframe

The data collection was conducted in the spring semester, 2010. The on-site research started in late March and ended in mid June – duration of three months. In China, there are two semesters per school year: autumn semester and spring semester. The spring semester generally starts in late February or on March 1st, and ends around early July, while the autumn semester usually starts on September 1st, and ends around the middle of January.

There were three reasons why this research was planned to commence in late March and end in mid June. First, the school year starts in autumn semester when teachers most likely have new students. I chose the spring semester when most of the eighth grade teachers have had their students for about one and half years (one year in Grade 7 and half year in Grade 8), or at least more than half a year for some who took the classes from Grade 8, and so they knew their students well enough to be able to talk about them. Second, both teachers and administrators are busy at the beginning of the semester. Third, the important annual examinations including provincial entrance examinations for senior high school and the national entrance examination for college are generally in late June and early July. During both periods, early March and late June, administrators and teachers are too busy to find time to work with researchers. In addition, schools are in

great tension preparing for the exams. Students and parents do not expect or allow any distraction as well.

Site Selection

The Country, the province and the city

Hall (2002) emphasizes the importance of traditional ethnographic studies to be situated within the local cultural sites so as to more fully capture and understand local customs and traditions. Therefore, for the purpose of this study, I did the research in Urumqi, Xinjiang Uygur Autonomous Region, the People's Republic of China. There are five autonomous regions in China: the Tibetan people in Tibet, the Zhuang in Guangxi, the Uygur in Xinjiang, the Mongols in Inner Mongolia, and the Hui in Ningxia. There are about 155 ethnic minority autonomous prefectures and counties. Most of the autonomous regions, prefectures or counties have solo minority groups, but Xinjiang has a very unique situation with 47 of the 56 officially designated ethnic groups living in the Region. By the end of the 19th century, 13 major ethnic communities had established themselves there: Uygur, Han, Kazak, Mongolian, Hui, Kyrgyz, Manchu, Xibe, Tajik, Daur, Uzbeks, Tatars and Russians. The Uygur – Turkic Muslims comprises the majority, and this multiethnic pattern remains today[8]. Many of these 13 ethnic groups differ from Han Chinese linguistically and culturally.

Geographically, Xinjiang is located in the northwest of the country. It has 5,600 kilometers of international borders neighboring eight countries from southwest to northeast, including India, Pakistan, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Russia and Mongolia. It extends from latitude 34°22'to latitude 49°33' north and longitude 73°41' to longitude 96°18' east, yielding 1650km north-south and 2000km east-west. Xinjiang has three major mountain ranges – the northern Altay Mountains, the middle Tianshan Mountains, and the southern Kunlun Mountains. Between these

[8] Retrieved November 18, 2009 from http://www.china.org.cn/english/null/139499.htm.

mountains, there are the two desert basins– the Zhunger Basin in the north and the Tarim basin in the south. Xinjiang occupies one sixth of China's total territory with an area of 1.66 million km^2. According to the 2009 Xinjiang Statistics Yearbook, the total population in 2008 in Xinjiang was 21.13 million, among which 12.94 million (61.23%) were minorities. Uygur was 9.83 million, equivalent to 46.52%; Han, 8.36 million, equivalent to 39.56%; Kazaks, 1.51 million, 7.14%; and Hui, 0.95 million, 4.50%[9]. In the Region, there are 5,918 elementary and secondary schools with 241,526 teachers[10].

Urumqi is the capital city of Xinjiang, and it lies in a green oasis with the ice-capped Bogda Peak and the vast Salt Lake in the east, and the thick pine-covered Nanshan mountains in the west. It borders the Gobi desert in the north, the Zhunger Basin with moving sand dunes in the northwest, and the Tianshan Mountains in the south. Being 2,250km away from the nearest coastline, it is the furthest city from the ocean. Also it is about 30km away from the spot considered the center of Eurasia. Historically, Urumqi was an important town on the northern route of the Silk Road, which created a tremendous network of trade routes and also social and cultural exchanges throughout Eurasia.

With an urban population of over 2.36 million people in 2008 (Xinjiang Statistics Yearbook, 2009), Urumqi, whose name means "beautiful pasture" in the Mongolian language, is the largest city in China's vast western interior. Details of Urumqi population distribution are presented in Table 2 below. As a capital city, it faces similar challenges to those faced by schools in metropolitan areas filled with different ethnic groups in the U.S., including education access and equity (i.e., unproportionate distribution of qualified teachers), language proficiency (bilingual issues), cultural transmission (Chinese mainstream vs. minority), uneven financial status, achievement variations among ethnic

[9] Details of population composition in Xinjiang are presented in Appendix C.
[10] For more details on Grade 1-12 schools in Xinjiang, refer to Appendix D.

groups and so forth. Hence, it is valuable to study Chinese teachers' beliefs about their diverse students to provide information for comparison with similar studies in the U.S. Such international comparisons can help us see with new eyes, opening vistas of understanding otherwise not available to help both China and the U.S. deal with K-12 education challenges.

Table 2: Population Distribution of Urumqi City (13 major ethnic groups)

Ethnicity	Population	Percentage	Ethnicity	Population	Percentage
Han	**1,723,448**	73.01%	**Kyrgyz**	17,330	0.07%
Uyghur	**299,129**	12.67%	**Uzbek**	1,974	0.08%
Hui	231,961	9.83%	**Xibe**	5,024	0.21%
Kazakhs	**646,937**	2.73%	**Russian**	3,414	0.14%
Manchu	9,926	0.42%	**Tajik**	204	0.009%
Mongol	9,234	0.39%	**Tatar**	956	0.04%
Daur	551	0.02%	**Others**	8680	0.36%
Total Population in Urumqi: 2,360,527					

Note: The source is from Xinjiang Statistics Yearbook, 2009 (Table 3-7).

Chinese schools

With a total population of 1.3 billion, the Chinese schooling system is huge[11]. After the founding of the People's Republic of China in 1949, the fundamental Confucius education traditions were changed by a heavy Soviet influence. Schools and universities were closed during the Great Cultural Revolution during the 1960s, and reopened about ten years later. The 1980s saw educational reform along with the Open Door economic policy of Deng Xiaoping. Various studies reveal that the Chinese educational system has since been greatly influenced by Western education traditions, especially from the U. S., including standardized tests, nurturing students' creativity and individuality, and student-centered pedagogy (Carney, 2008; Huang & Boshier, 2006; MOE, 2001).

In China, Grades 1-6 are elementary, Grades 7-9 are junior high, and Grades 10-12 are senior high. After graduation from junior high (nine years of school is mandated by the "9-year compulsory education law") students can choose to enter the workforce, to attend vocational schools to develop skills for future work, or to matriculate to senior high

[11] For a sense of the scale of the Chinese educational system refer to Appendix E.

school to prepare for college[12]. All K-20 schools use the two-semester school year described earlier. There are two holidays: Winter holiday for the Chinese New Year, called the Spring Festival, and a summer holiday to avoid schooling during the hottest season of the year (July and August).

Schools generally use the Mandarin – "Putonghua"[13] Language. Schooling time is five days a week. It is common for K-12 schools to have five periods in the morning (from 9am -2pm), and four periods in the afternoon (from 3:30pm – 6:50pm). Each period lasts 40 minutes (some schools have a longer period of 45 minutes). The mornings start with a short period of 30-minute reading Chinese or English aloud: One morning for Chinese, and one morning for English. As a result, both Chinese teachers and English teachers have to come earlier than other teachers every morning, and they are not paid for this extra workload. There is a 10-minute break between each period, but the break between the third and the fourth periods in the morning, which is after 12pm, is much longer, often about 30-45 minutes. During this break, all students do eye exercises at their seats first and then go out to the playground to do morning exercises.

Usually, there are about 10-12 subjects offered to middle school students, including Chinese, English, math, chemistry, physics, biology, geography, history, music, PE, etc. Chinese, English, math, chemistry, physics and biology are considered to be major subjects and are taught almost every day of the week. These subjects are often arranged in mornings when the minds of both teachers and students are most fresh. Lunch break is about 1.5 – 2 hours. Almost all schools have their own cafeteria, but cannot meet the needs of thousands of students, who usually must go to small restaurants nearby (often local fast food) or go home for lunch. Some school cafeterias do provide services to heat

[12] For details of the Chinese schooling system refer to Appendix F.
[13] *Putonghua* is the language commonly used by the Han, Hui, Manchu, Hezhi, and She in China. Large proportions of other minority groups (Mongol, Zhuang, Tujia, Dongxiang, etc.) also speak *Putonghua*. It used to be called "*Mandarin*" in the West and was officially renamed "Han *Putonghua*" (abbreviated *Putonghua*) in 1955 by the Central Government of P.R.C., and the regulations of its pronunciation, grammar, and simplified writing characters were issued in the following years. It is often called "Chinese language" in Western literature (Ma, 2009).

home-made lunch for students. Lots of homeroom-teachers require students to go back to their classrooms immediately after lunch so that they can have a short nap, resting their heads on their arms on their desks, especially in summer. Imagine 50-60 middle school kids napping together in one classroom! The first two periods in the afternoons are formal lessons, but more likely are minor subjects, such as physical education, politics, history, music, geography, etc., which are taught two to three class periods per week. The third and fourth afternoon periods are typically used for self-study periods with or without a teacher's presence, or for interest group meetings, e.g. Chinese calligraphy, airplane models, Chinese papercuts, poetry group, etc.

A class of students uses the same classroom for at least one year. It is not unusual for students to stay in one classroom as classmates for all six years of elementary school, for three years in junior high school, and three years for senior high school. Teachers move from classroom to classroom each period, with students remaining in one classroom; students will be taught in their classroom by perhaps five different teachers each day. The number of teachers depends on how many subjects are on the class's daily schedule. The classrooms are usually very crowded. Typically a class consists of 50-60 students, with individual student desks distributed in a rectangular pattern in seven to eight columns of seven to eight rows per classroom. Often, to save space, individual desks are placed side-by-side together as a pair. In some schools, desks are covered with pretty cloth. Students decorate their classroom themselves, often with student work, or with award certificates that the class won in different activities such as sports, subject competitions, etc. In addition, schools require each class to put up some slogans to encourage students to learn. An example is that Bill Gates' portrait was found in all three selected schools. The students are responsible for cleaning and maintaining their classrooms. They take turns, either in pairs or in groups. There is no janitor in any school responsible for cleaning classrooms.

Teachers share offices either based on the subjects or grades they are teaching. From kindergarten through Grade 12, each teacher specializes in teaching one subject, and very rarely two subjects. The common workload of a teacher, whether teaching major or minor subjects, is to teach ten to twelve class periods per week. Teachers of major subjects (Chinese, English, math, physics, biology, and chemistry) typically teach two periods a day for two classes, for a total of 100 to120 students. A teacher who teaches minor subjects such as history, geography, politics, music, and PE typically teaches one subject two to three periods a day, and typically would teach four to six different classes over the course of a week (200 to360 students), still for a total of ten to twelve class periods per week. Minor subject teachers can handle this many students because much less homework grading is required for minor subjects than for major subjects. Normally, after two or three periods of teaching, teachers spend the rest of their time preparing lessons, grading students' work, or in professional development, either formal, or informal with their fellow teachers in their shared offices. Consequently, the pupil-teacher ratios[14] in K-12 schools are comparatively low. Table 3 presents comparisons of pupil-teacher ratio in Urumqi, in China, and in some other countries[15].

Table 3: Comparison of Pupil-Teacher Ratio in Urumqi, China and Other Countries

Level		**Urumqi 2008**	**China 2008**	**International 2007**					
				Japan	**Korea**	**Singapore**	**South Africa**	**U.K.**	**U.S.**
Elementary		19.1[16]	18.38	*18.49*	*25.59*	*20.42*	*30.98*	*17.24*	*13.80*
Junior High	Secon-	14.81	16.07	*12.22*	*18.06*	*16.36*	*29.02*	*14.01*	*14.56*
Senior High	dary	15.87	16.78						

Remarks:
1. Sources for pupil-teacher ratio in Urumqi are from "Statistics of Urumqi Education Development, 2008-2009" by Urumqi Education Bureau, 2009.
2. Sources for pupil-teacher ratio in China by the Ministry of Education (Retrieved Retrieved dated August 28, 2010 from http://www.moe.gov.cn/edoas/website18/00/info1261549908329900.htm). According to the World Bank (2010), the pupil-teacher ratio was 17.68 for elementary and 16.37 for secondary in 2007.
3. The data in Italics for international are from The World Bank (2010).

[14] Pupil-teacher ratio is the number of pupils enrolled in school divided by the number of school teachers (regardless of their teaching assignment). This definition is from United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics.
[15] For details of pupil-teacher ratios in Xinjiang, refer to Appendix G, and details of pupil-teacher ratios in China refer to Appendix H.
[16] Although class sizes in China tend to be big with 50-60 students per class, teachers are specialized from elementary level, resulting several teachers teach different subjects for the same two classes. Therefore, the pupil-teacher ratio is very close to developed countries such as Japan and the U.K.

There is no system of substitute teachers. If a teacher calls in sick, teachers in the same grade will take her or his classes, since they teach the same materials at the same schedule with the similar methods that they have agreed upon in their lesson study meetings. During breaks between classes, study periods, recess periods and after school, it is very common to see students standing in front of a teacher's desk for extra help. Teachers who don't have students for help at the moment couldn't care less, but continue to do what they were doing. This is a common practice that happens every day in every office. In Chinese K-12 schools, teachers are typically scheduled to teach by rounds[17], except that some excellent master teachers stay in Grade 9 preparing students for the provincial entrance examination to senior high, or in Grade 12 preparing students for the national entrance examination to college. Small rounds are: Grades 1-3; Grades 4-6; Grades 7-9; Grades 10-12; big rounds: Grades 1-6 (elementary); Grades 7-12 (junior and senior high). Lucy, an administrator I interviewed, explained to me that "teaching by rounds" scheduling enables teachers and students to get to know each other better, thus improving both teaching and learning. Lucy also believes that "teaching by rounds" is especially helpful for evaluating teachers' work.

Almost every school has a very well designed and structured front gate. The front gate is open when students come to school in the morning, during lunch time, and when they go home in the afternoon. In Urumqi, there are gate guards, and even policemen at the front gate due to the July 2009 riot. Heavy police vehicles block the street in front of school gates when students come and leave. In addition, all schools have enclosing walls. Anyone who wants to enter or leave a school has to show relevant ID for visitors, or

[17] There are two small rounds at elementary level: Grades 1-3, and Grades 4-6. Novice teachers are usually arranged to teach the same classes from Grade 1 to Grade 3. Such arrangement is expected to provide novice teachers opportunities to get familiar with curriculum materials, and also the students, because they have the same students for three years. Before they teach higher grades of 4-6, they might have to teach several rounds of Grade 1-3, till they are considered qualified to move up. The same rationale is applied for secondary level.

teachers' approval for students. For safety, during recesses and breaks on the school day, students are not allowed to leave the school grounds except at lunch.

The three selected schools

After obtaining the approval of my research proposal by University of Washington Human Subjects Committee, I flew to Urumqi to conduct the study with an introduction letter prepared by my adviser and the Associate Dean of College of Education.[18] To address the research questions (Chinese teachers' beliefs about, and expectations of, Han and non-Han students and students from low and high SES, and how these beliefs influence their instructional practices) in such a way as to maximize credibility and distribution of sources (Merriam, 1998), I selected three urban middle schools[19] with distinctly different school-level demographics:

- Old Elmwood[20] Middle School with a heterogeneous student population: majority Han students together with students from Uygur, Hui, Kazaks and other ethnic groups.
- Double Arrow Middle School with classes of homogenous Uygur students and classes of heterogeneous students;
- Sunflower Middle School with heterogeneous student population but with more low SES students (majority Han students together with students from Uygur, Hui, Kazaks and other ethnic groups)

The three selected schools are at the same level, which means that none of them is a key school[21]. At the first meeting with the Assistant Commissioner of the Urumqi Education Bureau, I explained to her the purpose and design of the study, and she helped

[18] Refer to Appendix I.
[19] In China, "middle school" refers to junior and senior high school, which includes Grades 7 to 12.
[20] The names of the three selected schools are pseudonyms.
[21] Since the 1980s, "key school system" (KSS) in basic education has become an integral part of the effort to revive the lapsed education system in China. The key schools have better educational resources than the ordinary schools, such as sufficient funds, advanced hardware facilities, qualified teachers and academically high performing student population. KSS refers to elite education, in which importance is attached to students who have the ability to be admitted to key higher education institutions. Key schools constitute only a small percentage of all regular junior or higher schools and funnel the best students into the best secondary schools, largely on the basis of entrance scores (You, 2007).

me select these specific middle schools based on the demographic characteristics of the student population. To address the research questions, family composition and parents' educational levels were not taken into consideration for site selection. She initially recommended four schools: two with more low SES students, one with homogenous Uygur students, and one with heterogeneous students. In addition, she provided me with information about these schools so that I could have time to think about them before I interviewed her one week later, when I shared my decision on study settings with her. At the interview, she prepared for me the introduction letters to the principals of the four schools, though I had already selected the three schools as study sites (The fourth school is quite similar to Sunflower Middle School). The Assistant Commissioner made phone calls to the three principals before I made appointments with them. With her help, I had very smooth access to the study sites.

Under the administration of the Urumqi Education Bureau, there are eight school districts with 5,824 teachers, and 1,852 staff (Tianshan District, Shayibak District, Xinshi District, Shuimogou District, Toutunhe District, Dabancheng District, Midong District, and Urumqi County). The City has 158 junior high schools with 89,511 students in 1,878 classes (data provided by the Assistant Commissioner via email). The three selected middle schools each belongs a different school district. Geographically, the three schools cover the whole city, with one in the south, one in the middle and one in the north. Historically, these three schools are among the earliest schools in the city, having been established in the 1950s and1960s. Demographically, the three schools have served a diverse student body in terms of socioeconomic, linguistic and ethnic diversity.

Two of the schools serve a primarily Han, middle to low SES population, but with a small proportion of minority students. The third school, after having been combined with a Uygur middle school in 2004, serves a student body reflective of greater ethnic, linguistic, and socioeconomic diversity. As a result of merging schools, half of its student

population is Uygur, and the other half is a mixed student body, mainly Han students together with students from other ethnic groups. Because this study is about teachers' beliefs about different student groups and their associated teaching practices, the third school was of primary interest regards to ethnic student groups. Aligning with Merriam's (1998) advocacy of maximizing credibility via distribution of sources of data, these school selections present three contrasting school contexts: one that is mid-low income and stable (Old Elmwood), one that is low income with recent demographic changes of mobile population (Sunflower), and one that has homogenous Uygur classes (Double Arrow). The different school settings created the possibility of seeing similarities and differences among settings in which teachers might have different beliefs about and expectations of their students that might influence their teaching practices. Therefore, these schools were chosen to obtain data that is both theoretically interesting and that maximizes comparison.

To be theoretically interesting, it was assumed that a school located on the outskirts of the city with more low SES students from a mobile population was different from a school located in the ghetto, a thickly populated slum area, inhabited predominantly by members of ethnic minority groups, often as a result of social or economic restrictions, pressures, or hardships. It was assumed the dynamics of students in mixed classes of Han and Non-Han were different from the dynamics of classes composed of one ethnic group: Uygur. It was assumed that classes with large numbers of bilingual learners required different pedagogical strategies from their teachers and generated different teachers' expectations of their students, than did classes with fewer numbers of bilingual learners. It was hence assumed that with these different beliefs, expectations, pedagogical strategies, and different student dynamics, teaching practices would vary, as would students' learning. With these assumptions, I selected these schools to maximize the likelihood of finding empirical evidence to address my research questions.

Although the three sites were very different from one another: more Han students vs. more Non-Han students; more supported and less supported minority students[22]; schools with obvious themes vs. school without particular themes; schools with lots of bilingual learners vs. schools with fewer bilingual learners, the three selected schools do share some commonalities such as below:

1. All have Grade 7 to Grade 9;
2. All have minority students;
3. All have mixed classes with Han and Non-Han students;
4. All have some financially poor student population;
5. All have bilingual learners;
6. All have student boarders.

Student demographic data for the three schools is presented in Table 4. Teacher demographic date is presented in Table 5.

Table 4: Student Demographic Data of the Districts and the Selected Schools (including junior high and senior high schools)

District	Selected Schools	Han	Minority	Total	Among which Farmer-workers[23]	Percent of Minority %	Number of Junior Middle Schools/classes
Xinshi District		15662	5442	21104	5445	25.79	17 middle schools
	School #1 Sunflower	2185	587	2772	335	21.2	40 classes
Sayibake District		13850	3948	17798	7572	22.18	13 middle schools
	School #2 Old Elmwood	1875	238	2113	N/A	12.7	35 classes
Tianshan District		16446	7091	23537	3683	30.13	14 middle schools
	School #3 Double Arrow	1438	1429	2867	N/A	50.0	47 classes (19 homogenous bilingual classes)

Notes:
1. School district data comes from "Statistics for Urumqi Education Development, 2008-2009" by Urumqi Education Bureau, 2009.
2. School data was provided by the selected schools respectively during March and June in2010.

Table 5: Teacher Demographic Data of the Districts and Selected Schools

Selected Schools	Han	Minority	Percentage of Minority
School #1/Sunflower	172	53	23.6%
School #2/Old Elmwood	184	13	7%
School #3/Double Arrow	140	109	43.8%

Notes: The school demographic data was provided by each selected school.

[22] Double Arrow is a school which has half of its student population of Uygur, and so the school has more favorable policy required by the local government to support their minority students, such as bilingual education.
[23] Farmer-workers refer to migrant workers from inland of China to Xinjiang among mobile population. They only have temporary household registration.

These three selected schools are further described respectively below.

School #1: Sunflower Middle School

Sunflower is located in the northern region of Urumqi and belongs to the Xinshi School District. It was established in 1955, with area of 59,591m^2, 45% of which are landscaped. There are 40 classes, among which 30 are of Senior High and 10, Junior High. There are 2772 students, of which 587 are minority students (21.2%). Because the school is located in the outskirts of the city where there is large transient/mobile population and most of them are farmer-workers, the school serves many students from low SES. The number of students from farmer-workers is about 335, and this number doesn't include students in poverty. There are 258 faculty and staff, of which 225 are teachers (172 Han and 53 minorities). 100% of the teachers' education qualifications meet the national requirements. All teachers have at least a bachelor's degree and seven of them have master's degrees. (Information provided by the principal on March 26, 2010).

The school is very well-equipped with advanced facilities, such as comprehensive teaching buildings, standard track and field, sport gym, eight outside basketball courts, twenty ping-pong tables, science and language labs, 600-student dormitory, cafeteria for both Han and Muslim[24] with capacity to serve 500 at one sitting, computer lab with 100 computers, etc. Beside each classroom door, there is a framed introduction to, and biography of, the homeroom teacher, including the homeroom teacher's photo and favorite quote, his/her teaching notions, and objectives of the class. Once again, Bill Gates' photos and biography are on the wall of school's reading room.

There is no website for this school, but there are some links such as BBS available to see interactions and activities in the school[25].

[24] The local Muslims are very strict regarding food. They neither eat pork nor eat any food cooked in non-Muslim restaurants or families that they don't think is Halal. Therefore, in local places, all restaurants and cafeterias have signs indicating Muslim or Non-Muslim. Halal is "a term designating food seen as permissible according to Islamic law" (Retrieved from http://en.wikipedia.org/wiki/Halal on September 15, 2010).

[25] These links include http://acad.cersp.com/school/90000040.html, and http://www.yeejee.com/jsp/web/Bbs.do?ct=vp&bbsid=52152

School #2: Old Elmwood Middle School

Old Elmwood, comparatively a stable school, is situated in the south of Urumqi. It has historically served a mid to low income student body. The school is under the administration of the Shayibake School District. It is well-equipped with facilities, including comprehensive teaching buildings, standard track and field, sports gym, science and music labs, dormitories for 1200 resident students whose homes are too far for daily commute, cafeterias of both Han and Muslims, teachers' office building, computer labs.

Based on school reporting of demographic data for the 2009-2010 school year as provided by the Urumqi Education Bureau, there are about 2113 students in the school. 87.3% of students are Han and the remaining 12.7% are from varying ethnic backgrounds with the majority being Hui, Uygur and Kazak. There are 35 classes in the Junior High Department (grades 7-9), six of which are of all boarders. There are 250 faculty and staff, among which 197 are teachers, including two foreign teachers. 80% of the teachers have teaching certificates and qualifications for the grade level they teach; ten teachers have master degrees. About 50 teachers have national, provincial and/or specialized certification. As described in the school's webpage, the mission of the school is to prepare their students for the world and future, and develop the students' ability to learn and understand the languages and culture of other countries. It is also "a cradle" to enrich the personalities of an international entity. Prior to 2009, 20 teachers and more than 200 students had gone abroad for study tours, including England, Australia, Canada, New Zealand, Germany, South Korea, Japan, etc[26].

This school is large and energetic with tidy environment. The teaching building for the Junior High Department is very unique. It is a five story building surrounding a large clear-roofed quadrangular courtyard. During breaks, students were seen everywhere in the hallways with one side open on each floor to the quadrangular skylight-covered

[26] Retrieved from www.fls12.com on July 30, 2010.

courtyard. The works of a Chinese Papercuts Group, one of several interest groups in the school, are displayed on the walls of the hallway. The slogans such as "Lay a foundation for going into the world and the future" are seen everywhere inside the buildings and on the electric poles outside. Beside each classroom door, is a framed introduction to the homeroom-teacher, including the homeroom-teacher's photo, her/his favorite quote, and the goals that the class tries to achieve. Students' grades are published in the hallway as "Hall of Fame". Bill Gates' photo and biography are posted on the main wall of the second floor.

The school has a website at http://www.fls12.com. There are many online interactions among teachers and students.

School #3: Double Arrow Middle School

Double Arrow is located in the downtown area of Urumqi, and it is under the administration of the Tianshan School District. It was established in 1950 and has a long history of revolutionary tradition. In May 2004, this school merged with a local Uygur school. As a result, 19 of the 47 classes are composed of Uygur students. At the time of this study, there were 2867 students, among which 1438 are Han, and 1429 minorities (50% minorities). There are 16 classes in Grade 8 with eight mixed classes and eight Uygur classes. The Uygur classes receive bilingual education,[27] which is an on-going experiment of the Urumqi Education Bureau. Accordingly, certain subjects offered in Uygur classes in the school are taught in Chinese, and the rest are taught in Uygur, the native language of the students. Since 2004, science subjects such as math, chemistry, physics and biology are taught in Chinese; while art subjects including history, geography, and politics are taught in Uygur language.

[27] The China Education Law (1995) stipulates in Article 12 that "Schools that consist mainly of ethnic minority students may use the spoken and written languages of the local ethnic people or those that are in common use among the local ethnic people to conduct teaching." However, since 2004, Xinjiang was required to adopt a bilingual-education policy that facilitated teaching of all subjects in Chinese to minority students ultimately via merging ethnic schools with Han or mixed-student-population schools. More details about bilingual education in Xinjiang refer to Ma (2009).

There are 249 teachers, among which 140 are Han, and 109 minorities (43.8% minorities). 100% of the teachers have met national education qualification requirements. 110 and 60 teachers have obtained the intermediate and high professional titles, respectively. Four experienced teachers are titled as "key master teachers", and 5 teachers are awarded "excellent young teachers" at the provincial level. The school has well-equipped facilities, including two classroom buildings, one teacher office building, computer labs, school TV station, science and music labs, standard track and field, a sports gym with an indoor basketball court, a 1000-resident student dormitory, cafeterias for Han and Muslim, etc. During the period when the study was conducted, a new classroom building was being built on campus, and so all the sixteen eighth grade classes had been moved to a temporary location - a weekend and holiday school where there are standard classrooms and offices. In this temporary facility, teachers' offices were very close to the classrooms, but extremely crowded. As in Old Elmwood Middle School, Bill Gates played a prominent role as a model to follow. His photos, biography and eleven pieces of his advice to youth are posted on the main wall of the sixth floor.

Unusually there are bathrooms on every floor, and they are comparatively in good condition. I was concerned about the safety of so many students rushing up and down narrow stairs between the 8th and the 1st floor where the classrooms are. However, I was told at the interview that teachers were divided into small groups and take turns to look after these children during breaks or when they come to school in the morning and leave school in the afternoon. Nevertheless I was still worried about the risk to students' safety of these stairs being overloaded.

There is no website for this school, but there are some links such as BBS (Bulletin Board System) available to see interactions and activities in the school[28].

[28] The links include http://school.renren.com/school/10074038.html and http://tieba.baidu.com/f?kw=%CE%DA%C2%B3%C4%BE%C6%EB%CA%AE%C1%F9%D6%D0

Participants

There were 330 participants for the survey, 21 participants for interviews, and 15 participants for classroom observations.

At the three selected middle schools, 110 teachers per school were invited to participate in the survey. Fourteen eighth grade teachers and one seventh grade teacher were recruited to be interviewed for this study. The eighth grade was selected because: 1) Teachers have known students much better after spending three semesters – one and half years (one year of Grade 7 and half year of Grade 8), and even if a new teacher is starting from Grade 8, he/she would have spent more than half a year with the students; 2) Both teachers and students have less pressure regarding to mandated tests (Entrance examinations for senior high or vocational schools follows Grade 9). The additional six interview participants in this study were the principals of the three middle schools, one director of Teaching Affairs in Double Arrow Middle School, one researcher in the Urumqi Curriculum & Instruction Research Center, and the Assistant Commissioner of the Urumqi Education Bureau. These administrative participants made contributions to our understanding of the context in which these teachers worked, and also to our understanding of the frame factors, specifically any historical, cultural, and political direction and support in working with children and families with diverse backgrounds that may have been provided to the teachers.

Participant selection and recruitment

With the approval of Urumqi Education Bureau which administrates the eight school districts in the city, and with the help of the Assistant Commissioner of the Bureau, initial recruitment efforts were directed towards the three middle school principals, first through a phone call and then through a follow-up meeting in their offices when I presented them the introduction letters prepared by the Assistant Commissioner. During this meeting, I described the study's purpose and procedures to the Principals, and made

appointments for interviews of the Principals. Consent for participation of the school in the study was obtained during the interviews with the Principal. All the Principals approved the study in their schools, including the survey, classroom observation and interviews. Each Principal specifically arranged for their Director of Teaching Affairs to help me collect the artifacts and sample eighth grade teachers to participate in the study. Fifteen teachers agreed to be observed and interviewed for the purpose of the study. They included five eighth grade teachers at School # 1/Sunflower; five eighth grade teachers at School #2/Old Elmwood; and one seventh grade teacher and four eighth grade teachers at School # 3/Double Arrow.

Without the help of the Assistant Commissioner, access to middle schools would have been very difficult. Due to very limited education resources, Principals in China are of great importance and very hard to approach, though the rank is not high in social hierarchy. They are too busy for research studies. Generally, they are extremely busy before school starts, because that is the time when they have to deal with "*Guanxi*" – lots of phone calls from higher levels, from friends and family, and all sorts of relations in the network, asking to get so-and-so into the school or into a certain homeroom-teacher's classroom.

Sampling

For Interview/Observation:

6 Administrative participants for interviews: The Assistant Commissioner was approached first, because she is in charge of teaching and learning for the Urumqi Education Bureau. The Assistant Commissioner suggested that I interview a researcher at the Urumqi Curriculum & Instruction Research Center, after I explained to her the purpose and the design of my study. She recommended the researcher. I contacted her later and she agreed to participate in my study. In addition, the Assistant Commissioner helped identify three middle schools, and hence, the three principals were purposefully

chosen to be interviewed. All three principals have been abroad – visiting western countries including England, the U.S. and Australia. The Director of Teaching Affairs in Double Arrow Middle School self-selected to participate in my study, after he helped me select teacher participants in his school.

15 teacher participants for both classroom observations and interviews: The teachers were purposefully sampled with the help of the Director of Teaching Affairs in each school. After I explained the study design and purpose to them, they helped me select teachers. Gender, subject, years of teaching, educational degrees, and races were taken into consideration for participant selection. After the selection, I was provided with the names and telephone numbers of teacher participants, the rosters of their classes, and the time schedules of Grades 7 and 8. Comparatively, it was quite easy for the director in *Old Elmwood* to select the teachers. *Double Arrow* Middle School is very special among the three. It took more than 3 weeks for the Director to decide which teachers should participate. There are 16 classes in Grade 8, which half of them (8) are with mixed students, mainly Han students; and the other half are Uygur students. He helped me choose two Uygur teachers (two females), one Tatar teaching in Uygur (one male), one Han teacher (a female) and one Hui teacher (a male). He combined my observation of these five teachers with their school schedule for open lessons (model lessons). Four of the teachers had about 20 teachers sitting in the back of the classrooms when I went to observe their lessons. *Sunflower* was a special situation as well. All the eighth grade teachers are Han apart from one Hui teacher, and so the Director suggested my inviting a seventh grade teacher to participate since she is Kazak.

Regarding the subjects, fifteen of the selected teacher participants included: three Chinese teachers; four English teachers; four math teachers; two geography teachers; one biology teacher; and one physics teacher.

330 participants for surveys: It should be noted that each of the three selected schools has more than 200 teachers, which is a large pool from which to randomly draw 110 participants. There were two opportunities for teachers to self-select. The first opportunity was at a staff meeting at which the Principal explained the purpose of the study. I attended the staff meeting at Sunflower, and observed that anyone who wanted to participate in the survey would simply take one as 110 survey copies were passed around. At another school whose staff meeting I did not attend, the Principal told me at a follow-up meeting that, at their staff meeting, he had asked his staff to deliver the questionnaires to the teachers by rows till they were all delivered, and any teacher who did not want to participate so indicated by just waving her/his hands. The second opportunity for self-selection was that all the 330 participants could accept or decline participation in the research in written form through a short-form consent at the beginning of the questionnaire. The participants also could cease participation anytime during the process of the study. This was part of the reason for the missing or invalid questionnaires.

Details about participants of the study are presented in the table below.

Table 6: Summary of participants in the study

<table>
<tr><th></th><th>Schools</th><th>Participants</th><th>Students Discussed</th><th>Remarks</th></tr>
<tr><td rowspan="5">Interview</td><td>School #1
Old Elmwood
Heterogeneous</td><td>5 teachers teaching three classes (4 Han, 1 Mongolian)</td><td>50 students from three classes (10/teacher)</td><td rowspan="4">Students were randomly drawn in the roster from good grades to poor grades by the teacher participants at the interviews. I did not collect students' names, but their numbers on the rosters. Gender was considered. Students' family backgrounds were also taken into consideration.</td></tr>
<tr><td>School #2
Double Arrow
- Heterogeneous
- Homogenous</td><td>5 teachers teaching four classes (2 Uygur, 1 Tatar, 1 Hui, and 1 Han)</td><td>50 students in the four classes (10/teacher)</td></tr>
<tr><td>School #3
Sunflower
Heterogeneous</td><td>5 teachers teaching four classes (3 Han teachers, 1 Kazak and 1 Hui)</td><td>50 students in the four classes (10/teacher)</td></tr>
<tr><td></td><td>Administrators (6 in total):
▪ 1 in the Education Bureau
▪ 1 in C&I Research Center
▪ 3 Principals
▪ 1 director of Teaching Affairs</td><td></td><td></td></tr>
<tr><td>Subtotal</td><td colspan="3"><u>21 interviewees</u>: 6 administrators (5 Han and 1 Manchu) and 15 teachers (8 Han teachers and 7 minorities). Teacher participants discussed 150 students regarding to their beliefs and expectations (There were some overlaps when two teachers selected students from the same class).</td></tr>
<tr><td>Observa-tion</td><td>Same three schools</td><td colspan="3"><u>14 eighth grade teachers and 1 seventh grade teacher</u> (15 in total with 5/school)</td></tr>
<tr><td>Survey</td><td colspan="4"><u>330 participants</u> in the same three schools (110/school).</td></tr>
<tr><td>Total</td><td colspan="4"><u>336 participants</u> in three schools (6 administrators and 330 survey participants). Teachers were interviewed and observed are among the survey participants.</td></tr>
</table>

Data Collection

Pilot Study

To enhance the validity and reliability of the instruments of the study, I conducted two pilot studies. The first one was conducted using an English version of the instruments. On February 26, 2010 five secondary level teachers from a cohort of preservice teachers in a teacher preparation program at a large public university in the Pacific Northwest were invited to complete and evaluate the survey instrument to test whether it could solicit accurate information to fully address the study's research questions. The result was that modifications to the English version of the instrument were so minor that there was no need to resubmit the instruments to the IRB for further approval.

Upon my arrival in Urumqi, a Chinese version of the instruments including interview protocols, a questionnaire and a consent letter were delivered to six eighth grade teachers in a local middle school that was not among the three selected schools for the study. Three of these six teachers were also invited to try out the interview protocols for the teachers. Apart from the objectives and procedures of the study, the consent letter emphasized that participation is voluntary and that the data would only be used for the purpose of improving the instrument. The six Chinese participants were female teachers with 13-36 years of teaching. Five of them were Han, and one was Kazak. They all teach eighth grade. The pilot study participants' written comments included:

1. It takes about 15 to 30 minutes to finish the questionnaire.
2. Part I (Questions #1 - #4) is not clearly stated.
3. Question #22 is hard to understand.
4. The single-parent family is not mentioned.
5. There is no question about a teacher's self-evaluation.

With this feedback, I modified the translation of Questions #1-4 and Question 22 to make sure they were clearly stated in Chinese. Since the study was not designed to look

at single-parent and teachers' self-evaluation, I did not modify the questionnaire to address these two issues. Hence this second pilot resulted in no major changes to the questionnaire.

Classroom observations

Between March 31 and April 20, 2010, I observed, without recording, fifteen teachers from three schools for one period each (40 minutes), consisting of fourteen eighth grade classrooms and one seventh grade classroom. I also observed faculty meetings and professional development sessions, as preparation for interviews, which were conducted following the observations. Observation before each interview as orientation rather than making claims enabled me to get familiar with the situation in which each teacher worked, and to get some sense what their instructional practices looked like. The interviews, following such observations, then were more helpful than they otherwise would have been for capturing teachers' beliefs about and expectations of students, and the effects on their associated instructional practices. Some scholars recommended this practice of observation before interview (Greetz, 1973; Diamond et al, 2004). Greetz claims that these observations in multiple spaces provide the "thick descriptions" of social and cultural interactions. The study tried to capture teachers' reflections on their classroom environment and instructional materials, their teaching decisions during instruction, and on events that occurred during their teaching practices. As well as formal observation in their classrooms, teachers were observed informally on campus and in their offices. During all observations, I took field notes to document elements in the classroom environments, materials used for class, and teacher instructional practices, which were then documented in fieldwork journals.

Except that three classes I observed in Double Arrow Middle School that are completely composed of Uygur, all the other twelve classes are heterogeneous. Fifteen classroom observations in all were made. There are three male teacher participants

observed, equivalent to 20%. Seven of the fifteen teachers are minority, equivalent to 47%. Fourteen eighth grade classrooms and only one seventh grade classroom were observed. Ten were observed in the morning and five in the afternoon. The observation activities are summarized in the table below.

Table 7: Classroom Observation Summary

Teacher	Race	Gender	Student #		Class & Grade	Time
			Girls	Boys		
Old Elmwood						
Pearl	Mongolian	F	30	34	C3, G 8	March 26, 2010, 4th period, 11:30am
Jenny	Han	F	32	33	C2, C 8	April 9, 2010, 4th period, 11:30am
May	Han	F	30	34	C3, G 8	April 8, 2010, 2nd period, 9:40am
Johnny	Han	M	26	34	C11, G 8	April 9, 2010, 3rd period, 10:30am
Gloria	Han	F	32	33	C2, G 8	April 9, 2010, 6th period 3:30pm
Double Arrow						
Beth	Uygur	F	35	24	C12, G8	April 15, 2010, 2nd period, 10:20am
Harry	Tatar	M	34	27	C 1, G 8	April 15, 2010, 7th period, 4:20pm
David	Hui	M	29	25	C 5, G 8	April 15, 2010, 6th period, 3:30pm
Joan	Han	F	29	27	C 9, G 8	April 20, 2010, 7th period 4:20pm
Hannah	Uygur	F	35	24	C 12, G 8	April 20, 2010, 6th period, 3:30pm
Sunflower						
Lilly	Han	F	22	34	C 3, G 8	March 31, 2010, 2nd period, 9:40am
Liz	Han	F	22	33	C1, G 8	March 31, 2010, 3rd period, 10:30am
Joana	Hui	F	22	34	C4, G 8	April 1, 2010, 5th period, 12:30am
Marsha	Kazak	F	21	26	C2, G 7	April 1, 2010, 4th period, 11:20am
Lisa	Han	F	33	24	C3, G 8	April 1, 2010, 3rd period, 10:30am

Interviews

From March 23 to May 19, 2010, fifteen teachers and six administrators including three principals were interviewed, totaling 21 interviewees. The interview generally lasted about 90 minutes for teachers and 60 minutes for administrators with standard semi-structured interview protocols. The teacher interview protocols included two parts: 10 questions regarding teachers themselves, and 10 questions pertaining to beliefs about their selected specific students in diverse contexts so as to elicit the real beliefs that they had in their minds.[29] Teacher questions, organized by the study's conceptual framework, include teacher personal information, experiences with non-dominant populations, beliefs about different student groups in general, their associated practices and their understanding of the challenges of teaching diverse students, echoing the claim of the literature reviewed in

[29] It is discussed in "Data Analysis" in details.

this study that teachers' backgrounds play a significant role in teaching decision-making. The interview protocols for teachers were developed from open-ended survey questions by Stone & Varghese (2009). They utilized the instrument to better understand the intersection between social justice, subject matter learning, and teaching practice for preservice teachers. This instrument covers open-ended questions about participant demographics, experience with non-dominant populations, language background and the understandings of social justice that contemporary schools face, all of which can serve the purpose of this study. The interview protocol for administrators includes 10 questions with regard to information of school, professional development and teachers' beliefs and practices[30].

When the fifteen teacher participants were interviewed, they were also given survey questionnaires so that their choices in the questionnaire could be compared with what they had elaborated in their interview. All the interviews were audio recorded with permission of participants in the form of a consent letter. Twenty interviews were conducted in Chinese, and one in English (the researcher chose to use English). Eight of twenty one interviewees are minorities, including Manchu, Hui, Kazak, Uygur, and Tatar (38% of the total). Five interviewed teachers were male (23.8% of the total). Details of the interviews are presented in the table below.

[30] For the detailed teacher and administrator interview protocols refer to Appendices J and K.

Table 8: Classroom Observation Summary

#	Name (pseudonym)	Title	Race	Gender	Date	Location	Duration
1	Victoria	Assistant Commissioner	Han	F	3:30pm-4:37pm March 23, 2010	In her office	1hr 17 min
2	Mandy	Vice Principal Old Elmwood	Manchu	F	10:00am – 10:50am March 25, 2010	In her office	1 hr 21 min.
3	Woods	Principal Sunflower	Han	M	12:00pm – 1:00pm March 26, 2010	In his office	1 hr 5 min
4	Wendy	Principal Double Arrow	Han	F	10:00am – 11:00pm March 29, 2010	In her office	1 hr
	School #1/Sunflower Middle School						
5	Lilly	Chinese Teacher	Han	F	12:30 – 1:00pm March 31, 2010	Reading Room	1 hr 5 min
6	Liz	Geography Teacher	Han	F	3:30-5:00pm March 31, 2010	Conference Room	1 hr 30 min
7	Joana	Math Teacher	Hui	F	1:30 -3:00pm April 1, 2010	In her office	1 hr 20 min.
8	Marsha	English Teacher	Kazak	F	3:00 – 4:30pm April 1, 2010	Conference Room	1 hr 15min
9	Lisa	English Teacher	Han	F	4:30 – 6:00pm April 1, 2010	Conference Room	1 hr 25min
10	Lucy	Researcher	Han	F	10:00- 11:30am April 7, 2010	In her office	1 hr 40 min
	School #2/Old Elmwood Middle School						
11	Pearl	English Teacher	Mongolian	F	12:30-2:00pm April 7, 2010	Conference Room	1 hr 10 min
12	Jenny	Chinese Teacher	Han	F	12:30-2:00pm April 8, 2010	Conference Room	1 hr 20min
13	May	Math Teacher	Han	F	3:30-5:00pm April 8, 2010	Conference Room	1 hr 20min
14	Johnny	Math Teacher	Han	M	5:00 – 6:30pm April 8, 2010	Conference Room	1 hr 10min
15	Gloria	Geography Teacher	Han	F	5:30- 7:00 pm April 9, 2010	Conference Room	1 hr 30min
	School #3/Double Arrow Middle School						
16	Beth	Math Teacher	Uygur	F	12:30-2:00pm April 15, 2010	Empty Classroom	1 hr 20min
17	Harry	Biology Teacher	Tatar	M	5:00:6:20pm April 15, 2010	Empty Classroom	1hr 20min.
18	David	Physics Teacher	Hui	M	6:30 -7:40pm April 15, 2010	Empty Classroom	1hr 10min
19	Joan	English Teacher	Han	F	6:30 -7:40pm April 20, 2010	Empty Classroom	1hr10min
20	Hannah	Chinese Teacher	Uygur	F	5:10 -6:20pm April 20, 2010	Empty Classroom	1hr10min
21	Johnson	Biology Teacher	Han	M	11-12am May 19, 2010	Empty Classroom	1hr 10min

Survey

Based on the works of Ballone & Czerniak (2001) and Song (2006), I developed a 66-item questionnaire instrument[31] using a 5-point Likert Scale (1 = strongly disagree, 5 = strongly agree) for capturing and measuring the beliefs of in-service teachers relative to teaching and learning in diverse Chinese cultural context. The instrument contained a

[31] Refer to Appendix L.

section (Part VIII) to collect participants' personal background information, including race, gender, years of teaching, language ability, etc. The instrument was considered to be valid, because Ballone & Czenrniak's questionnaire has been highly cited in educational research. Song developed a survey questionnaire from Williams's (2001) work: Teacher Expectation and Deficit Assumption Survey. The survey items were categorized based on the K3P3[32] Model of effective teaching by Kolis and Dunlup (2004) for content validity of the instrument.

On March 24, 2010, the questionnaire was finalized with feedback from the second pilot study in China. It was planned to conduct the survey online using online survey software such as "*Qualtrics"*, but all the internet connections were shut down due to the 2009 riot. Consequently, 330 copies of questionnaires were printed out on March 25, 2010 and delivered into three selected schools respectively on the following dates:

Delivery Date (110copies/school):
March 25, 2010: Old Elmwood Middle School
March 26, 2010: Sunflower Middle School
March 29, 2010: Double Arrow Middle School

On the afternoon of March 31, the Sunflower Principal invited me to attend a staff meeting, at which the attendees were invited to participate in the survey. I stayed there during the whole process of delivering and collecting the questionnaires. A summary of questionnaire collection is presented in the table below.

Table 9: Questionnaire Collection

Date	School	Delivered	Missing	Collected	Invalid	Valid	Note
March 31, 2010	Sunflower	110	15	95	7	88	Invalid questionnaires refer to the ones with some or many unchecked answers.
April 8, 2010	Old Elmwood	110	5	105	13	92	
April 15 & 16, 2010	Double Arrow	110	8	102	16	86	
					Total	**266**	80.6% of the issued questionnaires are valid.

[32] K3 = three knowledge bases; P3 = three pedagogical processes.

District, school and curriculum artifact collection

Artifacts collected include teachers' lesson plans (hardcopies and electronic files), worksheets, curricular materials, rosters that include students' grades and family backgrounds, weekly schedules of seventh and eighth grades, graded homework and assessment tools. In addition, professional development materials, instructional guidelines, evaluation guidelines for open lessons, and school reports as well as curricular reform documents were also collected from the educational organizations and the selected schools. The available school websites were examined as well. One school has its own website, and the other two schools have some links on public websites such as the website of the Urumqi Education Bureau. Collected school district artifacts included the district's mission statement and related goals, school operating principles, objectives and missions, online reports that described school and district demographics, and documents and materials that provided information about professional development. The district websites were also reviewed. All of these documents are publicly available, and I did not collect or use any confidential or restricted materials for the study.

The Data for this study collected through classroom observations, interviews, survey and artifacts is presented in the table below.

Table 10: The Data collected through classroom observation, interviews, survey and artifacts

Data Source	**School 1 Sunflower**	**School 2 Old Elmwood**	**School 3 Double Arrow**	**School 4 Keya**	**School 5 YiBain**	**C&I Center**	**Education Bureau**	**Total**
Site visits	6	8	9	1	1	3	2	**30**
Participants Interviewed	•Principal ×1 •teachers × 5	•Principal ×1 •teachers ×5	•Principal ×1 •Director ×1 •teachers× 5			C&I Researcher ×1	Assistant commissioner ×1	**21**
Participants Observed	5	5	5					**15**
Valid Questionnaire	88	92	86		6 pilot study			**266**
Artifacts	Resources, website link	resources, website	resources, website links	Resources Website Open lessons		resources, website	Resources, Website	

Confidentiality

Due to the sensitivity of the study's location, a special effort was made to protect participants' confidentiality. All possible measures were taken to make sure that there were not any risks to interviewees from being known to be participants in the study, and to ensure that the interview questions did not elicit responses that could cause political or other problems for respondents, even if they became known. In order to prevent the risks, I, as a researcher, was very cautious about collected data. For instance, before using data about students in my interview with the principal, I had eliminated any identifiers.

Translation of the instruments

All instruments for the study including interview protocols and questionnaire were originally written in English, and they were then translated into Chinese by me. I am a native Chinese, and had been a certified senior English-Chinese interpreter for ten years on projects financed by the World Bank before I was accepted as a doctoral student in a College of Education at a U. S. public university. To achieve validity and reliability of the translation, a Chinese lecturer in a public university in the U.S. was invited to back translate these instruments into English to compare to the original ones. The native language of this lecturer is Chinese, and she has been teaching Chinese in U.S. universities for twenty years. She is fluent in both languages. A Chinese visiting scholar, a professor from Shanghai Jiaotong University, reviewed the consent letter, administrative letters, and also the instruments in Chinese (interview protocol and questionnaire). All these materials were modified with the feedback before submission to the IRB. Additionally, the translation of the questionnaire was tested among Chinese overseas students in the university to further test the reliability of Chinese translation before I went to China.

Data Analysis

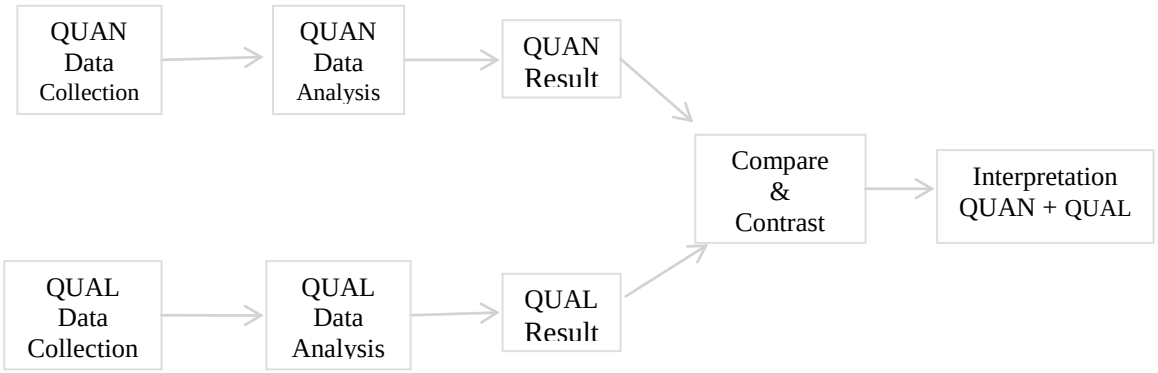
During data collection, I wrote analytic memos to consolidate and conduct the initial review of qualitative data, because as Wolcott (1997) argues ethnography is not in "doing fieldwork" but in doing the mindwork that must occur before, during, and after the fieldwork experiences in order to "bring the ethnographic process to fruition". Hence, the process of analyzing ethnographic data was on-going and took place throughout the data-collection process. Interviews of administrators were arranged at the beginning and at the end of the study so that I could get the whole picture of the school regarding to its history, its administrative structure, its culture and its mission. In addition, meeting the principals at the beginning of the study provided the opportunities for me to collect artifacts about the schools.

Teacher interviews were conducted immediately after classroom observations of the teachers. Field-notes of observations were written up as journals. The first interview was transcribed in Chinese and translated in English immediately on site so that I could get a sense of what needed to be improved for future interviews. After I returned to the US, I transcribed the one interview that was conducted in English and translated to English the remaining twenty Chinese language interview recordings. I contracted a Chinese overseas student in a U.S. public university to transcribe all recordings in Chinese. The process of transcribing and interpreting provided me a second chance to go back over the details of the interviews and to enhance my understanding of the data and information I had collected.

Creswell and Plano (2007) designed a triangulation model for studies in which the "researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data" and they claim that it is "the most common and well-know approach to mixing methods…. 'to obtain different but complementary data on the same topic' (Morse,

1991, p. 122) to best understand the research problem" (p. 62). This design fits the study very well, and I adopt this model for analysis and interpretation of the data collected for my study. The structure of the Triangulation Design is presented in the figure below:

Figure 5: Creswell & Plano's (2007) Triangulation Model (p. 63)



Generally speaking, data collection and analysis of the study was concurrent, but separate. Based on this model, I collected both quantitative and qualitative data on site almost at the same time. Then, I conducted analysis on quantitative data first and achieved some statistical results. Next, I analyzed the qualitative data with codes obtained from the conceptual framework. After finishing analyzing all the collected data, both quantitative and qualitative, I compared the results and contrast them through merging the two data sets "by bringing the separate results together in the interpretation or by transforming data to facilitate integrating the two data types during the analysis" (Creswell & Plano, 2007, p. 64). Next section, data analysis procedures are discussed with details.

Analysis methods

The survey valid responses from 266 Chinese middle school teachers, and interviews of 21 Chinese eighth-grade teachers and administrators were analyzed. The survey data was analyzed using software SPSS, and the interview transcription and the observation field-notes were analyzed using software Atlas.ti with codes derived from the conceptual framework of CHAT (Cultural-Historical Activity Theory). As the study was designed, the findings from the qualitative data are used to triangulate the results from the

quantitative data. The concurrent data analysis method included the following three phases:

Phase 1: Separate initial data analysis for each of the quantitative and qualitative databases.

The analysis of qualitative data involved coding, development of explanatory schema (themes), and interrelationship of themes. With Atlas.ti, the interview transcription and observation fieldnotes together with analytical memos were coded with guidance of my conceptual framework. Then, these coded quotations were analyzed repeatedly to develop an explanatory schema that helped to answer the research questions. The explanatory schema that emerged from the data analysis was able to encompass all the major themes across the data, connect the themes organically and coherently based on the theoretical framework, and provides insights for better understanding Chinese teachers' beliefs and their practices. The schemas or themes will be elaborated in the finding chapters.

The quantitative data analysis aimed to obtain descriptive and inferential information. In the exploratory factor analysis, normality of the data was checked to see if the data was in normal shape and ready for further statistical analysis. A Principle Component Analysis (PCA[33]) was conducted to investigate all the subjects at the aggregate level searching for internal structure and cluster patterns[34]. After the exploratory analysis, the other statistical techniques were applied for further analysis including a t-test, one-way ANOVA, MANOVA and post hoc tests (Tukey and Dunnett T3) after ANOVA found a significant effect at individual level. A t-test and one-way ANOVA were conducted to see if there were any significant statistical differences in

[33] "PCA [principle component analysis] is a way of identifying patterns in data, and expressing the data in such a way as to highlight their similarities and differences. Since patterns in data can be hard to find in data of high dimension, where the luxury of graphical representation is not available, PCA is a powerful tool for analyzing data…..PCA transformation is based on the variance and covariance of the data set" (Smith, L, 2002).

[34] A detailed report on the exploratory analysis refers to Appendix M.

teachers' beliefs within groups of teachers in terms of gender, ethnic group, years of teaching, subject of art and science, language ability and the surroundings where they grew up. MANOVA was also conducted to investigate if there were any significant statistical differences between groups such as schools, gender and ethnic groups. Further, the post hoc tests were conducted to investigate where the differences existed.

Phase 2: Merging the two databases

Based on the Triangulation Design Model of the mixed methods (Creswell & Plano, 2007), the two sets of quantitative and qualitative databases were merged so as to develop a complete picture of the results from analysis of the two datasets. In this study, I merged, compared and contrasted the results from the analysis of the datasets through discussions or often times a matrix to serve the purpose of painting a complete picture of the data.

Phase 3: Interpretation of the results from the two Qs

After merging the results from analysis of the two Qs' database, the comparison results were interpreted to address the research questions by investigating to what extent the two databases converged; to what extent the same types of data confirmed or rejected each other; whether or not the open-ended themes derived from the interview data support the survey results; and what similarities and differences existed across the levels of analysis (Creswell & Plano, 2007). Further, implications and insights were derived from the findings for future studies and practices. The next section elaborates analysis procedures for the qualitative and quantitative datasets in details.

Qualitative data analysis

The qualitative data analysis was guided by Miles and Huberman's (1994) methodology for repetitive sorting of data from artifacts, observation field-notes, and interview transcripts in multiple ways to illuminate key emergent themes, seeking an understanding of what they call "local causality." The analysis used Atlas.ti software,

which was designed for qualitative data analysis and theorizing, to code, continuously analyze, and re-assess the data throughout the analysis process. The process of meaning-making was a key analytical step of ethnography. Geertz (1973) implies that researchers should aim to use thick description "to draw large conclusions from small, but very densely textured facts; to support broad assertions about the role of culture in the construction of collective life by engaging them exactly with complex specifics" (p. 28).

In order to analyze data in a meaningful way, the data was categorized with codes initially derived from the conceptual framework – related aspects of CHAT, the research questions and the existing literature. Constant comparative analysis was employed to unitize and categorize data, and latent content analysis was used to discover the underlying meaning of the data (Tashakkori & Teddlie, 1998). Codes consisted of single words, phrases, and sometimes even sentences. The initial codes provided a starting list, which was refined and added to during the process of data coding and analysis (Miles & Huberman, 1994). The coding and data categorization process generated themes and patterns helping me to move from the particulars of the interview data to more general and abstract theories – explanatory schemes (Miles & Huberman, 1994; Stringer, 2004). After coding the data from each school, I paid particular attention to the race, language and social class composition of the teacher and student population, trying to identify patterns and themes of teachers' beliefs and the associated instructional practices in each school from the places where data was clustered.

The coded excerpts were categorized according to explanatory schemes developed from the conceptual framework. Because the most representative excerpts reflect the idea/concept the best, these excerpts were selected and utilized as examples or evidence to support or explain the explanatory scheme, which were structured with major themes derived from the data analysis. The findings from analysis of the qualitative data were

compared with patterns and themes that also emerged from quantitative data. These different methods also helped strengthen the findings and triangulate the data.

Quantitative data analysis procedures

The quantitative survey responses were first input into an Excel spreadsheet with the help of a local college student in China, and then the data was transferred into the statistical analytical software SPSS (PASW 18). All the questionnaires were destroyed after they were scanned into a CD, which was easier for me to bring back to the U.S., given airlines' luggage weight restrictions.

Multivariate of variance (MANOVA) analysis and discriminant functions analysis (DFA) were applied. First, descriptive statistics using frequencies (i.e., means and standard deviations) were used to describe teachers' beliefs about teaching, learning, and student groups based on the survey items answered by the teachers. Second, a *t*-test was computed to see if there were significant differences in teachers' beliefs among these in-service teachers. The $p < .05$ level was selected to determine the statistical significance of the *t*-test results. MANOVA analysis was used to investigate differences between multiple cases of teachers in terms of gender, language proficiency, ethnic, years of teaching, with whom they grew up, and subjects that are taught, and further to study the relation between teachers' beliefs and their practices for various student groups. It helped me answer the question "Do teaching practices differ in terms of different teachers' personal backgrounds such as race, gender, years of teaching, growing up with whom, language ability?" A confidence level of $p < .01$ was set to reduce the inflation of Type I error. With MANOVA analysis, I was able to examine whether there were any significant statistical differences among beliefs of teachers with various personal backgrounds. By measuring multiple dependent variables, I could increase the chance of finding group differences. For data analysis, the quantitative data was categorized based on the following principles:

1. Variables

Gender is a dummy variable, with female is 0, and male is 1 (Wu & Treiman, 2004, p368). Language ability is an ordinal variable with monolingual as 1, bilingual as 2, multilingual as 3. Year of teaching is an interval variable, measuring chronicle teaching years of the respondents. Educational degree is ordinal variable with three levels: bachelor as 1, master as 2, experts and others as 3. Subjects are interval variables with 9 levels: Chinese as 1; English as 2; math as 3; physics as 4; chemistry as 5; social studies as 6; geography as 7; history as 8 and biology as 9.

2. *Ethnic Groups*

There are eight races in the questionnaire, including Han, Uygur, Kazak, Tatar, Hui, Mongolian, Xibo and Manchu. The data was categorized into four groups: Han, Hui, Turkic (Uygur/Kazak/Tatar) and others including Mongolian, Xibo and Manchu. Combining Uygur, Kazak and Tatar together as one Turkic group is because they share same culture and religion, as well as similar Turkic language.

3. Education

Because there were only two participants selecting “expert”, I combined “experts” with “others” = “Others”.

4. *Subjects*

The teacher participant in the survey taught nine subjects, including Chinese, English, social studies (political science, geography and history), math, physics, chemistry and biology. The eighth grade teachers teach eight of them, apart from chemistry. For data analysis, all these nine subjects are categorized into art and science. Art includes Chinese, English, political science, geography and history, while science covers math, physics, chemistry and biology.

5. *Language*

The languages of the bilinguals in the survey are either Chinese and English or Chinese and Uygur/Kazak/Tatar.

6. *Grades that participants taught*

In Old Elmwood and Sunflower, survey participants covered from grade 7 to grade 12, while in Double Arrow, only from grade 7 to grade 9 (This is a junior high school). However, most of participants were of Grades 8.

Throughout the data collection and analysis process, I continued to pay special attention to my dual position as both "insider" and "outsider", and how those different social and cultural positions influenced my collection and interpretation of the data. The next section discusses on pros and cons of me as a researcher who also functions as research instrument throughout the process of the study.

My Dualistic Role of Insider and Outsider as a Researcher

I was born in China and had taught in both middle school and a College of Education for over 20 years before I immigrated to the U.S. Therefore I have an insider's capacity to interpret nuances in interactions with educators and in the schooling contexts during data collection. At the same time I have traveled to many other countries, have been living in the U.S. for about 5 years and just become a U.S. Citizen, and am thus able to also bring an 'outsider' perspective for data collection and analysis. However, Dennis (2010) reminds us that behaving ethically in the field is a complex, dynamic endeavor for education ethnographers, who have to face dilemmas, tensions, challenges, and promises as both insiders and outsiders throughout the process of the research. Although Parker and John (2010) claim that insider's short distance into the community and her ability to conducting a rigorous research are not mutually exclusive, there is a growing literature that calls on ethnographic and qualitative researchers to examine their personal frame factors, including culture, race, gender, age, socioeconomic status, mental models/beliefs

and worldviews in the process of observing, interviewing, analyzing, and reporting in order to minimize social and cultural biases (Naples, 1996, 2003; Villenas, 1996).

On one hand, I, as the researcher, benefited from being a native Chinese while conducting the study in the region of China where I was born and grew up, since I am familiar with the local customs and traditions, and understand how politics works in China and how "cultural norms" and "public secrets" play in a society that westerners would have difficulty divining. For instance, I am aware of the ways that Chinese cultural norms often express themselves in riddles, rather than directly, which familiarity reduced misunderstandings during the research. On the other hand, I had to pay special attention to my beliefs and opinions to minimize my own social and cultural biases, in particular, during the ethnographic research when I, as the researcher, became an instrument of the study (Wolcott, 1997). Wolcott is concerned about the possibility that ethnographic researchers in education might become their own key informants in school research. Being aware of this, I constantly examined my attitudes, intents, approaches and interpretations as an "insider" to avoid crossing the boundaries throughout the study process.

Culturally and linguistically the same as locals, I was treated as an "insider" when I visited schools and the educational organizations. My experiences as a middle school teacher shortened the distance between me and the local teachers. During most of the observation and interview time, the teacher participants shared with me very openly their challenges, beliefs and teaching ideas. This "insider" position was extremely useful and helpful during the data collection phase because it helped create many powerful dynamics between me and the teacher participants. We had many common topics to discuss, causing a reciprocal relationship of trust to quickly develop. The reasons that teacher participants were willing to talk to me were, as Fullan (1999) claims, that teachers are already working under a top-down system and they do not want another party coming and telling them

what to do. They are probably looking for horizontal rather than vertical communication. I approached them horizontally as one of them, a teacher. Throughout the study process, my "insider" knowledge of the culture and social norms provided me with tremendous help and valuable opportunities otherwise unavailable regarding access to study sites, and communication with participants. My "insider" position was a privilege, without which I would not have obtained access to study sites so smoothly and quickly, and without which I would not had won so much trust from informants. In short, in the absence of "insider" status, the degree and speed of access to study sites, information, and data would have been impossible.

At the same time, as a university researcher from the United States, with introduction letters from a U.S. university, I was also positioned as an "outsider" to the local schools, the principals and the teachers, especially when sensitive topics arose. I once noticed during an interview that the principal winked to a teacher coming to report something urgent, implying to the teacher that he could not say anything due to my presence. And I could sense the participants' cautiousness when they talked to me about "sensitive issues" such as "bilingual education" and "the 2009 riots". I was treated as an outsider when I was "formally" introduced as a researcher from the U.S. and I sensed that the welcoming words I received were not so genuine. And I often experienced this feeling of "outsider" when, especially during the initial stages of an interview, interviewees would recite political slogans, that is, "official language." When this happened, building trust between me as a researcher and my informants immediately became a priority for me. Sometimes during my observations and engagements with teachers, I felt like a complete "outsider" for a different reason. I felt this when I heard the musical class changing bell in contrast to the harsh bell I remembered, when I saw desks with beautiful covers in classrooms in contrast to the rough desks that were familiar to me, when I noticed that teachers use PowerPoint instead of chalk, and especially when, with great shock, I heard

students openly arguing with teachers, which latter would not have happened when I was teaching in China. I felt an outsider because my experiences and perspectives appeared to be outdated in current Chinese schools, which are so different in many ways from ten years ago when I was closely engaged with education in the city. School culture, and teachers' and students' attitudes and behaviors, have changed significantly and rapidly. I did not feel that I was an "expert" in Chinese schooling any more. Therefore, now often feeling like an outsider also helped me see Chinese schooling differently than I would have ten years ago.

Consequently, my "insider" and "outsider" roles were shifting back and forth, both consciously and unconsciously, throughout the research process, even during a single interview. Sometimes, the fluid relationship between outsiderness and insiderness reflected how I negotiated the multiple socially constructed discourses (Parker & John, 2010) going on both inside me and between me and my subjects. In order to counter-balance the power that I had as an "insider" researcher, I tried several ways to diminish my voice. I adopted two strategies to serve this purpose. One was to ask teacher participants to review the field notes of my observation of their classrooms so that they had an opportunity to see my interpretations of their teaching practices and to share with me their meanings and ideas in more depth, and if necessary, correct my interpretations. It prevented me from simply interpreting their actions based on my "insider" and "outsider" perspectives and assumptions (Wolcott, 1997).

Second was to make further confirmations of my interpretations and understandings of observations during the interview, giving the teachers a second opportunity to elaborate on why they did what they did in their classroom. In order to counter-balance the power that I had as an "outsider" researcher, I tried to share my voice with the participants, after trust was built up between us, by questioning, confirming, and making suggestions from an outsider's point of view. Throughout the study, I constantly

reminded myself of my dual “insider” and “outsider” positions, and also frequently examined my epistemological approaches and data collection and interpretation decisions in order to try to minimize my own cultural and social biases, and to maximize the privilege of simultaneously being both an “insider” and “outsider.”

This was my first opportunity ever to be positioned as both an “Insider” and “Outsider”, and this experience was very precious to me, as a researcher and also as a person. Before I came to the U.S., I was living in the mainstream cultural context in China. I am Han Chinese, and I was the majority (90.56 % of Chinese are Han in 2005 National Census). I was numb to racial or cultural marginalization until I came to the U.S. when I became a minority. I experienced the feeling of “otherness” now and then, though I have had the privilege to spend most of my time in American academia where such marginalization seems to me to be minimized relative to the rest of American society. I am now situated in the dominant mainstream culture in America, and every day I try to learn something new so that I can better understand and get more immersed in this mainstream cultural context. This experience provided me with the opportunity to try to understand people whose lives are structured across both cultural contexts on a daily basis which don’t share the same values, norms and even language both in China and in the U.S. What is more important, this experience offered me new perspectives to better understand and interpret the data that I have collected. For example, it offered me a new angle to understand minority teachers who are similarly situated in the dominant mainstream culture in China.

Findings

The findings in this study illustrate the Chinese middle school teachers' self-reported beliefs about teaching and learning, and expectations of student groups who are different - financially, linguistically and ethnically - from what the teacher perceives as the norm. The findings reveal the different factors that contributed to the Chinese teachers' beliefs shaping and reshaping process, the multiple meanings that these beliefs attributed to their instructional practices, and the points of tensions and contradictions these teachers faced while trying to achieve schooling objectives in a increasingly complicated political and organizational systems.

The findings have shown that these Chinese teachers' beliefs were associated with three categories of frame factors: cultural/historical, personal and political/organizational. These beliefs and expectations were shaped and reshaped with historical sediments[35] and cultural values and beliefs that existed in the community, mediated by individuals' backgrounds – both teachers' and students', and further, influenced or even manipulated by political regulations and organizational requirements and rituals. Historical cultural frame factors helped shape teachers' beliefs about teaching and learning over time, and reshaped these beliefs continuously and developmentally together with daily instructional practices in classrooms. Teachers' personal frame factors mediated what they believed they could do and what they should do in the activity system of their school to realize the goals that they set up for themselves and for their students.

Political and organizational frame factors working together as rules stipulated or constrained what teachers taught and how they could deliver their teaching. As they encountered and incorporated the different discourses on teaching and learning from the multiple social contexts in the system at different levels such as school, family and government, they negotiated, though with difficulties, what they desired to achieve based

[35] "History sediments" in this study include philosophies, principles, traditions, ideas and values of Chinese society.

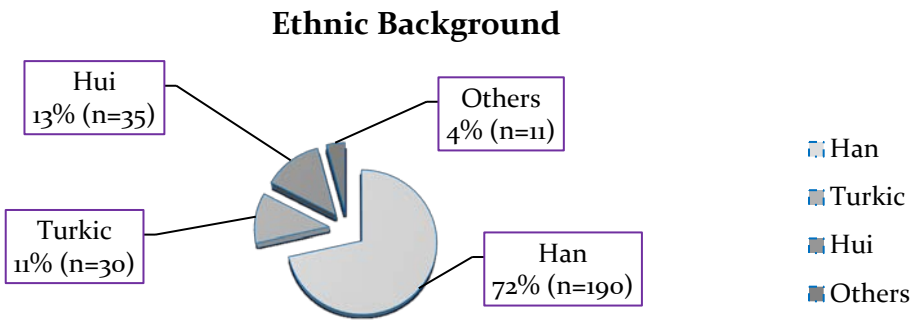
on their beliefs. Consequently, their complex object-realizing process of meaning-making and negotiation in the teaching activity system was often met with various points of tension and contradiction – both on a personal level as well as within community – as beliefs, objectives, rules and actions conflicted and competed among the different social and cultural settings. Aspects of CHAT helped theorizing where and how the tensions and contradictions occurred in these settings[36]. The findings suggest the different factors that contributed to the understanding what Chinese teachers believed, and why they believed what they believed. The findings also illustrate how these beliefs influenced their decision-making in daily instructional practices and how these instructional practices dialectically influenced or even enhanced what they believed.

Prior to presenting the findings from the analyses of both qualitative and quantitative datasets, it is necessary to present the descriptive information about the subjects that were analyzed for this study.

Descriptive information about the Teacher Participants

The 266 valid survey respondents included responses of the 21 interviewees, and so the total number of participants for the study was still 266. There are 186 female and 80 male subjects, who are categorized into four ethnic groups – Han, Hui, Turkic and others[37]. Details are described as in the figure below:

Figure 6: Ethnic Background of the Participants



[36] Details refer to "Discussion" in Chapter IX.
[37] "Turkic" refers to Uygur, Kazak and Tartar. "Others" refers to Mongolian, Xibo and Manchu.

Table 11 below describes the information of the participants by ethnic groups in terms of gender and educational degrees.

Table 11: Background Information of Ethnic Groups

Ethnic Groups	Sub-Total	Gender		Educational Background			
		Female	Male	Associate	Bachelor	Master	Other Degree
Han	190	134	56	30	139	13	8
Turkic	30	22	8	5	23	1	1
Hui	35	24	11	3	30	1	1
Others	11	6	5	0	11	0	0
Total	266	186	80	38	203	15	10

The mean of years of teaching is 12.6 years, and the mean of monthly salary of the participants is ¥2785.714 $\approx$ \$430. Because the majority of the participants were junior middle school teachers and most of whom were teaching the eighth grade, three characteristics of the participants stood out: more female, younger, and lower salaries. In general, the descriptive statistical analysis reveals there are 115 teachers with less than 10-years of teaching experience, 88 teaching 11-20 years, and 35 above 21 years. There are 165 subjects (62%) teaching arts including Chinese, English, history, geography and politics, and 101(38%) teaching science including math, physics, chemistry and biology. 56% of the participants grew up in the surroundings with mixed ethnic groups, especially Han and Turkic groups. 37% grew up in Han-only community, while 7% in Turkic-only neighborhood. Almost half (47%) of the survey participants were bilingual or multilingual (91% of Kazak participants are bilingual and multilingual, and 90% of Uygur were bilingual and more, both of which belong to Turkic group[38].

Summary of the Findings

The findings are organized into four chapters. The findings that each chapter presents and discusses are summarized as below:

[38] For more details of the teachers' backgrounds refer to Appendix N.

Chapter Five: Beliefs Mediated and Shaped by Historical Sediments and Cultural Educational Traditions and Philosophies. The data in this chapter illustrates four major themes of the teachers' self-reported beliefs that are historically culturally shaped and mediated. For instance, the teachers from the data believed diligence is the core to be successful academically, and they reported that they treated all the students in the same way as long as the students, per teachers' standards, did their best. That could be the reason why students' personal frame factors including gender, ethnicity, family social and economic status, ability to learn, and language abilities had little impact on teachers' expectations of them.

Chapter Six: Teachers beliefs differentiated by personal frame factors. This chapter presents Chinese teachers' self-reported beliefs mediated with personal backgrounds, resulting in some statistically significant different beliefs among individual teachers. The findings in the chapter illustrate what individual participants with particular personal frame factors believed about their students who differed in learning ability, gender, ethnicity, and financial and economic status, and where the significant differences existed.

Chapter Seven: Teachers' beliefs influenced by political and organizational frame factors in the highly centralized schooling system. The centralized political and educational system plays a critical role in how schools function to serve the purpose of the society and of the country. This chapter presents Chinese teachers' beliefs that were influenced and even manipulated by political and organizational mandates, policies, regulations, etc. The study reveals that the different teachers' beliefs were especially associated with two new policies and with recent structural and demographic changes in the three selected schools.

Chapter Eight: Teachers' Beliefs and the Associated Instructional Practices. The teachers' beliefs helped them, consciously or unconsciously, internalize the normative

political, social, cultural, and racial codes in their daily instructional practices. As such, the teachers strategically mediated their practices using tools (teaching materials and methods) and rules during the process of teaching and learning activities (See Chapter III: Literature Review). This chapter illustrates the relationships between teachers' beliefs about majority and minority students and the ways they treated these students in their teaching practices.

To contextualize the following finding chapters, each chapter begins with a description of the findings in the chapter. Then, the results of the quantitative data are presented as evidence for the findings. These results are then followed with related representative excerpts from qualitative dataset to serve the purpose of triangulation, that is, either to reinforce or to refute the findings of the quantitative data. Finally, the results from the two datasets are emerged and discussed, and sometimes presented in a matrix to summarize the findings in the chapter.

Chapter Five – Teachers' Beliefs Mediated and Shaped by Historical Sediments and Cultural Educational Traditions and Philosophies

The data in this chapter describes beliefs the Chinese middle school teachers in my sample claimed to hold about teaching and learning in general, and their expectations of different types of students in specific. The results from both quantitative and qualitative data reveal that these self-reported beliefs were shaped and mediated by the cultural and educational philosophy of the Chinese society, particularly its Confucian heritage culture and traditions. Four major themes emerged after analyzing the quantitative and qualitative data: 1) Diligence mattered most in learning; 2) Teachers held positive beliefs about students in poverty and they believed those students with lofty aspirations and ambitions could make changes; 3) Teachers believed that students take education as motivation to move up; 4) Pedagogical practices were originated and mediated from Chinese educational traditions.

Theme 1: Diligence Produces Significant Differences in Learning!

In Chinese culture, there is an old saying, "Diligence is the path to the mountain of knowledge, and hard work is the boat to the endless sea of learning" (书山有路勤为径，学海无涯苦作舟[39]). The majority of the study's subjects did not credit academic success as resulting from being gifted and talented, but rather they strongly believed that hard work creates academic achievement. Everyone can learn as long as they work hard enough, even if some might be slow learners, because "A slow sparrow should make an early start" (笨鸟先飞). Consequently, the teacher participants in the study believed they treated their students all the same as long as they studied very hard. Further, the teachers attributed differences in student performance to differences in students' effort.

[39] From Han Yu, a famous poet and philosopher in Tang Dynasty which was about 618-907 AD.

Quantitative evidence for Theme 1

To indicate their beliefs, the middle-school-teacher-subjects were required to rate each statement in Table 12 on a 5-point scale by circling one of the responses (Strongly Disagree, Disagree, Not sure, Agree and Strongly Agree, which were numbered 1, 2, 3, 4 and 5, respectively).

Table 12: From Questionnaire Section II: Teachers' Beliefs about Teaching & Learning

Item	Section II. Indicate your beliefs about teaching and learning.	Rank	Mean (St. D) N=265[40]	Frequency		
				Agree[41] %	Not Sure %	Disagree %
18	I treat all of my students the same.	1	4.25 (0.83)	86.5	9.0	4.5
5	Some students cannot learn how to reason their way through novel situations.	2	3.99 (0.97)	79.3	10.2	10.5
6	Students can learn to think intelligently	3	3.91 (0.85)	70.7	24.8	4.5
8	Repetition is the best way to fix knowledge and skills in memory.	4	3.81 (0.99)	80.5	14.2	5.3
10	Low-ability students need to focus on acquiring basic knowledge and skills.	5	3.80 (1.00)	72.5	13.2	14.3
7	The use of ability reading group is an effective tool for teaching students with different reading abilities.	6	3.70 (1.02)	69.5	24.1	6.4
9	Students who lack basic reading and computation skills need to acquire those skills before they can move on to higher order thinking.	7	3.70 (1.00)	62.8	20.7	16.5
13	Heterogeneous classes allow for all levels of students to achieve at higher levels.	8	3.46 (0.97)	55.6	26.3	18.1
14	Learning occurs in fairly defined stages and ways, so individual differences, such as cultural background and experiences, have only limited impact on achievement.	9	3.32 (1.07)	51.5	19.5	29.0
16	Behavior-disordered students are best taught in a controlled environment removed from the regular classroom.	10	2.98 (1.15)	38.0	21.1	40.9
11	Intelligence is another way of saying that a student does or does not have the capacity to learn intellectually challenging material.	11	2.95 (1.09)	34.0	22.1	43.9
12	Intelligence is a fixed measurement, which may be used effectively to determine how to teach individual students.	12	2.91 (1.05)	31.0	26.7	42.3
19	If students are not motivated to learn, there is nothing that teachers can do.	13	2.82 (1.12)	30.5	20.3	49.2
17	Students who do not have Mandarin as their primary language should not be in my class.	14	2.75 (1.24)	30.8	22.2	74.0
15	Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material.	15	2.27 (1.14)	19.5	11.7	68.8

[40] The outlier Case 78 was eliminated.

[41] The frequency combines "totally agree" and "agree" into one category "agree", and "totally disagree" and "disagree" into "Disagree". It is applicable in all the tables with frequency.

Table 12 presents the descriptive statistics of respondents' beliefs about teaching and learning in descending order by their mean values. As can be seen from the table, the average of the belief items ranged from a high of 4.25 to a low of 2.27, on a scale of 1 (totally disagree) to 5 (totally agree). The responses indicated only two types--- high and medium. Nine of the 15 items (60%) had mean values exceeding 3.32 (agree) and five (33%) fell in the medium category (mean values between 2.95 and 2.75). There was only one item which had a mean value of 2.27 in the low usage category. The overall mean for the sample in this Section was 3.37, indicating an overall trend of "Agree". The mean of Item 18 "I treat all of my students the same" is the highest (M=4.25), indicating most of the respondents believed that they treated all the students the same. The mean of Item 15 "Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material" is the lowest (M = 2.27), indicating that majority of the respondents did not believe or they disagreed that students from low SES had less capacity to learn challenging materials, which offers evidence that they did not hold low expectations of students from low SES.

The central tendency – mean and frequency in Table 12 above -- reveals three major trends in these Chinese teachers' beliefs about teaching and learning:

1) Fewer of them (31%) reported that IQ is a fixed measurement which may be used effectively to determine how to teach individual students (Item 12, mean = 2.91), and almost half (44%) didn't agree to use IQ to judge whether students can or cannot learn intellectually challenging material (Item 11, mean = 2.95);
2) The majority of these teachers didn't agree that they held low expectations of low SES students (Item 15, mean = 2.27), and the majority reported that students' language ability or cultural backgrounds would only have a limited impact on their learning (Item 14, mean = 3.32). As a result, they didn't object to having heterogeneous classes (Item 13, mean = 3.46) and they disagreed with the idea of

keeping students with behavioral problems or students without language proficiency out of their classroom (Item 16 and Item 17, m =2.98 and 2.75 respectively). The survey found that only 38% of the participants agreed with the statement "Behavior-disordered students are best taught in a controlled environment removed from the regular classroom."

3) The majority of the teachers – 230 out of 266 (87%) claimed that they treated all of their students the same and only 12 teachers (5%) didn't believe so. This might have some relationship with the common beliefs that they didn't think IQ differences, financial, social and cultural backgrounds, and linguistic ability would impact learning. Instead, they might believe that repetition and practice would help learning. This echoes the cultural belief that diligence creates learning.

In addition, almost half (49%) of the respondents (mean of 2.82) believed they could help students learn even the ones who were not motivated. This supports a theme that emerged from the qualitative data on the division of labor: it is teachers who are responsible for student learning.

Qualitative evidence for Theme 1

As discussed in Chapter 4 – Methodology, the qualitative semi-structured interviews were designed to support/confirm or reject/contradict the information acquired from the quantitative questionnaire. During the 21 interviews, diligence was mentioned 56 times, and efforts and hard work were talked about over 20 times. Although some interviewees agreed that IQ is the primary influence on learning, they believed that diligence trumps IQ. In other words, they, same as the responses in the survey, did not believe that IQ was a fixed measurement which may be used effectively to determine how to teach individual students, and they did not agree to use IQ to judge students' academic potentials and outcomes.

Wendy, the principal in Double Arrow Middle School where half of the students are Turkic, was most supportive during my study. She even sat in on two of my class observations; she told me she often observes classrooms to "Give them [teachers] some pressure!" When I asked her what she thought about students with different IQs, she said,

> ….there are some differences in individuals' intelligence, and in learning abilities. Students with weak learning abilities might not get good scores…. Learning ability is one factor. There are other factors such as learning methods, learning attitudes, cooperative learning styles, and even emotional status…. All these factors will influence students' learning. Oh, yes, there is another important thing, diligence. If you are lazy, you will certainly not be able to learn. You see the slogan posted in classrooms, 'Diligence is the path to the Mountain of knowledge, and hard-work is the boat to the endless sea of learning,' our cultural belief posted on the wall to remind students every minute….(Interview on March 29, 2010)

Johnny was a math teacher I interviewed. He was born to a farming family in the countryside in eastern China. He had two brothers, and there was not enough land on the farm to support three households when they all got married[42]. He had to really study hard to get himself out! Having passed the national college entrance examination, he was accepted in a comprehensive university in the northwest of China. He wanted to be a teacher, because teaching jobs were more plentiful than jobs in other fields. Therefore, he started taking teacher certification tests when he was a junior. Upon graduation, he was hired in Old Elmwood Middle School, a stable school with a long history and a good reputation in the district. When I asked Johnny to describe his beliefs relative to achieving academic success, he talked about his own experiences,

[42] In early 1980s, new policies were introduced in the rural areas in China, including fixing farm output quotas on a household basis. Each household has certain fixed amount of farming land. The practice has been adopted since then.

> I don't believe in being gifted or talented is necessary;
> but diligence is necessary…The old saying goes "Nothing is
> too difficult for, or impossible to, the man who tries hard (世上无难事，
> 只要肯登攀)" I am not a genius, and I worked my way through
> to where I am now just with my diligence and hard work.
> Genius doesn't exist (Interview on April 8, 2010).

Johnny was a novice teacher, but very strict with students. On the day when I went to observe him, as soon as I entered the classroom, I immediately noticed that a boy and a girl were sitting separately from the entire class, right against the back wall. I asked why? Some students shouted, "They have made mistakes, and our teacher is punishing them." A lot of students giggled afterwards. I felt so bad and went to these two students, whispering, "Why are you sitting here? Are you ok?" Unexpectedly, both of them did not mind being put in the spot at all, instead they smiled at me, "Yes, yes, we are fine, perfectly fine. We did not hand in our homework in time yesterday, and so our teacher asked us to sit here thinking about our mistakes. We will remember, and we will submit our homework in time in the future." Their faces showed they really meant what they said (fieldnotes on April 9, 2010).

May was a math teacher, and she had been teaching math for 12 years in three different middle schools. She was not wordy, but she clearly and succinctly explained what she was teaching to her students. There were lots of interactions between her and her students (fieldnotes, April 8, 2010). During the interview, she told me she had loved math since she was a kid; she sees great beauty in math. She also said she thought very carefully when choosing her words; indeed she always reflected for a while before answering my interview questions. When I transcribed the interview, I realized there was much insight in her responses. Here, she speaks of her beliefs about learning,

> As long as they can take their study and their work seriously and

> diligently, they will be successful. One may distinguish himself in any trade, as it says in our culture. It is important for us to nurture students with sense of seriousness, confidence, and diligence. Of course, learning is arduous and hard, and demands lots of practices. You must be familiar with the saying "After reciting three hundred Tang poems, you will be able to write poems of your own." Ha, there you go! (Interview on April 8, 2010)

The excerpts above provide examples of Chinese teachers' beliefs about effort and diligence, and reveal that these self-reported beliefs were influenced and shaped through cultural and historical traditions and philosophies. Not surprisingly, the interviewees often used sayings from Chinese culture that they learned in their childhood, reflecting what their parents taught them as children about the requirements for learning. These results support that the Chinese teachers' beliefs about diligence were influenced by Chinese educational philosophy and cultures and traditions.

Theme 2: Poor but with Lofty Aspiration and Ambition

Cultural beliefs about the poor function powerfully in the community. These beliefs shape and mediate teachers' mental models about students in poverty or from low SES. As revealed in Table 12 above derived from quantitative data, the teacher-participants did not express low expectations of these students (m = 2.27). Instead, it is generally considered in Chinese culture that children from poor families should realize their duty early, becoming educationally motivated at a young age so that they can change their life when they grow up.

Quantitative Evidence for Theme 2

Section VII of the questionnaire was designed to explicitly explore Chinese teachers' expectations of different student groups in terms of gender, language ability,

ethnic identity and family backgrounds including parents' education and family financial and social status. The results are presented in the table below:

Table 13: Teachers' Expectations of Different Student Groups

Section VII. Indicate likelihood that you will hold low expectations of different student groups below and you just help them with basic knowledge and skills.		Rank	Mean (St.D) N=265	Frequency		
				Agree %	Not Sure %	Disagree %
66	Students who lack discipline and persistency	1	2.95 (1.36)	40.2	16.2	43.6
59	Slow learners	2	2.81 (1.31)	37.6	15.8	46.6
58	Low achievers	3	2.80 (1.40)	36.5	15.0	48.5
61	Minority students with broken Chinese	4	2.39 (1.23)	24.4	15.4	60.2
65	Students with non-educated parents	5	2.30 (1.22)	22.9	12.8	64.3
60	Minority students with fluent Chinese	6	2.25 (1.19)	18.8	13.9	67.3
62	Female students	7	2.21 (1.18)	16.9	15.4	67.7
63	Male students	8	2.17 (1.18)	17.7	13.9	68.4
64	Students with well educated parents	9	2.17 (1.17)	16.9	15.4	67.7
55	Students in poverty	10	2.17 (1.16)	19.1	11.7	69.2
57	Non-Han students from low SES	11	2.13 (1.16)	15.8	14.3	69.9
56	Han students from low SES	12	2.12 (1.15)	16.2	13.1	70.7

Table 13 above presents descriptive statistics, in descending order by their mean values, of respondents' beliefs about students with deficits or negative stereotypes. As can be seen from the table, the means of the belief items ranged from a high of 2.95 to a low of 2.12, on a scale of 1 (totally disagree) to 5 (totally agree). The responses indicated only two types – medium and low. The mean of each of the twelve items was less than 3, and the overall mean of all items is 2.37, indicating an overall trend of "Disagree", or a general tendency not to hold low expectations of such students. The mean of Item 66 "Students lack of discipline and persistency" is the highest (M=2.95), indicating most of the respondents are more likely to hold low expectations of these students than of the others. The means of Items 57 (Non-Han students from low SES) and Item 56 (Han students from low SES) are the lowest (Mean =2.13 and 2.12 respectively), indicating that the majority of the respondents (70%) do not hold low expectations of students from low SES, either Han or Non-Han.

Generally speaking, this quantitative data reveals five tendencies:

1) These middle school teachers reported that they did not hold low expectations of students in poverty and from low SES with different ethnic backgrounds – Han or

Non-Han made no difference in their beliefs (Items 55, 56 & 57, mean = 2.17, 2.12 and 2.13 respectively);

2) There were no statistically significant differences between these self-reported teachers' expectations of students with and without Chinese language efficiency (Items 60 and 61). They did not hold low expectations for either group, though they had more concerns about students without the language efficiency (m= 2.39, which was a little bit higher than m=2.25 for students who could speak fluent Chinese).
3) These middle school teachers did not hold lower expectations of either female or male students (Items 62 and 63 with mean =2.21 and 2.17 respectively);
4) These teachers did not hold lower expectations of either students with, or students without, well educated parents (Items 64 and 65 with mean of 2.17 and 2.30 respectively). This supports the notion that teachers believed student learning is primarily their responsibility.
5) As for the students with a lack of discipline and persistency, the respondents were almost equally divided (40% agree and 43% disagree, with 16% not sure). Compared to other student groups, respondents showed more concern about this group as well slow learners (m = 2.81) and low achievers (m = 2.80), that is, they more likely held low expectations of these student groups.

In summary, the quantitative data shows that students' gender, ethnicity, family social and financial background, and language ability do not influence teachers' expectations of them, echoing the results of teachers' beliefs about teaching and learning. Believing only effort can make a difference, teachers don't hold low expectations of students with deficits or with negative stereotypes.

Qualitative Evidence for Theme 2

Interviewees talked about cultural beliefs about poverty in general and their own beliefs in specific through sharing stories about their students from poor families and families with low social status. During her interview, Victoria, the Assistant Commissioner of Educational Bureau, described teachers' beliefs about the students in poverty,

> …in Chinese culture, "preferring rich to poor" is one of the serious shortcomings of personality. It is a shame and it is immoral. Looking down on somebody just because she is poor indicates you are a bad person. It is possible that teachers have a snobbish opinion, but they cannot or dare not to judge a student by the economic status. …The teachers generally think that the kids from a poor family work harder, …take learning more seriously. There are a lot of examples around us that prove that the kids from poor families are working harder and are more diligent. They realize that they have to depend on themselves. They have no one else to depend on. They have to stand on their own feet…...
>
> In Chinese culture, there are a lot of sayings that praise kids from poverty, saying that poor kids shoulder family responsibility earlier etc. Kids in poverty tend to have more motivation to learn so as to change. They have strong wills to change their lives by being diligent in their education since it is the only way (Interview on March 23, 2010).

She continued to talk about a conversation between a physics teacher and a homeroom teacher to demonstrate teachers' beliefs about low SES students,

> A physics teacher talked to the homeroom teacher, 'Look at that

> Student, John! He is from a very poor family and so diligent and doing so well! What an excellent student!' The homeroom teacher felt surprised and confused, 'John? Why do you think he is poor?' The physics teacher replied, 'Haven't you seen what kind of shoes he is wearing? A pair of yellowish military shoes. Who wears that now? Only immigrant workers' kids, maybe. He must be from a poor family.' The homeroom teacher then told the physics teacher, 'His family is not poor. His mother is our principal, and his father is a doctor!" (Interview on March 23, 2010)

As a matter of fact, these two teachers were talking about Victoria's son, and she was serving as the principal of that school at that time. What Joana, another math teacher, said in her interview further supports the common view about kids in poverty,

> I think that poor kids are more diligent. As long as they realize the importance of education, they have motivation to learn and they learn well….I think they have very few behavioral problems. They tend to be more polite as well (Interview on April 1, 2010)

Johnny, the math teacher who was born in a poor family, expressed his opinions about poor kids and rich kids in his way,

> I feel so unfair. Why do they live such different lives just because they were born in different families? They have different resources, and they have different things to think about, to worry about. For instance, the poor kids will think what they can do to help family and parents after school; while the rich kids might think about how to spend money after school. In this case, I dislike the rich kids, because they are not living their own life (Interview on April 8, 2010).

The interviewed teachers' beliefs were enhanced by many stories from their daily lives about high achievers who are from poor families or from low SES. During each interview, I asked for one story about his or her most impressive students. The majority told stories about diligent students from low SES. These stories are summarized in the table below:

Table 14: Summary of the Stories by Fifteen Teacher Interviewees

#	Intervi -ewee	Impressive student	Story about….
1	Lilly	A boy	Student from low SES family, who didn't like learning and lacked motivation, but encouraged by teachers' praise, started to work hard and doing very well. "One word -- encouragement, an expression in the eyes, might change students greatly."
2	Liz	A boy	Irresponsible, and lazy, but changed with -time and appreciation from his teacher. "Whenever I found anything good, I would praise him in class, and he worked really hard and became an excellent student."
3	Joana	A boy	Student from low SES family, farmer-workers, very diligent, "a very good student, doing very well in all subjects, because he is so diligent."
4	Marsha	A boy	Student from low SES family, naughtiest, with poor grades. "I've drawn a conclusion that teachers have their closest and best relationships with the naughtiest students, that is, students with behavioral problems."
5	Lisa	A boy	Student from low SES family, countryside boy, with very weak foundation of knowledge but so diligent and caught up. After "I had a talk with him, I changed him." "I realize that teachers should help students discover their potential."
6	Pearl	A boy	Student from low SES family, studies very hard, very well-behaved, with good grades. "….set him as an example for the rest of the students in my class to show how much a student can achieve who is from a poor family, who doesn't have much pocket-money, who studies very hard at school, and who concentrates in class."
7	Jenny	Whole class in the first round	During her first year teaching, …..blackboard was full of apologies written by the students after she got upset with them. "The students in my first year so impressed me. It is hard for me to forget them, because I spent lots of my time and energy on them, and also because that was the beginning of my teaching career."
8	May	A boy	Student from low SES family, bad habits, poor grades. "He is from a very special family, because both of his parents are handicapped. They are extremely poor." "He graduated! I know I made him feel warm in his heart! Every time we met, I always encouraged him. He is now very happily working in a computer company. Although he works as a technician, he supports himself. That is great!"
9	Johnny	A girl	Good at art, was weak at math and science, but studied very hard. She made it! Earned good grades at math! "Instead of being disappointed about herself, she started to study math rigorously, seeking help from anybody around her, her peers, parents, and teachers." "Girls can learn math very well."
10	Gloria	Many students	Who offered her help during her writing a textbook about local geography for the first time, especially a boy who gathered valuable information for her….
11	Beth	Whole class	Students in her first year teaching were very impressive to her, and they still come back to see her after graduation. "A gesture or an expression might influence them greatly. … It is what students tell me that makes me set high standards."
12	Harry	A boy	Lazy, always sleeping in class, with serious behavioral problems. Very naughty and with bad learning habits. "So we had a talk in the elevator room. Since then, he studies very hard and performs very well."
13	David	A girl	Student from low SES family, very diligent and highly motivated, "She persistently came to my office and she knew where she needed help. It was her persistence that touched me. Then, I told her, 'Ok, I will help you with your problems after class.'"
14	Joan	A girl	Student from low SES family, lazy, without any goals. "She is from a very poor family, and was brought up by her mom. She thought her mom's job was of the lowest status…. She is not diligent at all, and so she has no future."
15	Hannah	A boy	Low SES Student, diligent, polite, well-behaved! "I take this student as a good example others. So motivated to learn, like a sponge sucking knowledge in!"

Three of the interviewees told stories about a whole class or many students, and twelve stories were about individual students. Nine of the twelve stories were about individual students from a low SES family. Generally, the interviewees told the stories about students from low SES who worked hard and were motivated to learn. However, some interviewees described students from poor families "lazy and without any goals" and that teachers should help these students "discover their potential". In general, the teachers expressed positive beliefs and high expectations of students in poverty and from low SES. Further, it is apparent from the interviews that their beliefs were enhanced by what they experienced in their daily teaching practice.

Theme 3: Education as Motivation to Move up

Historically, education is thought to be motivation to move up or out in Chinese culture, and Chinese people believe in the value of education even in common households in remote rural areas. Although the saying that "*The man who uses his brain will govern; the man who uses his strength will be governed*" is considered to be the feudal notion and to be abandoned by modern Chinese, it is deeply ingrained in Chinese people's mental models as "hidden" values winding their way in the society. Newsweek columnist Rana Foroohar (2010) points out that the priorities of the Chinese elite are to get a prestigious education, to make gobs of money and to take care of their parents. Thus, it is very common to hear parents educate their kids by telling them, "*As long as you master math, physics and chemistry, you will be the strongest in the world (*学好数理化，走遍天下都不怕。)." This also could be the reason why the majority of oversea Chinese students major in these fields, which is worth investigating in another study. The existing research has revealed that international graduate students tend to concentrate in the applied sciences (Takai, 2010). National Science Foundation reported that between 1986 and 1998, 21,600 Chinese students earned an Science & Engineering doctorate in the United States, and NSF (2010) just released a report stating that two countries—India, with

68,000 S&E students, and China, with 54,000 S&E students —accounted for almost half (47%) of all foreign S&E students in the United States in December 2009.

Victoria, the assistant commissioner of the Educational Bureau of the City, elaborated some of her cultural beliefs about the value of education,

> … if the student fails to complete his/her education, whatever the reason, most probably he/she will not be able to improve his/her life. To make matters worse, their own kids in the future will likely live in poverty as well (Interview on March 23, 2010).

Mendy, the principal in Old Elmwood Middle School, was born in the inland countryside and migrated to the northwest with her family when she was a child. In her interview, Mendy showed me many of her national and provincial rewards, especially the one for being an outstanding minority – her father is of Manchu nationality. She was selected to participate in the 60th anniversary celebration of China in Beijing in 2009. With pride she showed me lots of photos of that event, including one in which she was sitting right beside the Tian'anmen Rostrum. She talked about how she achieved her "self-realization" through education, and what she believed about education,

> I think students from poor families are more motivated to learn and to change their lives with education. It is very clear to them that if they don't try their best to get educated, their future will be working on farms, facing the ground all the time in the sun. Chinese traditional philosophy says, "The man who uses his brain will govern; the man who uses his strength will be governed". This is deeply rooted and ingrained in Chinese people's minds. You don't need to teach children the importance of having an education, because their life already vividly teaches them its importance. Education is an easy way, as a matter of fact, because

> you just study hard, and you need to seek or establish "Guanxi[43]"
> to get what you want or dream of…(Interview on March 25, 2010).

Beth, a Uygur teacher, taught math for two classes of 60 students each, all of whom were Uygur. She was very young, but quite an experienced teacher. Interactions between her and her students were very good. It was very hard to distinguish her from her students, because they looked to be so similar in age. To illustrate her relationship with her students, they called her "Big Sister", which, in Chinese schools, normally would be a show of disrespect to a teacher. But in this case it was obvious that she had encouraged them to address her in this way (Fieldnotes on April 15, 2010), and it indicated the very close relationship she encouraged with her students. She shared with me her beliefs about her students, and her beliefs about value of education,

> It doesn't matter if they come from poor family or rich family,
> it doesn't matter if it is a girl or boy, and it doesn't matter
> if they are smart or not, as long as they are diligence enough,
> they will learn well.…because nowadays society needs more
> knowledgeable people, you have to work and study hard to
> make a living. When you have good education, you will have
> more and better choices for your life and your work. In my
> opinion, the better you study now, the happier and luckier you
> will be in the future (Interview on April 15, 2010).

The excerpts above show that the teachers generally believed that education is the only way out for today's low SES students. If one is not satisfied with one's current life, go get an education. If one desires to live a different life from their parents or to create a better life for their children, go get an education. If one wants to realize her/his dreams, go get an education.

[43] "*Guanxi*" is a very important word in Chinese life, which means "relationship network". The Chinese mentality, especially businessmen's, is very much one of "You scratch my back, I'll scratch yours."

Theme 4 Pedagogical Beliefs shaped by Chinese Educational Traditions

In addition to the previous three major themes, both the quantitative and qualitative data revealed one more theme, represented in two pedagogical beliefs. First, participants generally believed that knowledge was hierarchical, and so students should master basic knowledge and skills before moving to more complex knowledge. Second, these self-reported beliefs aligned with the traditional Chinese way of teaching: chanting or rote learning (Schunk, 2009). That is, they believed in traditional Chinese pedagogical methods such as repetition.

1. Knowledge is hierarchical.

Quantitative data has shown that the middle school teachers believed: a) knowledge was hierarchical, therefore, students had to learn basics before moving to a "higher" level (Items 9 and 10 with mean of 3.70 and 3.80 respectively); b) Repetition was the best way to learn (Item 8, mean = 4.12), similar to chanting, which was one of the traditional Chinese ways of learning.

When I asked May, who enjoyed the beauty of, and loved teaching, math , what she thought about teaching math in middle school, she said,

> ….teaching math in middle school will produce some frustration. You know, some students did very poorly at math when they were in elementary school, and so it is so hard for me to teach these kids who don't have the knowledge that I can build upon. There is a gap that I cannot connect. These students cannot understand what I am teaching now (Interview on April 8, 2010).

Marsha was of Kazak ethnicity, and taught English. During the interview, she talked about the reasons why some students perform poorly,

> …one of the reasons is that these kids failed to lay a solid foundation when they were in elementary school. After

> entering middle school, where they must deal with more subjects and deeper knowledge, they easily get lost, and are left behind. Without a solid foundation, their house (knowledge accumulation) cannot stand, …and finally will fall apart (Interview on April 1, 2010).

As exemplified by the above excerpts, most of the interviewees talked about the importance of laying a solid foundation of knowledge, and then continuing to build hierarchically on that foundation. These notions support similar findings in the quantitative data that students had to learn the basics in order to move on to the higher level.

2. Beliefs in traditional Chinese pedagogical methods

Woods, the principal in Sunflower Middle School, was a very serious person with no smiles on his face. He had a big and "luxurious" office with a national flag and a computer on the desk. His school had a larger percentage of low SES students than the other two schools. From my insider's point of view, he was a typical party member. During the interview, he often claimed that this or that was required by government, and it was the only right thing to do is to follow what the government required (fieldnotes on March 26, 2010). When I asked about Chinese teachers' major beliefs about teaching and learning, he claimed,

> Reciting or chanting is the major way, maybe the most important way, of learning in Chinese Han culture. And more importantly, our culture deeply influences our teaching activities (Interview on March 26, 2010).

The interviewees, both arts and science teachers, also believed that repetition helped one remember important knowledge. May, the math teacher, talked about her teaching methods,

> I educate them by having them develop progressive learning habits for formulas and theories, first recite them, then try to understand them, and finally try to use them in various situations (Interview on April 8, 2010).

In contrast, Lucy, a pedagogical researcher in the city's Curriculum & Instruction Research Center, opposed this way of teaching. She talked about recent educational reforms including a shift from teacher-centered to student-centered teaching practices. She also thought that today's students were heavily influenced from Western culture, in particular, critical thinking and individualism. Consequently, students did not respond well to being asked to learn through reciting or repetition. She said,

> …..these students don't like this way of teaching, they don't like reciting, and consequently, when this is the only method used, they don't learn as well as others, and so learn less and perform more poorly on tests (Interview on April 7, 2010).

The excerpts from qualitative data strongly support the findings in the quantitative data that teachers' beliefs about effective pedagogical methods were heavily influenced by Chinese cultural and historical traditions (Item 8, mean = 4.11, 80%). There were few participants who voiced a dissenting opinion (5%). Lucy, the pedagogical researcher, was an example of one of them.

Summary of the chapter

This chapter illustrates four major themes in the educators' general beliefs about teaching and learning, and specific beliefs about different student groups. These self-reported beliefs are shaped and mediated culturally and historically. Four major themes include, firstly, the teachers in my sample believed diligence was the key for academic success, and that intelligence was not the decisive factor for learning, though it's also important. Although the quantitative data showed weak evidence and disagreement about

using IQ as a fixed measurement to effectively determine how to teach individual students (Item 12, mean = 2.91), and to judge whether students could or could not learn intellectually challenging materials (Item 11, mean = 2.95), qualitative data has provided very strong evidence about teachers' beliefs in diligence. Secondly, they claimed that they believed students from low SES or living in poverty generally had lofty aspirations and ambitions, and were motivated to learn since they have faith in education. Thirdly, they believed their students take education as motivation to move up or the way through which they could change their life. Fourthly, they believed knowledge was hierarchical, and that traditional Chinese ways of teaching such as repetition or rote learning were still effective.

Consequently, they held high expectations of these students in poverty and from low SES. They generally thought these students were motivated to learn with fewer behavioral problems. In addition, they believed that these students needed teachers' extra help due to unsupportive family environments. However, some teachers claimed that students from poor families did have behavioral problems, lack interest in learning, and their families could not offer help for learning. As a tentative conclusion, these beliefs may explain why teacher participants believed they treated all their hard-studying students the same as long as they studied hard. As a summary of this chapter, the following matrix presents a triangulated view of the two datasets – quantitative and quantitative, to illustrate whether they mutually support or contradict each other.

Table 15: Matrix of Major Findings Triangulating Quantitative Results & Qualitative Themes

Quantitative		**Qualitative Themes**			**Mutually Supportive Or Contradiction**
Item numbers in the questionnaire	**N =265 Mean**	**Diligence is the key!**	**Poor but with lofty aspirations and ambitions**	**Education is the only way up!**	
11. Intelligence is another way of saying that a student does or does not have the capacity to learn intellectually challenging material.	2.91	"A slow sparrow should make an early start."	"…students from poor families study very hard and they study well."	".. have to work hard in order to change their life ..."	Mutually Supportive + Contradicting
12. Intelligence is a fixed measurement, which may be used effectively to determine how to teach individual students.	2.95	"…only believe diligence."	"His only way is to study hard and get good education and prepare himself for better chances, nothing else matters"	The man who uses his brain will govern; the man who uses his strength will be governed.	Mutually Supportive + Contradicting
15. Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material.	2.13	"She is not diligent at all, and so she has no future."	"Old saying, Children from the poor grow up earlier."	"Kids from poor family are working harder and are more diligent."	Mutually Supportive Contradicting
18. I treat all of my students the same.	4.25	"…as long as they are diligent enough, they will learn well"	"I treat them all the same, no difference."	"get good education…moving up, happier life."	Mutually Supportive
56 & 57. Likelihood to hold low expectation of students in poverty and from low SES (Han and Non-Han)	2.13 & 2.12	"Poor, but she is not diligent at all, and so she has no future."	"kids from poor families with bad performances and sometimes with behavioral problems"	"…these kids' knowledge is not as much as the rich kids, due to their learning opportunities."	Contradicting

The next chapter presents findings from both the quantitative and qualitative datasets pertaining to teachers' beliefs differentiated by personal frame factors about teaching and learning, and about different student groups in terms of ethnicity, gender, family financial and social backgrounds, and their language ability. It describes the statistically significant differences between groups that were revealed through one-way ANOVA, as well as the results where the differences existed through post hoc tests. Further, these findings are triangulated with themes merged from the qualitative data.

Chapter Six – Teachers' Beliefs Differentiated by Personal Frame Factors

The personal frame factors are important because they play the key role throughout all activities in a schooling system (Poetter, 2007). Who the community members are directly and/or indirectly impact what and how they act in the systems on daily basis. The members of the schooling community – students, teachers, parents, administrators and other stakeholders have come together with different personal frame factors of their own, setting up goals/objects, taking up different roles, and making efforts towards the goals with available tools and mandate rules. It is the personal frame factors of individuals that determine what kind of persons (subjects) get involved in an activity system, which is rather crucial in achieving the goals/objects in the system. During the process of achieving goals, negotiation, compromising, tensions and contradictions occur in different settings at various levels, partially due to what individuals have brought into the system. The personal frame factors include family backgrounds, mastered knowledge, mental models (beliefs and expectations), interests and motives.

As revealed in the literature reviewed for this study, a growing body of research, particularly in the United States, investigates influences that the relative personal frame factors of teachers and students have on student academic success. It is argued that teachers' personal frame factors have an impact on the content taught, pedagogical choices, and interpretations of classroom situations and students' behavior (Smith, 2000), and further, that students' personal frame factors as who they are in the classrooms produce an impact on their learning as well. The research supports that students of a given ethnicity, when exposed to teachers of the same ethnicity, sometimes learn more and better (See Villegas & Lucas, 2002; Sleeter, 2008; Villegas & Davis, 2008). This could be related to the fact that these teachers tend to hold high expectations, and they are familiar with students' culture and communities, and thus are able to relate the curriculum and pedagogical techniques to students. The literature reveals that some teachers' personal

frame factors which have shaped their different beliefs and expectations do matter in students' learning. These factors include teachers' gender (Dee, 2005), ethnicity (Villegas & Davis, 2008), cultural experiences (Youngs and Youngs, 2001) and language ability (bilingual/multilingual) (Garcia-Nevarez et al, 2005).

Accordingly, in this study I collected the subjects' personal frame factors including gender, educational degree, income, ethnicity, years of teaching, language ability, the surroundings where they grew up, subject as well as grade that they were teaching, but in a different cultural setting – the northwest of China. The study aimed to explore how, if at all, Chinese teachers' personal frame factors shaped or mediated their beliefs about teaching and learning, and their expectations of students who are different - financially, linguistically and ethnically - from what the teacher perceives as the norm. The exploratory factor analysis (EFA) revealed that there were correlations existing between gender, ethnicity, educational degree, income, language ability, and growing-up surroundings, and there were no correlations between groups of teaching experiences (years of teaching), subject (art and science) and grade[44]. Thus, t-test and one-way ANOVA were conducted to analyze only those six correlated variables to investigate statistically significant differences. For gender, a t-test was conducted, while for other variables, ANOVAs and MANOVAs were conducted. The results obtained from analysis of both quantitative and qualitative datasets indicate that the Chinese teachers in the sample with different personal frame factors held different beliefs about teaching and learning in general and about various student groups in particular. The statistical analysis revealed significant differences existing among these groups, and interview data confirmed or sometimes contradicted these statistical results. First, the quantitative results with significant differences are presented below by variables respectively.

[44] Details see "Appendix M: EFA Report".

Quantitative Evidence

A T-test and one-way ANOVA were conducted to investigate the question "Are there any statistically significant differences in the responses to the 66-item questionnaire by the respondents with various personal frame factors?" The analysis was then carried out on six variables with regard to respondents' personal frame factors: gender, ethnicity, degree, income, language ability and the surroundings where they grew up. Only the significant differences at the $p < .01$ level are reported here.

Gender

The t-test results for gender variable are presented in Table 16 below, which summarizes the items with significant differences between respondents of male (n = 80) and female (n = 185).

Table 16: Items with Significant Differences between Male and Female Teachers

	t-test for Equality of Means (Equal variances not assumed)						
				Mean			
Item	t	df	Sig. (2-tailed)	Male n = 81	Female n =185	Mean Difference	Std. Error Difference
55. Students in poverty.	3.76	139	.000**	2.59	1.99	.59	.158
56. Han students from low SES	3.53	133	.001**	2.51	1.95	.56	.159
57. Non-Han students from low SES	3.33	132	.001**	2.51	1.97	.54	.162

**. p < .01

There are three items (55, 56 and 57) with a significant effect for gender variable at the level of p <. 01. For Item 55, $t(139) = 3.76$, $p < .001$. For Item 56, $t(133) = 3.53$, $p < .001$. For Item 57, $t(132) = 3.33$, $p < .001$. All of the three items were to investigate teachers' expectations of different student groups, particularly students with a negative stereotype. The t-test results of these three items indicated that more male teachers reported that they held low expectations of students in poverty and students from low SES, including Han and Non-Han (minority ethnic groups) than female teachers. In other words, the female teachers generally held higher expectations of these student groups than male teachers.

Ethnicity

The results of the one-way ANOVA analysis by variable of ethnicity are presented in Table 17 below, which summarizes the items with significant differences between the respondents of Han (n = 189), Turkic [45](n = 30), Hui (n = 35) and Others[46] (n = 11).

Table 17: Items with Significant Differences between Ethnic Groups by One-way ANOVA

Item	Source	Sum of Squares	df	Mean Square	F	Sig.
17. Students who do not use Mandarin as their primary language should not be in my class.	Between Groups	21.66	3	7.219	4.92	.002**
	Within Groups	381.84	260	1.469		
	Total	403.50	263			
56. Han students from low SES	Between Groups	15.97	3	5.322	4.13	.007**
	Within Groups	336.17	261	1.288		
	Total	352.14	264			
62. Female students	Between Groups	18.30	3	6.099	4.57	.004**
	Within Groups	348.10	261	1.334		
	Total	366.40	264			
63. Male students	Between Groups	17.58	3	5.859	4.39	.005**
	Within Groups	348.44	261	1.335		
	Total	366.02	264			
64. Students with well educated parents	Between Groups	19.36	3	6.454	4.94	.002**
	Within Groups	341.33	261	1.308		
	Total	360.69	264			

**. p < .01

Table 18: Central Tendency of the Items by Ethnicity Variable

#	Item	Han	Turkic	Hui	Others
		N= 190	N= 30	N= 35	N= 11
		Mean (Standard Deviation)			
17	Students who do not have Mandarin as their primary language should not be in my class.	2.88 (1.21)	2.00 (1.07)	2.78 (1.16)	2.27 (1.42)
56	Han students from low SES	2.19 (1.33)	1.66 (1.09)	2.39 (1.21)	1.36 (1.83)
62	Female students	2.24 (1.10)	1.90 (1.21)	2.53 (1.28)	1.18 (1.15)
63	Male students	2.20 (1.11)	1.86 (1.30)	2.50 (1.32)	1.18 (0.39)
64	Students with well educated parents	2.21 (1.12)	1.76 (1.04)	2.56 (1.40)	1.27 (0.45)

A one-way ANOVA was conducted to compare the effect for ethnicity. There was a significant effect for four ethnic groups at the p<.01 level for five items (17, 56, 62, 63,

[45] Turkic = Uygur, Kazak and Tartar

[46] Others = Mongolian, Xibe and Manchu.

and 64). Item 17, F (3, 260) = 4.92, $p < .002$. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Turkic groups (M = 2.00) was significantly different than Han (M = 2.89), Hui (M = 2.78) and "Others" (M = 2.57). However, the other three groups did not significantly differ from each other. Taken together, these results suggest that more Turkic respondents chose to keep students who don't use Mandarin as their primary language in their classroom. There was a significant effect for Item 56 (Han low SES students) for the four ethnic groups [F (3, 261) = 4.13, $p < .007$]. The Tukey HSD Post hoc test revealed that the mean score for the group of "Others" (M = 1.36) was significantly different from the other three groups: Han (M = 2.17), Turkic (M = 1.66) and Hui (M = 2.39). These results indicated that more respondents in the "Others" group disagreed that they held low expectations of Han low SES students.

There was a significant effect for Item 62 for the four ethnic groups [F (3, 261) = 4.57, $p < .004$]. The Tukey HSD Post hoc test revealed that the mean score for the group of "Others" (M = 1.64) was significantly different from the other three groups: Han (M = 2.19), Turkic (M = 1.89) and Hui (M = 2.53). These results indicated that more respondents in "Others" group did not think that they held low expectations of female students. There was a significant effect for Item 63 for the four ethnic groups [F (3, 261) = 4.39, $p < .005$]. The Tukey HSD Post hoc test revealed that the mean score for the group of "Others" (M = 1.18) was significantly different from the other three groups: Han (M = 2.19), Turkic (M = 1.86) and Hui (M = 2.50). These results indicated that more respondents in "Others" group disagreed that they held low expectations of male students. There was also a significant effect for Item 64 for the four ethnic groups [F (3, 261) = 4.94, $p < .002$]. The Tukey HSD Post hoc test revealed that the mean score for the group of "Others" (M = 1.27) was significantly different from the other three groups: Han (M = 2.19), Turkic (M = 1.75) and Hui (M = 2.56). These results indicated that more

respondents in “Others” group disagreed that they held low expectations of students with well-educated parents.

The one-way ANOVA on ethnicity revealed the significant differences between ethnic groups at five items at the $p < .01$ level. The post hoc analysis results suggested, 1) more Turkic respondents agreed to keep students who didn’t use Mandarin as their primary language in their classrooms, indicating they were more willing to accept bilingual learners; 2) More respondents in “Others” group reported that they held higher expectations of Han low SES students, female and male students as well as the students with well-educated parents, though the other three groups also did not hold low expectation of these students. However, it should be noted that the sample size of the group of “Others” was comparatively small with only 11 participants.

Educational Degree

The results of one-way ANOVA by variable of educational degree are presented in Table 19 below, which summarizes the items with significant differences between the respondents with associate (n = 37), bachelor (n = 204), master (n = 15) and other degrees (n = 9)[47].

[47] Other degrees = “professional titles” given to veteran teachers who didn’t have educational degrees due to historical reasons, but had been teaching in schools for decades.

Table 19: Items with Significant Differences in Degrees by One-way ANOVA

Item		Sum of Squares	df	Mean Square	F	Sig.
11. Intelligence is another way of saying that a student does or does not have the capacity to learn intellectually challenging material.	Between Groups	17.875	3	5.958	5.261	.002
	Within Groups	295.581	261	1.132		
	Total	313.457	264			
12. Intelligence is a fixed measurement, which may be used effectively to determine how to teach individual students.	Between Groups	23.711	3	7.904	7.810	.000
	Within Groups	264.115	261	1.012		
	Total	287.826	264			
15. Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material.	Between Groups	20.467	3	6.822	5.481	.001
	Within Groups	324.869	261	1.245		
	Total	345.336	264			
19. If students are not motivated to learn, there is nothing that teachers can do.	Between Groups	17.179	3	5.726	4.593	.004
	Within Groups	325.387	261	1.247		
	Total	342.566	264			
55. Students in poverty.	Between Groups	29.244	3	9.748	7.646	.000
	Within Groups	332.771	261	1.275		
	Total	362.015	264			
56. Han students from low SES	Between Groups	24.183	3	8.061	6.415	.000
	Within Groups	327.953	261	1.257		
	Total	352.136	264			
57. Non-Han students from low SES	Between Groups	28.459	3	9.486	7.488	.000
	Within Groups	330.651	261	1.267		
	Total	359.109	264			
60. Minority students with fluent Chinese	Between Groups	23.408	3	7.803	5.833	.001
	Within Groups	349.135	261	1.338		
	Total	372.543	264			
62. Female students	Between Groups	22.382	3	7.461	5.660	.001
	Within Groups	344.018	261	1.318		
	Total	366.400	264			
63. Male students	Between Groups	23.401	3	7.800	5.942	.001
	Within Groups	342.622	261	1.313		
	Total	366.023	264			
64. Students with well educated parents	Between Groups	21.154	3	7.051	5.420	.001
	Within Groups	339.541	261	1.301		
	Total	360.694	264			

The one-way ANOVA revealed that there were eleven items (11, 12, 15, 19, 55, 56, 57, 60, 62, 63 & 64) with a significant effect for variable of educational degree[48]. The Tukey post hoc test revealed that the respondents with "Bachelor" degree had significant differences from the other three groups. They held different beliefs about teaching and

[48] Item 11, F (3, 261) = 5.25, $p < .002$. Item 12, F (3, 261) = 7.81, $p < .001$. Item 15, F (3, 261) = 5.48, $p < .001$. Item 19, F (3, 261) = 4.59, $p < .004$. Item 55, f(3, 261) = 7.65, $p < .001$. Item 56, f(3, 261) = 6.42, $p < .001$. Item 57, f(3, 261) = 7.49, $p < .001$. Item 60, f(3, 261) = 5.83, $p < .001$. Item 62, f(3, 261) = 5.67, $p < .001$. Item 63, f(3, 261) = 5.94, $p < .001$. Item 64, f(3, 261) = 5.42, $p < .001$.

learning (Items 11, 12, 15 and 19). More of them disagreed to use intelligence as a measurement to judge students' learning abilities, and they disagreed that teachers could not do anything to help the unmotivated students. In addition, compared to the other three groups, the majority of teachers with a bachelor degree reported to have higher expectations of different student groups, who were most likely with negative stereotypes such as students in poverty, low SES students and minority students (Items 55, 56, 57, 60, 62, 63 and 64).

Income

The results of one-way ANOVA by income variable are presented in the table below, which summarizes the item with significant differences between the respondents with monthly salary of RMB Y2000 (n = 59), Y3000 (n = 204) and Y4000 (n = 2).

Table 20: Items with Significant Differences by Income Variable by One-way ANOVA

Item		Sum of Squares	df	Mean Square	F	Sig.
4. Implementation is Challenging	Between Groups	5.75	2	2.87	4.83	.009
	Within Groups	155.89	262	.60		
	Total	161.64	264			

A one-way ANOVA was conducted to compare the effect for income. There was a significant effect for three income groups at the p<.01 level only for Item 4 [F (2, 261) = 4.83, $p < .009$]. The Tukey post hoc test revealed that the group with monthly income of Y2000 was significantly different from the other two groups at Items 4, indicating that more respondents in this group reported it was very challenging to implement a variety of instruction to meet needs of different students. With lowest income, the respondents in this group were more likely novice teachers.

Language Ability

The results of one-way ANOVA by language ability are presented in the table below, which summarizes the items with significant differences between the respondents of monolingual (n = 142), bilingual (n = 104) or multilingual (n = 19).

Table 21: Items with Significant Differences in Language Ability by One-way ANOVA

Item		Sum of Squares	df	Mean Square	F	Sig.
16. Behavior-disordered students are best taught in a controlled environment removed from the regular classroom.	Between Groups	20.12	2	10.06	7.92	.000
	Within Groups	331.64	261	1.27		
	Total	351.76	263			
17. Students who do not use Mandarin as their primary language should not be in my class.	Between Groups	17.17	2	8.58	5.80	.003
	Within Groups	386.33	261	1.48		
	Total	403.50	263			

A one-way ANOVA was conducted to compare the effect for the variable of language ability. There was a significant effect for three language groups at the p<.01 level for Item 16 [F (2, 261) = 7.92, $p < .001$] and Item 17 [F (2, 261) = 5.80, $p < .003$]. The Tukey post hoc test revealed, 1) The bilingual group was significantly different at Item 16, and more of them disagreed to teach students who had behavioral problems in a controlled environment; 2) The multilingual group is significantly different at Item 17, indicating that they were more willing to have bilingual students in their classrooms.

The Surroundings Where They Grew up

The results of one-way ANOVA by the variable of "growing-up surroundings" are presented in table below, which summarizes the items with significant differences between the respondents growing up with Han only (n = 99), with minority only (n = 18), or with mixed population (n = 148).

Table 22: Items with Significant Differences by Variable of Growing-up Surroundings by ANOVA

Item		Sum of Squares	df	Mean Square	F	Sig.
17. Students who do not use Mandarin as their primary language should not be in my class.	Between Groups	11.168	2	5.58	4.72	.010
	Within Groups	392.332	261	1.50		
	Total	403.500	263			
56. Han students from low SES	Between Groups	13.847	2	6.92	5.36	.005
	Within Groups	338.289	262	1.29		
	Total	352.136	264			
57. Non-Han students from low SES	Between Groups	15.901	2	7.95	6.07	.003
	Within Groups	343.209	262	1.31		
	Total	359.109	264			
61. Minority students with broken Chinese	Between Groups	27.117	2	13.56	9.55	.000
	Within Groups	372.068	262	1.42		
	Total	399.185	264			
62. Female students	Between Groups	29.123	2	14.562	11.31	.000
	Within Groups	337.277	262	1.287		
	Total	366.400	264			
63. Male students	Between Groups	20.978	2	10.489	7.96	.000
	Within Groups	345.045	262	1.317		
	Total	366.023	264			
64. Students with well educated parents	Between Groups	19.386	2	9.693	7.44	.001
	Within Groups	341.309	262	1.303		
	Total	360.694	264			

The one-way ANOVA revealed that there were six items (17, 56, 57, 61, 62, 63 & 64) with a significant effect for variable of the grow-up surroundings.[49] The Tukey post hoc test revealed that the respondents who grew up with mixed population were significantly different from the other two groups. The majority of them disagreed to keep bilingual learners out of their classrooms. They reported that they held high expectations of different student groups, especially with deficits or with negative stereotypes such as minority students, low SES students, and students in poverty.

Summary of the Quantitative Results

The quantitative data analysis with one-way ANOVA reveals that teachers with different personal frame factors held different beliefs about teaching and learning, and

[49] Item 17, F (2, 262) = 4.72 $p < .026$. Item 56, F (2, 262) = 5.36, $p < .005$. Item 57, F (2, 262) = 6.07, $p < .003$. Item 61, F (2, 262) = 9.55, $p < .001$. Item 62, F (2, 262) = 11.31, $p < .001$. Item 63, F (2, 262) = 7.96, $p < .001$. Item 64, F(2, 262) = 7.44, $p < .026$.

different expectations of student groups. The post hoc tests revealed there were significant differences within variables. 1) Gender: More female teachers held higher expectations than male teachers of students in poverty and students from low SES of all ethnic groups including Han and Non-Han; 2) Ethnicity: More Turkic respondents disagreed to keep students who didn't use Mandarin as their primary language out of their classrooms, indicating they were more willing to have bilingual learners in their classes. More respondents in the "Others" ethnic group held high expectations of Han low SES students, female and male students as well as the students with well-educated parents; 3) Educational degree: More respondents with a bachelor degree claimed that they did not use intelligence as a measurement to judge students' learning abilities, and they disagreed not to help the unmotivated students. In addition, the majority of them held higher expectations of different student groups, most likely with negative stereotypes; 4) Income: More respondents with lowest income agreed it was very challenging to implement variety of instructional strategies[50] to meet needs of different student groups and they did not believe that they had done so. It is noticeable that the group with the lowest income was more likely composed of the novice or the young teachers; 5) Language ability: The bilingual group more likely disagreed to teach students who had behavioral problems in a controlled environment. More multilingual teachers disagreed to keep students who didn't use Mandarin as their primary language out of their classrooms, indicating they were more willing to have bilingual students in their classrooms; 6) Surroundings where they grew up: The respondents who grew up with mixed population were significantly different from the other two groups. This group held higher expectations of students with deficits or with negative stereotypes especially students in poverty and from low SES as

[50] In Chinese schooling, "varieties of instructional strategies" are often seen as different strategies to teach students categorized by performances. That is, strategies to teach majority, high achievers and low achievers.

well as minority students. Next, qualitative evidence is discussed to serve the purpose of triangulation of the data.

Qualitative Evidence

One of the 10 questions in the semi-structured interview protocol for teachers was to investigate if teachers' personal frame factors would influence their beliefs about teaching and learning. At the interviews, most of the teachers talked about the differences between male and female teachers, and old and young teachers. Due to the political sensitivity of the time when the study was conducted (only a half year after the 2009 riot), some interviewees particularly avoided talking about differences in teachers with different ethnic backgrounds, and others just explicitly and firmly claimed that teachers' ethnic backgrounds would not influence their own beliefs and they did not think it would have an impact on other teachers' beliefs either.

Joana, a Hui, was a new math teacher. She used multimedia to teach her math lesson. She had students from several ethnic groups, including Han, Hui, Buyi, Mongolian, and Turkic. She loved her students, and was loved by them, which could be easily seen from her interactions with her students. Her explanation to me was that because she was young, and there was no generation gap between her and her students, they got along with each other very well. For instance, they enjoyed similar music, and they followed the same stars (Fieldnotes on April 1, 2010). When I asked her about relationship between teachers' personal factors and their beliefs about teaching and learning and about their students, she said, proudly but firmly,

> I don't think my personal background influences my beliefs about my students from different backgrounds. No! Not at all . … I don't think other teachers' personal backgrounds influence their beliefs about students, either! (Interview on April 1, 2010)

Jenny, a Han Chinese teacher, was also a novice teacher. Her class won a lot of prizes in various activities, and she told me her experiences of classroom management was to trust the students and treat them as friends! Real friends, as she said several times (Fieldnotes on April 9 2010). She expressed different opinions.

> Teachers, also other human beings, all have this or that kind of prejudice, and this is quite a common societal phenomenon. This is unavoidable. However, I think most of teachers around me can or try to treat every kid in the same way. But they, same as me, prefer the students who are diligent, who are honest… Most of teachers are Han, and they might believe in the same religion, while minorities believe in something else. But religion is something in your head, which cannot be, or is difficult to be, seen from outside. I cannot tell the difference, but it doesn't mean there is no difference (Interview on April 8, 2010).

More interviewees talked about differences between male and female teachers in terms of teaching methods, ways of class management, and beliefs about different students. Joan, a Han, was an English teacher. Her teaching was very formal with stern face but smiling, and she was wearing a microphone to teach in her big class! She clearly had the absolute authority over her students, and she was very strict to them. The fact that she could not stand students reacting slowly is an example. When she asked students coming to the front for some presentation, she shouted, "Fast! Faster!" and the students ran instead of walking towards her (Fieldnotes on April 20, 2010). She gave me the impression that she was a party member, because at the interview, she tried to align with ideas published in the newspaper rather than her own thoughts. She talked about her beliefs about teachers' influences on students as well as teachers' differences by gender,

> …male teachers are very humorous, and students like this

> kind of teachers. Generally speaking, teachers actually produce very profound influences on students, especially the good teachers. It is said that after students have studied three years in our school, we can tell who is their homeroom-teacher, and you can see their homeroom-teacher in them from what and how they do. Female and male teachers,… well, in my opinion, …. male teachers tend to be firm and unyielding; while female teachers are gentle and soft, and they are sweet-natured. For sure, they treat students in different ways, because they have different beliefs about students (Interview on April 20, 2010).

Lucy, the pedagogical researcher, talked more about differences between male and female teachers in the following way,

> For male teachers, I think, they are very creative. They often create new things in teaching. And I think this is the main difference between male teachers and female teachers. What's more, female teachers want to control the class. But male teachers would love students to be free. They give them [students] more chances to do things themselves. … Male teachers concentrate on major issues in class (Interview on April 7, 2010).

Wendy, the principal of Double Arrow Middle School, believed that teachers' knowledge as one personal frame factor would influence teaching and learning. However, in general, she did not think teachers' backgrounds influenced their beliefs. She described the teachers in her school as below,

> We have some male teachers whose knowledge about the subject is very profound and rich, but they just cannot impart it to students. The Chinese saying is "Dumplings in teapot which are hard to pour out".

> The ways to tell students what you understand, what you think, what you feel are very important for students' learning. In my opinion, a good teacher should be an orator, an actor, to perform on the platform to attract every kid. ….I don't think this kind of teacher understands their students, understands how to teach…. (Interview on March 29, 2010).

She talked about relationship between personal frame factors and being a teacher in general,

> ….even if you come from a family of very high status, or you have master degree or you are very rich, or you believe in a different religion, as soon as you enter our school, you are exactly the same as others, because you have same responsibilities and that's what you are paid for. You cannot judge students because they are living in different backgrounds from yours….This is not allowed, and I don't think our teachers do so.

However, some interviewees such as Beth, a Uygur math teacher, agreed that teachers' personal frame factors would influence their beliefs about their students in some ways. She admitted,

> I do have preferences. Any human beings have preference or favorite. Even parents have favorite among their kids. When I like them, I hold high expectations of them, and I more likely am willing to help them. But teachers should not show their preference in public in class, and they should keep it in their hearts. I understand more the kids from low SES because of my own life experiences, and I know how to help them. Just as simple as that (Interview on April 15, 2010).

During the interview, many teacher participants talked about differences between

male and female students as well. Jenny, a Han female, talked about her beliefs about male and female students that she had taught in middle school,

> … we see more boys than girls among these poorly performing students, due to their behavioral problems and learning habits. Maybe the reason is that they are naughty, and they play instead of studying. Girls tend to behave well, and they listen to their parents. Their learning habits are good (Interview on April 8, 2010).

According to Jenny, the reasons why some students performed poorly were due to behavioral problems and learning habits. During the interview, she didn't mention any other personal frame factors of students such as their IQ or their family social and financial backgrounds. Pearl, a female Mongolian teacher, also believed that,

> …girls are very stable in junior high and they don't make many troubles for teachers. But boys are different, and they are naughty. However, they change a lot during this period (Interview on April 7, 2010).

Beth, the female Uygur teacher, thought it was more important for female students to have education, and girls should work harder than boys. She said,

> I think girls should have financial independence, and we should have our own ideas and opinions. We shouldn't depend on men. Hence, if you want to become a happy lady, you have to study hard now. If girls want to learn, I am ready to help them (Interview on April 15, 2010).

From his teaching experiences, Harry, a male Tartar[51] who taught biology, believed that boys needed more attention from teachers,

> In every test, the lowest scores must be boys, and that is for sure,

[51] Tartar belongs to Turkic.

> because they are naughty, and they don't like learning. The majority of intermediate are girls. The boys are among the best, too. That indicates that boys can be very good and can also be very bad. But if you pay more attention to boys, they can learn very well (Interview on April 15, 2010).

On the contrary, Liz, a female Han, had obvious preference to boys. She talked about creativity and abstract thinking ability of her male students. Then, she concluded,

> Girls tend to be more careful and diligent. They did better in primary school. Junior high requires more and more skills of imagination and creativity, especially in Grades 8 and 9, boys start to catch up and surpass girls. They are especially stronger in math and science (Interview on March 31, 2010).

In general, the qualitative data revealed that more participants believed personal frame factors especially ethnicity did not have great impact on their beliefs about their students who were different - financially, linguistically or ethnically - from what teachers perceived as the norm, though some did believe personal frame factors would influence teachers' beliefs, especially teachers' gender, knowledge and family backgrounds. The qualitative data reveals that the interviewees held different beliefs about female and male students as well as students with behavioral problems. They believed that poor academic performances were mainly due to bad learning habits and misbehavior in class, and had little to do with students' family backgrounds.

Summary of the Chapter

The findings in this chapter revealed that teachers' personal frame factors differentiate their beliefs. In this study, participants' gender, ethnicity, educational degree, income, language ability and cultural experiences such as grow-up surroundings of the participants mediated what they believed about teaching and learning and their

expectations of different student groups. However, qualitative results contradicted the quantitative findings regards to influence on beliefs by teachers' ethnicity. Questionnaire analysis revealed significant differences in ethnicity, while interview data showed there was little influence on beliefs by teachers' ethnicity, which might be due to some political reasons (to be discussed in "Discussion Section").

In general, the statistical analysis revealed that the significantly different self-reported beliefs mediated by personal frame factors of the respondents focused on beliefs about different students groups, especially students with deficit or negative stereotypes (Items 55, 56, 57, 60, 61, 62, 63 and 64). There were more significant differences in beliefs about these students by teachers' gender, ethnicity, educational degree, and growing-up surroundings. However, there were fewer significance differences in beliefs about these students by teachers' language category and income category. The qualitative data analysis revealed that teachers' gender, knowledge and family background influenced their beliefs about teaching and learning, and about student groups. The following matrix presents the triangulation of the two datasets to illustrate whether the major differences mutually support each other or they are contradicting to each other.

Table 23: Matrix of Major Findings Triangulating Quantitative Results and Qualitative Themes

#	Item	Respondents' Personal Backgrounds of Participants						Mutually Supportive Or Contradic-tion
		Quantitative				Qualitative		
		Sig. (Two tailed) p<.01				Gender	Similar Backgrounds	
		Gender	Ethnicity	Degree	Grow-up With			
55	Students in poverty	.000		.000	.013	Female Higher expectations	Better understanding	Supportive
56	Han students from low SES	.001	.007	.000	.005	Female Higher expectations	Better understanding	Supportive
57	Non-Han students from low SES	.001	.020	.000	.003	Female Higher expectations	know how to help	Supportive
60	Minority students with fluent Chinese		.014	.001	.010	Good at language	Appreciate them	Supportive
61	Minority students with broken Chinese		.020	.011	.000	Need more help	More acceptable	Supportive
62	Female students		.004	.001	.000	Careful Well-behaved	Not good at math and science	Contradicting
63	Male students		.005	.001	.000	Naughty, but smart	Will catch up in senior high	Supportive and Contradicting

The next chapter presents the findings from both quantitative and qualitative datasets pertaining to teachers' beliefs that are influenced, manipulated and constrained by political and organizational frame factors about teaching and learning, and about different student groups. Further, it discusses the significant differences between schools that adopt different policies and/or have unique organizational structures.

Chapter Seven – Teachers' beliefs influenced by political and organizational frame factors in highly centralized schooling system

Classrooms are not autonomous units, and classroom events are greatly influenced and determined by state mandates and regulations as well as organizational norms, rituals and obligations (Posner, 2004). Political and organizational frame factors determine which individual(s) in the systems do what and how. Political frame factors include national and provincial mandates, regulations and requirements – especially, in case of this study, the mandated standardized tests including provincial entrance examination for middle schools and national college entrance examination for high schools. Posner defines organizational frame factors as administrative factors, including organizational structure, ability groupings, policies, etc. Quantitative and qualitative data from the three schools were analyzed, compared and triangulated to find empirical evidence to address the questions if schools with different policies and/or classes with, or without, large numbers of diverse students such as bilingual learners would have significantly different teachers beliefs about teaching and learning as well as different expectations of their students, and if with these different beliefs, expectations and schooling dynamics, teaching practices would vary.

Prior to presenting the results of this chapter, it is necessary to review some basic information about the three selected schools. School #1/ Sunflower Middle School and School #2/Old Elmwood Middle School were similar to each other in terms of the demographic composition of both teacher and student populations, which were mixed, yet primarily Han. The scale of the two schools was about the same, with 35-40 classrooms. The major difference was that Sunflower served more students from low SES. However, the organizational structure of School #3/ Double Arrow Middle School differs very much from Schools 1 and 2. Half of its student population (1429 out of 2867) was Uygur (Turkic), and 109 out of its 249 teachers (43.8%) were minorities, mainly Uygur. The

school had its unique situation, functionally and politically, because the school was pledged to adopt different local government policies favorable to minority students. One example was the "bilingual education policy" for Uygur students. As a result, these three schools had different political and organizational frame factors in their systems: more students from low SES vs. fewer students from low SES; more bilingual learners vs. fewer bilingual learners; more Han students vs. more Non-Han students; more supported minority students with favorable policies vs. less supported minority students.

Results of both the qualitative and quantitative data analysis reveal that teachers' self-reported beliefs about teaching and learning, and their expectations of different student groups were heavily influenced by the strong political atmosphere, highly centralized schooling system, and the demographic composition of schools. The statistical analysis revealed significant differences among the three schools; interview data usually confirmed, but sometimes contradicted, the statistical results. Two themes emerged from triangulation of the two datasets: 1) Teachers' beliefs self-reportedly correlated with tensions and contradictions present in a strong political environment; 2) Teachers' beliefs significantly differed between schools with different organizational frame factors. These two themes are illustrated with both quantitative and qualitative evidence.

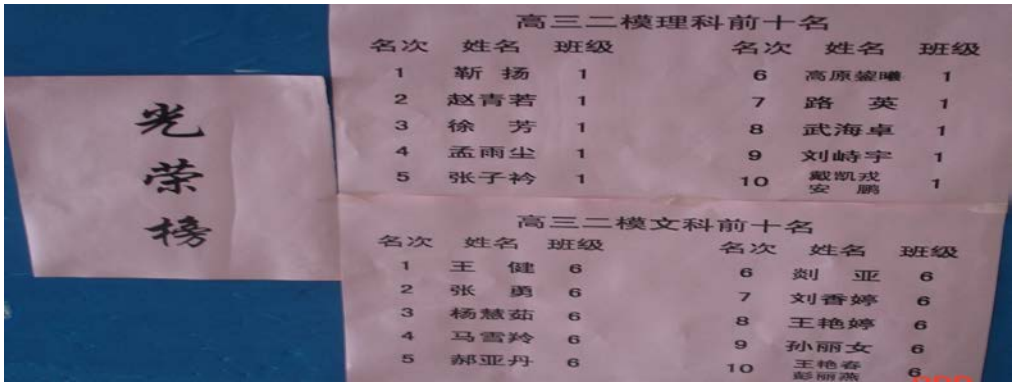
Theme 1: Teachers' beliefs seemed to correlate with tensions and contradictions present in a strong political environment.

Ubiquitous political influences

Political influences can be seen everywhere in Chinese schools. Slogans as mottos, and portraits of successful figures as examples to follow, are posted in classrooms, in hallways, and even on the light poles on campus. Slogans are carefully chosen from political philosophies, ideologies, cultural values or organizational norms reflecting the expectations and objectives of government or other concerned organizations. Slogans are found above the blackboards on the front wall in every single classroom of the three

selected schools. The carefully and purposely chosen successful individuals cover a wide range of time and space, including mathematicians, scientists, philosophers, etc., both domestic and foreign from ancient to modern times. It is worth noticing that neither athletes nor pop stars were selected. Bill Gates' portrait, together with his "eleven rules" for youth, was found in all three schools, though his rules could possibly have been translated into Chinese in such a way as to serve political purposes. For instance, every one of the original 11 rules was summarized in Chinese in a way first to emphasis the local values. Another common practice in Chinese schools is to set students with high scores as good examples for the rest of the students, and often their grades are posted in a public place such as in a hallway or the school cafeteria walls. The following photos taken on site demonstrate, to a limited degree, the political environment in Chinese schools.

Photo 1: Honor Board in a Hallway in Old Elmwood



The top ten students in 2009 national college entrance examination in art and science respectively.

Photo 2: Slogan above the blackboard in the classroom in Sunflower

The slogan says "Create Yourself, Surpass Yourself".

Photo 3: Slogan in the Hallway in Old Elmwood

Photo 4: Bill Gates' 11 Rules for the Youth in a Conference Room at Double Arrow

Such ubiquitous political slogans, together with other political activities and movements send out messages of both the government and the society, permeating daily school life. "Teaching the textbook, educating the person" has been a "mantra" for teachers as a whole. When I observed Liz, a geography teacher, she was teaching about Taiwan – an important but sensitive topic. She started the lesson by asking her students to imagine what the geographic shape of Taiwan looked like to them, encouraging them to use metaphor. After a couple of minutes, a student shouted out, "It looks like a boat!" She became very excited, "Isn't that right? Wonderful! I love your metaphor!" Then, she took the opportunity to bring her students to a planned direction, "It indicates that Taiwanese are longing for sailing back to their motherland's arms!" She urged students to think of something else. She waited for a while, but the class was silent. Then, she guided them, slowly but with a vivid facial expression, "Doesn't it look like a spindle? Right? Taiwanese are weaving threads of nostalgia every day!" (Fieldnotes on March 31, 2010). It is clear that a strong political atmosphere influences everyone in the community, including what they do and how they act.

Two influential policies

Xinjiang, one of the six autonomous minority regions in China, is in a unique situation to which the Central Government sometimes adopts different policies to adapt to the local reality. During the time of this study, there were some existing policies and some newly issued policies in the local schooling system. Two policies stood out: First, the "Two Basics" policy, and second, the "Bilingual Education" policy. Both policies had great impact on schools in the Region, but this impact was seen differently depending on one's perspectives.

1. "Two Basics" Policy

The Chinese Central Government committed to achieving Millennium Development Goal 2[52] (MDG2) of providing education for all, and set up the goals of "basically eliminating illiteracy and basically universalizing nine-year compulsory education." (China decided to go through ninth grade instead of just primary required by MDG2). This nationwide movement was titled "Two Basics" in short. By the end of 2002, 91% of the country had realized the "Two Basics" goal, but only 77% of the western region had accomplished this goal; 372 counties, 83% of the population of which were minorities, had not yet achieved 9-year compulsory education, 60 counties had not yet provided full primary education, and 260 counties were still fighting illiteracy among young and middle-aged adults (Wang, 2006b). Therefore, the Chinese State Council released an action plan in April 2003 in which special emphasis was given to the Western Region. Since then, Xinjiang from the county to the regional level has been endeavoring to achieve the "Two Basics" goal. In 2009, it finally accomplished the goals, passing an evaluation by the National Monitoring Delegation. Because nine years of education is compulsory and free, the governments, both local and regional, are obligated to allocate certain funds for education. Therefore, it is mandated that each school, except some key

[52] United Nation's Millennium Development Goal. Goal 2: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

schools for educational experiments pertainng to curriculum and pedagogy, has to accept every student who has residency in the school district. This mandate has produced much tension and much contradiction in the schooling system.

One of the most significant consequences of this policy was that student demographic composition in some schools changed dramatically, producing tensions and new challenges. Of the three schools in this study, School 1/Sunflower Middle School, was greatly influenced by this policy, whereas the other two schools were not. Prior to the policy, Sunflower Middle School had recruited students from all over the region (the province), but now, because it was located in the outskirts of the city where there was transient population such as street vendors and seasonal farm-workers, it had to accept many more low SES students, and it was not allowed to recruit students elsewhere other than its district.

2. "Bilingual Education"

Starting from 2004, Xinjiang was required to adopt a bilingual-education policy (Ma, 2009) which facilitated the teaching of all subjects in Chinese, the official language, to minority students. From 2004 to when the study was conducted in 2010, only science and math subjects were taught in Chinese. Some of these subjects were taught by Han teachers, but primarily by minority teachers. The principal of School #3/Double Arrow Middle School said that other subjects, e.g. politics, history, and geography, would be taught in Chinese in the near future (Interview on March 29, 2010).

As part of the implementation of this policy, some minority schools were merged with Han or mixed schools, resulting in some huge organizational and structural, as well as demographic changes in the local school system. School 3/Double Arrow Middle School was among them. It had been a mixed school, but was merged with a Uygur school, resulting in 19 out of 47 classes being composed of Uygur students only. There were other schools in the city in the similar situation. Although both the city and regional

governments had invested tremendously in helping these new schools, from providing advanced equipment and new buildings as well as teacher training, this policy brought important changes, not only in the demographic composition of the school, but also its organizational dynamics.

On top of these two policies, the long-existing one-child policy[53] also started to impact the schools' demographic composition. The one-child policy strictly stipulates that Han Chinese families may have only one child, while minority households may have two children. In 2009, for the first time, the City saw more minority students enrolled in junior middle schools than Han students (it might had happened some years earlier in elementary schools) (Interview with the Assistant Commissioner of the Education Bureau on March 23, 2010). Wendy, a principal, also stated during her interview on March 29, 2010 that there were more minority than Han students in Grade 7 this year (2010) in her school.

The National College Entrance Examination – "Gaokao Baton"

The Chinese educational system is highly centralized (See "Site Selection" in Chapter IV: Methodology). The Ministry of Education (MOE) is in charge of the nationwide K-12 schooling system as well as tertiary education, including curriculum and instruction. Except for a few metropolitan areas and provinces on the east coast, all high schools participate in an annual national college entrance examination prepared by the MOE[54]. It has been a fierce protracted controversy in Chinese academia whether the national college entrance exam ("Gaokao Baton") is an obstacle to China's ability to implement educational reforms to improve education, and further, whether this exam should be retained or abolished for good of students, in spite of its political, social and educational functions (Zheng, 2008). The truth of the matter is that this exam still plays a crucial role in K-12 education in China, and undeniably, teachers teach and students learn based on what is tested in this exam, which mainly tests for factual knowledge. That

[53] The One-Child policy was introduced in 1978, but strictly applied nationwide from the early 1980s in China.
[54] There were 10.2 million students taking the 2009 college entrance exam (*The China Youth Daily*, 2009)

teachers teach to this exam could partially explain why teachers in the sample thought Chinese traditional pedagogical ways such as rote learning are effective. As one interviewee claimed, "…one of the most important things is to study the test guidelines at our weekly Teaching Group meeting" (Pearl, interview on April 7, 2010). Consequently, what teachers believe what they should do, as well as how they should do it, is framed by policies like the annual national college entrance examination.

Lisa, a Han, taught eighth grade English in Sunflower, whose student population changed dramatically in recent years. She was extremely quiet and shy. She taught in a very low voice, almost a whisper. Her lesson could be defined as "typical language teaching" in China –dictation, reading out loud, repetition and reciting from memory. She rarely had her students engage in other activities such as pair work or group work. Her lessons could be very boring, and I saw some students sleeping with their heads resting on their desks. She seemed to lack classroom management skills as well, since she could not get her students to do what she expected. For instance, she noticed that one student did not take notes. Right in the middle of her teaching, she asked suddenly, "where is your notebook?" The student answered impatiently, "In my drawer!?" and the students nearby supported him by saying, "He has taken down all that you said already!" I was shocked to see the interactions between this teacher and her students (Fieldnotes on April 1, 2010). She explained how she prepared for her lessons,

> We have to organize our teaching according to testing guidelines (考试大纲)…. how and what we teach in English is stipulated by the testing guidelines….. our goals are just to beat the tests. What you have to do is to analyze the tests and summarize a set of skills for how to take the test, and then prepare students with these skills. So you can see teaching test-taking skills becomes very important, if you want your students do well in the tests (Interview on April 1, 2010).

Jenny was a novice teacher in Old Elmwood which had a comparatively stable Han student population. She was teaching two Chinese poems on the day when I observed her class. She explained the poems in a very vivid way that her students easily understood. Since the poems were about love, she engaged her adolescent students by talking about their love for their parents, siblings, school, country, and even their current or future boyfriend or girlfriend. It was so natural that neither the teacher nor the students felt embarrassed to talk openly about love and sex in class, a rarity in China. I remember that the poet spoke about love and sex using a metaphor of sea and seashore (Fieldnotes on April 9, 2010). At the interview, she shared her understanding of current education in a pitiful tone,

> Our education objectives are mainly to pass all kinds of tests and exams, and so we have to teach for exams, which means we don't have time to nurture students' interests and help them achieve their potential. That is really sad, but I will not give up! (Interview on April 8, 2010)

Due to these already-existing, or newly-introduced, political and organizational mandates and policies, demography and structural dynamics in schools changed greatly. Teachers felt tensions and challenges, and their beliefs about teaching and learning as well as their expectations of different student groups were reshaped in response to these political and organizational changes. Consequently, teachers' beliefs varied in concert with the policies and organizational dynamics of the schools at which they worked. The following quantitative and qualitative data provide evidence for this variation.

Qualitative evidence for Theme 1

The realization of "Two basics" requires hard work of all related organizations, including the governments, both the provincial people's government as well as the local governments at all levels within their jurisdiction, and their relevant departments. The

Assistant Commissioner of the Urumqi Education Bureau elaborated the challenges and tensions that the Region (province) faced during the process of achieving the goal of "two basics",

> Every province has their own problems, because no matter how big the province, or how advanced, it unavoidably has some poor, backward, remote, and rural areas. The nation evaluates the province as a whole, and so it takes great effort for each province and directly-administrated municipality to pass the evaluation. The Central Government required provincial governments to realize these two goals [the "two basics" goals] and then conduct self-assessment first before the country does the evaluation. Xinjiang passed the evaluation last year. This national program is a huge effort. Every level starting from the county level has to conduct a self evaluation, then the provincial level does the same, followed by the national level. It took 13 years for Xinjiang to pass the evaluation. In September 2009, the National Evaluation Delegation came to evaluate and assess the situation, and it drew the conclusion that Xinjiang had met all the indicators (Interview on March 23, 2010).

According to the Assistant Commissioner, Xinjiang was one of the last provinces that passed the national evaluation. At present, only three of the 34 provinces in the country have not passed the evaluation. So Xinjiang was fourth or fifth from the last. During this time-and-effort demanding process, the organizations and individuals involved encountered tremendous pressure, changes, tensions, and challenges. The Assistant Commissioner talked about the changes produced by the policy,

> The biggest change in schools recently with "Two Basics" was

> that the demographics of the student population changed greatly and all of sudden, it seems. It doesn't matter anymore what parents are doing and where, whether businessmen or salesmen; no matter what province they come from, Sichuan or Henan, as long as they live in the district, as long as the kids reach the age for schooling, the schools have to accept them for free. Schools have to accept them without any condition, even if they are not the only child of the family, even though they don't have local household registration. It is their parents who broke the law, and it's not the child's fault. Therefore, any child under 15 years old must be at school, even when their parents rent a dwelling, have temporary jobs, and come from provinces other than Xinjiang. These kids have to be accepted into schools in the same district in which they live. This is the requirement. Simple as this (Interview on March 23, 2010).

With the implementation of the policy, teachers began to see changes and feel tensions in their school. Joana, a Hui math teacher at Sunflower Middle School, described the changes in her students in recent years,

> ….students at our school now are different from what we had before. Back then, our school could select students through testing, and so generally we had very smart and good students, I mean, academically. We felt it much easier to teach them, and they won lots of prizes in various competitions. Now we have to accept all students living in our district. Many parents are not working for organizations or units, that is, they don't have real jobs. Among them, there are lots of migrant workers. They come here to work seasonally, and they temporarily live in shabby dwellings. ….However, as long

> as the parents show the school three documents: a lease contact for their dwelling, their temporary household registration, and a job introduction letter, the school has to accept their kid(s) We teachers are not used to teaching these kinds of students, and we really don't know how to deal with them. I remember when they first came to my class, the whole classroom was so smelly, because they did not take showers or wash their hair. Perhaps, their parents are too busy to look after them, or their home condition doesn't allow them to have a shower. Anyway, these students have more problems. We were, maybe are, not prepared for them (Interview on April 1, 2010).

Johnson, the Director of Teaching Affairs in Double Arrow Middle School, felt tensions and contradictions brought to his school by the "Bilingual Education" policy. He believed teachers had to rethink their way of teaching to adapt to the new reality. He was especially concerned that the language ability would be a serious inhibitor to minority student learning.

> Before the change, minority parents decided whether their kids would go to Chinese school or to a school that uses their own language. This was decided first during enrollment in elementary school. Some minority parents speak very good Chinese, since they are government employees. Therefore, there might be kids who speak Chinese at home, and then they definitely have an advantage. And there are some kids who don't speak Chinese at home, and who go to schools taught in their own language. With the Bilingual Education" policy, these kids have to overcome the language barrier. They are sure to have more difficulties than the kids whose parents have had Chinese education. They have to learn Chinese and how to learn in Chinese (Interview on May 19, 2010).

David, a physics teacher in Double Arrow, talked about the changes in his beliefs and practices owing to the novice experiences after his school was merged with a minority school.

> I have different beliefs about them (minorities), because they are there, I mean the differences. I should say after our school merged with a Uygur school, I was exposed to more minority teachers and students, especially Uygur, and my beliefs about different student groups started to change, and I am not sure what exactly the changes are yet, because it happens so fast. But I would say it opens a door or an opportunity to me to get to know them. It is positive, no doubt about that (Interview on April 15, 2010).

In addition to the "Two Basics" and "Bilingual Education" policies, there were other educational reforms in progress at the same time, adding more pressures and tensions. In her interview, Lisa, an English teacher, talked about her perceptions relative to recent changes in curriculum,

> …the curriculum and textbooks we are using now require various activities. This is the first time for us to use them, and we think these mandated activities make it difficult for us teachers to meet the teaching objectives of the curriculum, but we try our best. Although we have used several different textbooks, I prefer to the series. The activities are designed to impart specific knowledge to students that they are expected to learn, and the activities are designed such that the knowledge can be imparted even if the teacher doesn't have the knowledge. However, our reality makes it impossible sometimes, given the students and resources we have (Interview on April 1, 2010).

The representative excerpts of interviews have exemplified how political and

organizational frame factors could manipulate teachers' beliefs about teaching and learning, and expectations of different student groups. When the student population changed abruptly for instance, teachers' expectations of certain groups of students had to be adjusted or reshaped based on the reality. Quantitative data triangulated with qualitative data illustrate the tensions and contradictions when teachers confronted the changes and challenges brought by the policies and mandates.

Quantitative evidence for Theme 1

Section IV of the questionnaire was designed to explore the teachers' beliefs about implementing a variety of instructional strategies to meet the needs of different student groups, that is, what's it for, and what's required. The statistical results are presented in the table below.

Table 24: Beliefs about Adopting Various Instructional Strategies to Meet Students' Needs

Item	Section IV: My implementing a variety of instructional strategies to meet the needs of different students in my classroom would:	Rank	Mean (St. D) N=265[55]	Frequency		
				Agree[56] %	Not Sure %	Disagree %
34	demand more planning time	1	4.21 (0.72)	89.5	7.5	3
36	develop a need for inservice professional development	2	4.20 (0.70)	91	6.4	2.6
33	require more teacher effort	3	4.13 (0.82)	85	9	6
35	create student interest	4	4.13 (0.65)	87.2	11.3	1.5
28	help students learn more	5	4.10 (0.67)	87.6	10.5	1.9
32	require more materials for activities	6	4.09 (0.73)	86.1	9.4	4.5
27	encourage all students to become participants	7	4.06 (0.75)	85.3	10.9	3.8
25	make (subject) a good learning experience for all	8	3.98 (0.82)	79.3	14.7	6
29	demand smaller class sizes	9	3.97 (0.86)	76.3	17.3	6.4
26	increase each student's success in the class	10	3.67 (0.91)	64.3	24.8	10.9
24	require extended instructional time with students	11	3.59 (1.12)	62.8	12	25.2
30	be difficult because of behavior problems	12	3.53 (0.91)	59.8	24.4	15.8
31	make good record in my yearly evaluation	13	3.34 (0.85)	41.4	45.5	13.2

Table 24 presents the descriptive statistics of respondents' beliefs in descending order by their mean values about their motivations or obligations to implement a variety of instructional strategies to meet the needs of different students in their classrooms. As

[55] The outlier Case 78 was eliminated.
[56] The frequency combines "totally agree" and "agree" into one category "agree", and "totally disagree" and "disagree" into "Disagree". It is applicable in all the tables with frequency.

shown in the table above, the means of the items ranged from a high of 4.21 to a low of 3.34, on a scale of 1 (totally disagree) to 5 (totally agree).

All of the thirteen items had mean values exceeding 3.00, indicating the respondents agreed to all these items. Almost 90% of the respondents agreed that implementation of a variety of instructional strategies "demands more planning time" with mean of 4.21(Item 34), and 91% believed it "would develop a need for in-service professional development" (Items 36, m = 4.20). The majority agreed that it would "require more teacher effort (Item 33, m = 4.13) and more materials for activities (Item 32, m = 4.09). Most of the respondents (above 85%) believed it could "create student interest", "help students learn more", "encourage all students to participate", and "make a good learning experience" (Items 35, 28, 27 & 25, m = 4.13, 4.10, 4.06 & 3.98 respectively). A majority (76%) also believed implementation of a variety of instructional strategies would demand smaller class sizes (Item 29, m =3.97), and a smaller majority (60%) indicated it would be difficult because of behavior problems (Item 30, m = 3.53). It is notable that fewer than half of the respondents (41%) agreed that implementation would "make good record" in their yearly evaluation, and 46% were not sure (Item 31).

The results from this section indicated that the teachers' self-reported beliefs were influenced by political and organizational frame factors. They felt the tensions and contradictions when they negotiated how they could deliver the teaching activities. The strong political environment and the organizational reality made them believe that they must help the new student population, and that they needed to be more prepared for doing so such as more planning time and more professional development. Section V of the questionnaire investigates teachers impressions of the degree to which various community members thought teachers should adopt instructional strategies to meet needs of different students. That is, where these teachers' pressure came from. Table 25 summarizes the statistical results of the section.

Table 25: Beliefs about Who Think Teachers Should Meet Needs of All Students

Item	Section V: The following people think I should implement a variety of instructional strategies to meet the needs of different students in my classroom.	Rank	Mean (St. D) N=265[57]	Frequency		
				Agree[58] %	Not Sure %	Dis-agree %
41	Teachers with similar experiences	1	3.87 (0.69)	74.8	22.2	3.0
40	Experienced teachers	2	3.65 (0.78)	59.8	33.5	6.7
44	Ordinary parents	3	3.64 (0.70)	58.6	37.2	4.2
38	Students in poverty	4	3.63 (0.83)	60.2	31.6	8.2
39	Minority students	5	3.60 (0.85)	60.2	29.3	10.5
42	Parents from low SES	6	3.49 (0.77)	41.8	44.7	7.5
43	Parents of minority students	7	3.46 (0.81)	48.5	40.2	11.3
37	School administrators (principal, superintendent, evaluators, etc)	8	3.41 (1.03)	47.4	33.8	18.8
45	Policy makers and reformers	9	3.28 (0.94)	41.4	41.0	17.6

Table 25 presents the descriptive statistics of respondents' beliefs in descending order by their mean values about who, they believed, thought they should implement a variety of instructional strategies to meet the needs of different students in their classroom. Assuming that teachers feel multiple instructional strategy implementation pressure from these stakeholders in proportion to the means in the table, the fact that all answers tended toward "agree" does not refute Theme 1: Teachers' beliefs seemed to correlate with tensions and contradictions present in a strong political environment. The following interprets respondents' increasing degree of agreement as an increased amount of pressure on the teacher to implement a variety of instructional strategies.

As can be seen from the table, the average of the belief items ranged from a high of 3.87 to a low of 3.28, on a scale of 1 (totally disagree) to 5 (totally agree). Each of the nine items had a mean value exceeding 3.00, indicating that the respondents thought that the pressure came from each of these nine stakeholders. Interestingly, the largest percentage of the respondents (74.8%) felt the most pressure from peers with similar experiences; note the highest mean of 3.87 (Item 41). Almost 60% of the respondents reported major pressure came from their experienced peers as well with a mean of 3.65

[57] The outlier Case 78 was eliminated.
[58] The frequency combines "totally agree" and "agree" into one category "agree", and "totally disagree" and "disagree" into "Disagree". It is applicable in all the tables with frequency.

(Item 40). This could be due to competition among teachers based on results of mandated provincial or national tests which might influence professional promotion and income. In addition, they claimed that ordinary parents expected them to implement various instructional strategies to meet students' needs (Items 44).

However, over 37% of the respondents were not sure about pressure from ordinary parents. The respondents believed both students in poverty and minority students needed them to implement various instructional methods (Items 38 and 39, with means of 3.63 and 3.60 respectively). Compared to these two items, the number of respondents who felt pressure from low SES parents and from parents of minority students (m= 3.49 and 3.46 respectively), and the number of respondents who felt unsure was about the same: 40-50% (Items 42 & 43). The number of respondents who felt pressure from administrators and policy makers (about 47%) was about the same as the ones who were not sure (about 40%, Items 37 & 45). Nevertheless, 18% disagreed they had pressure either from the administrators or from policy makers.

The new policies and other educational reforms had created tensions and challenges for people in the system – teachers as well as students. On the one hand, it created a new opportunity for teachers to learn how to teach unfamiliar types of students. On the other hand, it also created novel experiences for minority students and students from low SES – Han and Non-Han who had not had much schooling due to an unsettled family life. What is more, functionally and structurally changing organizations influenced what teachers believed they should do and could do.

Theme 2: Teachers' beliefs significantly differed among schools with different organizational frame factors

Although the political frame factors at the macro level – the Teaching Guidelines, the national college entrance examination, and the standardized tests for different grades – were seen to heavily influence daily instructional practices, teachers' beliefs and

approaches also varied with organizational frame factors in the schools in which they taught. The aforementioned excerpts have exemplified this variation. Lisa was teaching in a school with a lot of students from low SES who tended to have weak knowledge foundations, and so she believed that drilling the basics was the best way to meet the needs of those students. Jenny, on the contrary, tried to teach her mainstream students more creatively, despite the pressure of standardized tests. David, in a school experiencing dramatic demographic changes, like his fellow teachers in that school, held quite positive attitudes towards, and high expectations of, his minority students. However, quite different teacher beliefs and instructional practices can exist in different micro-organizational environments, and sometimes these differences can be statistically significant.

Quantitative evidence for Theme 2

A one-way MANOVA was conducted to address the research question if there were statistically significant mean differences in teachers' beliefs among school category about teaching and learning (Factors 1, 2, 3 and 4 in Section II), and about different student groups (Factors 1 and 2 in Section VII). Prior to the statistical analysis, the normality of the data was tested, and one outlier was removed. Further, Principal Component Analysis[59] was conducted on variables/items in Section II and Section VII of the questionnaire. As a result, two factors were retained in Section II: Factor 1 – "*Deficit pedagogical beliefs*" and Factor 3 – "*Beliefs about traditional/rote learning*". Two factors were retained in Section VII: Factor 1 – "*Beliefs about Students with different personal/cultural backgrounds*" and Factor 2 – "*Deficit beliefs about students*". Two sets of MANOVA test were then conducted on these four factors (Sections II, two factors; Section VII, two factors) respectively, instead of all 27 items in these two sections.

[59] See Section "Data Analysis".

The results revealed there were significant differences among the three schools on these dependent variables. The Box Test was evaluated, and the value was significant ($p < .004$), indicating the assumption of equal variances was violated, hence Pillar's Trace was used. For Factors 1 in Section II, Pillar's Trace = .108, F (2, 262) = 10.63, $p < .001$, multivariate $\eta^2 = .075$. For Factors 3 in Section II, Pillar's Trace = .108, F (2, 262) = 7.18, $p < .001$, multivariate $\eta^2 = .052$. For Factors 1 in Section VII, Pillar's Trace = .094, F (2, 262) = 9.75, $p < .001$, multivariate $\eta^2 = .069$. For Factor 2 in Section VII, Pillar's Trace = .094, F (2, 262) = 9.86, $p < .001$, multivariate $\eta^2 = .070$. Table 26 presents means and standard deviations for four factors in Section II and Section VII by school category.

Table 26: Mean and Standard Deviations by School on Four Factors

School ID	**Dependent Variable Mean (Standard Deviation) n=265**			
	Section II		**Section VII**	
	Factor 1	**Factor 3**	**Factor 1**	**Factor 2**
School 1 (n=87)	2.89 (0.90)	4.15 (0.54)	2.38 (1.02)	3.18 (1.10)
School 2 (n= 92)	2.85 (0.88)	3.98 (0.66)	2.43 (1.14)	2.99 (1.15)
School 3 (n= 86)	2.36 (0.91)	3.78 (0.75)	1.80 (0.96)	2.39 (1.39)

Because the equal variances assumptions were not met, Dunnett T3 post hoc test was chosen to determine where the differences were, i.e., which school was significantly different from the others. The post hoc test results are summarized in the table below:

Table 27: Post Hoc Results for Four Factors by School Category

Dependent Variable		(I) School_ ID	(J) School_ ID	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Section II F1	Dunnett T3	1	2	.0372	.12175	.986	-.2562	.3306
			3	.5265*	.12551	.000	.2239	.8291
		2	1	-.0372	.12175	.986	-.3306	.2562
			3	.4893*	.13172	.001	.1718	.8068
		3	1	-.5265*	.12551	.000	-.8291	-.2239
			2	-.4893*	.13172	.001	-.8068	-.1718
Section II F3	Dunnett T3	1	2	.1825	.09020	.128	-.0349	.3998
			3	.3780*	.09938	.001	.1382	.6178
		2	1	-.1825	.09020	.128	-.3998	.0349
			3	.1956	.10634	.189	-.0608	.4519
		3	1	-.3780*	.09938	.001	-.6178	-.1382
			2	-.1956	.10634	.189	-.4519	.0608
Section VII F1	Dunnett T3	1	2	-.0494	.16149	.986	-.4385	.3398
			3	.5783*	.15030	.001	.2159	.9406
		2	1	.0494	.16149	.986	-.3398	.4385
			3	.6276*	.15775	.000	.2474	1.0078
		3	1	-.5783*	.15030	.001	-.9406	-.2159
			2	-.6276*	.15775	.000	-1.0078	-.2474
Section VII F2	Dunnett T3	1	2	.1909	.16836	.591	-.2148	.5967
			3	.7886*	.19086	.000	.3283	1.2489
		2	1	-.1909	.16836	.591	-.5967	.2148
			3	.5977*	.19231	.007	.1339	1.0614
		3	1	-.7886*	.19086	.000	-1.2489	-.3283
			2	-.5977*	.19231	.007	-1.0614	-.1339

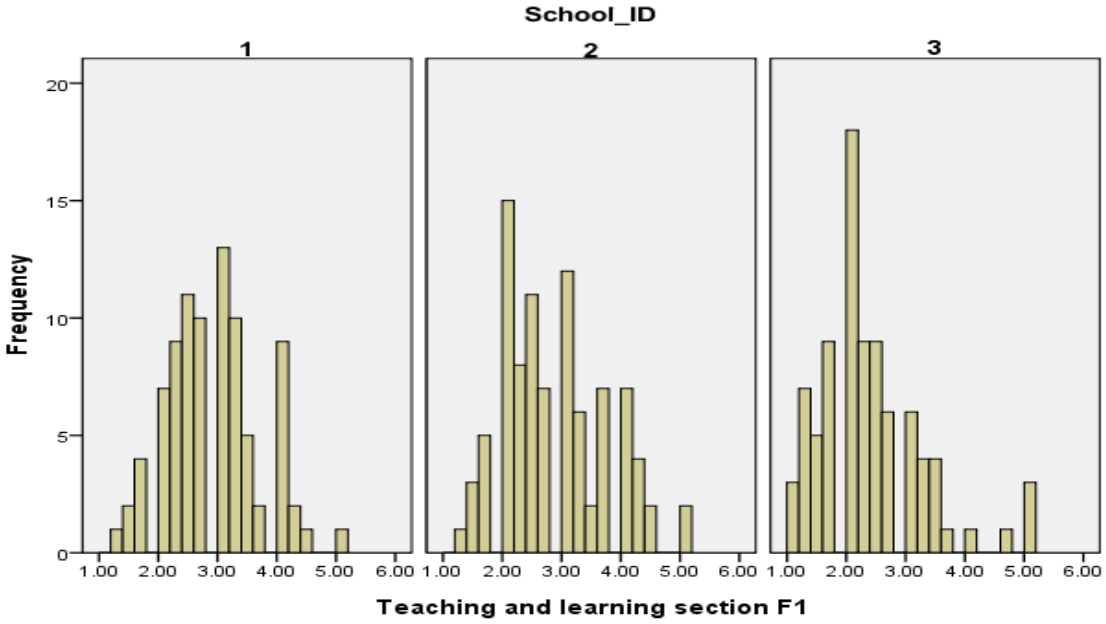
Note: a. Exact statistic
b. Computed using alpha = .05
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Design: Intercept + School_ID

For section II, the post hoc test revealed that School 3 significantly differs from School 1 for both Factor 1 "*Deficit pedagogical beliefs*" and Factor 3 – "*Beliefs about traditional/rote learning*", but only differs from School 2 for Factor 1*("Deficit pedagogical beliefs*"). There were no significant differences between these two schools on Factor 3 ("*Beliefs about traditional/rote learning*"). This result indicates that teachers in School 3 and School 1 held different pedagogical beliefs and different beliefs about traditional way of learning; while teachers in School 3 and School 2 held different pedagogical beliefs, but they shared similar beliefs about traditional way of learning. For Section VII, School 3 was significantly different from School 1 and School 2 for both

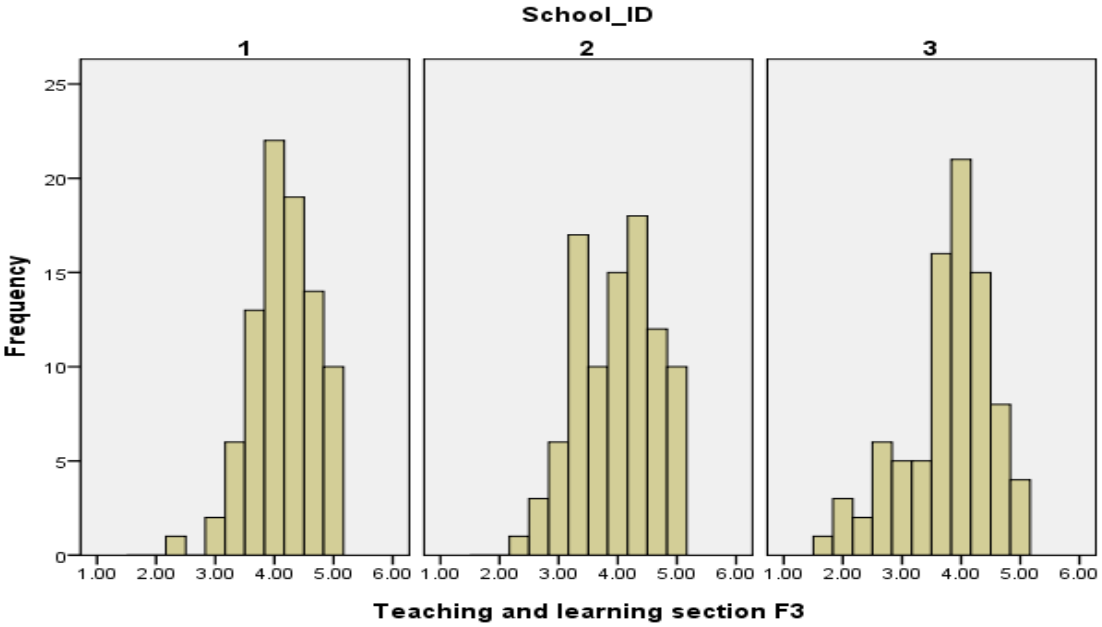
factors (F1:*"Beliefs about Students with different personal/cultural backgrounds"* and F2: "*Deficit beliefs about students*"). This result indicates that teachers in School 3 held different expectations of students with personal backgrounds different from the majority, more likely with deficits. The mean value in Table 27 above showed that teachers in School 3 more likely held higher expectations about student groups with deficits such as low SES or Chinese language learners, than the teachers in School 1 and School 2.

From the two histograms below, it can be clearly seen that for Section II of the questionnaire – Teaching and Learning Section, School 3 significantly differs from School 1 and School 2 in Factor 1, but it only differs from School 2 in Factor 3.

Histogram of Factor 1 in Section II ("Deficit pedagogical beliefs")

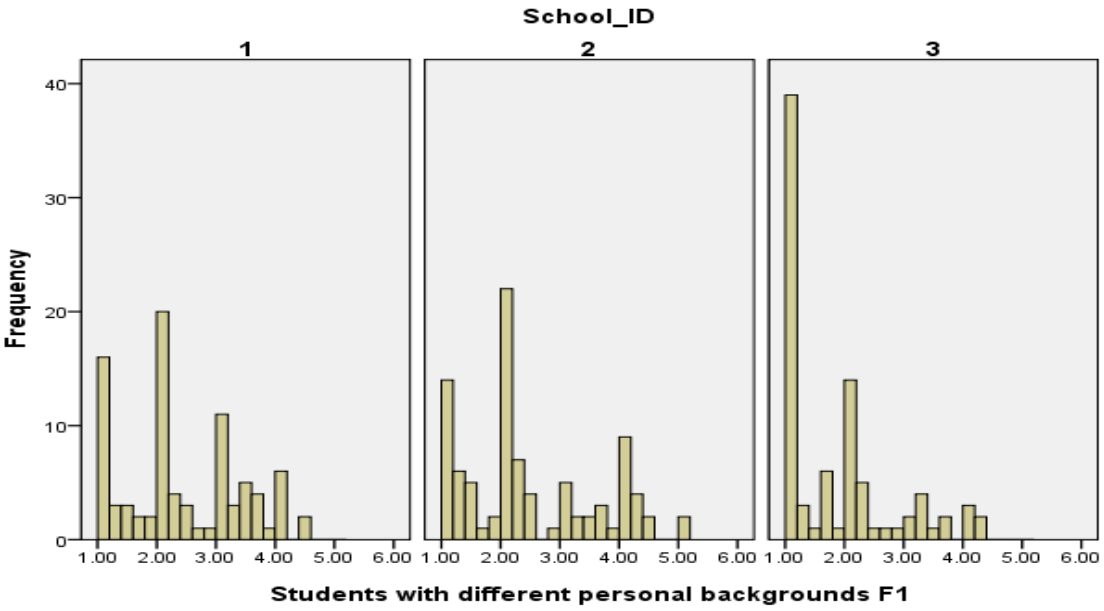


Histogram of Factor 3 in Section II: ("Beliefs about traditional/rote learning")

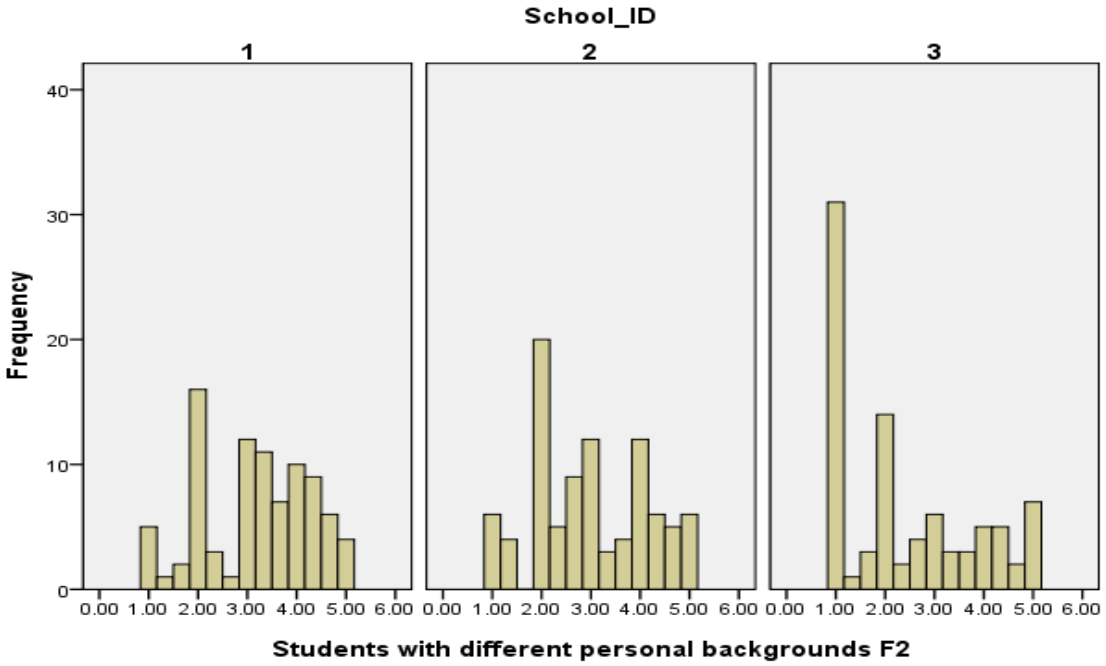


The following two histograms clearly show that School 3 was significantly different from School 1 and School 2 in both Factor 1 and Factor 2 in Section VII of the questionnaire investigating teachers' beliefs about different student groups.

Histogram of Factor 1 in Section VII: ("Beliefs about Students with different personal / cultural backgrounds")



Histogram of Factor 2 in Section VII ("Deficit beliefs about students")



In sum, the one-way MANOVA tests revealed that there were significant differences among the three schools. The post hoc tests discovered that School 3 significantly differs from the other two schools. The differences between School 2 and School 3 on all four dependant variables were significant, while the differences between School 1 and School 3 were significant only on three dependant variables. The results indicate that more respondents in School 3 disagreed with pedagogical methods such as how to group students and the traditional way of learning such as repetition. More of them also disagreed that they held low expectations about students with deficits such as students from low SES and students with poor performances including bad-behaviors and low achievements.

Qualitative evidence for Theme 2

The most important change for Double Arrow Middle School (School 3) occurred in 2004 when the school was merged with the junior high department of a Uygur middle school whose senior department was merged into a local senior middle school. After merging, half of the sixteen eighth grade classes consisted entirely of Uygur students, and

the other eight contained primarily Han students, but with some other ethnicities as well.

Harry, a Tartar, taught biology. I noticed his Chinese was not fluent when I observed his class. He was worried about some of his students whose Chinese was poor, and he believed language was a barrier to learning for these students. He described the process of implementation of the "Bilingual Education" policy in his school,

> The Urumqi Education Bureau arranged for teachers to participate in a-year long bilingual training in the College of Education. But it was part-time. We taught in the mornings and went to the College to study for two hours in the afternoons. However, there were many challenges that both teachers and students were facing in terms of Chinese language…. A lot of students are still learning Chinese at the same time they are studying other subjects such as mathematics. Take my class for example, 30% of the students learned Chinese in the elementary schools, but 70% of them went to Uygur elementary schools where they did not use Chinese. In 2005, they started to receive bilingual education, and it is not long. I can say for almost half of them that their Chinese basics are poor, and it influences their learning (Interview on April 15, 2010).

David taught physics in Double Arrow Middle School (School 3). He was a Hui, but moved from inland China to Xinjiang after he graduated from college. He was selected for open-lesson (demonstration lesson for all teachers) in the school. He was expected to help students learn through hands-on experiences and was leading an after-school program, the "Model Airplane Group". I went to observe his open lesson, and there were about 20 teachers squeezed into the back of his classroom (Fieldnotes on April 15, 2010). When he elaborated his beliefs about different student groups, he talked about his beliefs related to the recent changes in his school,

> I have different beliefs about them, because it is there, I mean the difference. I should say after our school merged with a Uygur school, I was more exposed to minority teachers and students, especially Uygur, and my beliefs about different student groups started to change. and I am not sure what exactly the changes are yet, because it happened so fast, but I noticed ….(Interview on April 15, 2010)

The organizational changes caused by policies influences the dynamics of School 3/Double Arrow Middle School, and hence teachers' beliefs. Individuals including teachers and students were experiencing tensions and challenges, no matter what their personal backgrounds were. Eventually, these organization factors framed and influenced teachers' beliefs.

Summary of the Chapter

This chapter illustrates two major themes in the educators' general beliefs about teaching and learning, and specific expectations of different student groups. It provides quantitative and qualitative evidence that these beliefs seemed to correlate with or manipulated by political and organizational frame factors. Two major themes include: 1) Teachers' self-reported beliefs seem to correlate with tensions and contradictions in a strong political environment; 2) Teachers' beliefs significantly differed between schools with different organizational frame factors.

Politically and organizationally, School 3/Double Arrow Middle School was different from the other two schools in several aspects. First, it adopted a different policy – "Bilingual Education" at the time. Second, it had a unique demographic composition of students with larger numbers of bilingual learners, resulting in unique schooling dynamics. Third, its organizational structure, hence its functions, were different from one of the other two schools. The qualitative and quantitative data collected in this study shows that teachers working in School 3/Double Arrow Middle School held different

beliefs about teaching and learning, and also held different expectations of student groups from the teachers working in School 1/Sunflower Middle School and School 2/Old Elmwood Middle School. And some differences were statistically significant. Quantitative results revealed that more teachers in School 3 did not believe in traditional pedagogical strategies, and that they held higher expectations of their students with various personal backgrounds, more likely with deficits. These beliefs might be related to the special political and organizational environment of School 3 as compared with Schools 1 and 2.

The next chapter presents findings from both the quantitative and qualitative datasets pertaining to the relationship between the teachers' self-reported beliefs – culturally shaped, personally mediated, and politically/organizationally influenced – and their associated instructional practices. It discusses the mean differences in teachers' self-evaluations of their implementation of various pedagogical strategies to meet the needs of different students. It provides evidence from qualitative data including interviews and artifacts, and it relates, compares and triangulates the quantitative and qualitative findings to one another.

Chapter Eight – Teachers' Beliefs and the Associated Instructional Practices

The data of the study was analyzed separately related to cultural, personal, political and organizational factors, and various beliefs of the Chinese teachers in the sample were investigated and identified. However, looking separately at the factors that contributed to various teachers' beliefs is valuable only when relating them to one another for their comprehensive impact on teachers' practices. The instructional practices where the beliefs intersect with instructional strategies become a real key to understanding the relationship between beliefs and practices. Hence, this chapter integrates the teachers' beliefs and their associated instructional practices to explore how different dimensions came together to actually influence the practices in teaching different students in different cultures.

Hall (2002) asserts schools are places where people come together from different social worlds with various values and beliefs to construct and enact the rituals and norms of schooling in everyday practice. These cultural values, personal beliefs, political and organizational mandates and rituals entail daily educational processes including intentional pedagogical practices, and direct teaching and learning, in classrooms. As Chou (2008) found in his study, teacher participants' beliefs and their use of specific reading approaches were closely related in their high consistency. On the one hand, teachers come to the schooling system with existing personal frame factors – mental models (beliefs and ideologies about teaching and learning) that have been shaped socially, culturally, politically and historically in their individual circumstances. These beliefs and ideologies play a significant role in teachers' decision-making in their daily instructional practices, which dialectically reshape – reinforce or refute, these beliefs and expectations. On the other hand, the schooling system contains its own cultural, political and organizational frame factors, which sometimes suppress personal frame factors, and produce or impact on instructional practices, either positively or negatively.

Teachers in this study claimed to hold strong beliefs about effort and diligence in students' learning, and so their expectations about student groups were not heavily influenced by students' family backgrounds or their innate abilities, but rather determined by students' academic performance. They paid more attention to students' test scores than to their ethnicity or family, social and economic situations. These beliefs and expectations were quite influential and decisive in determining teachers' daily instructional practices. The teachers tended to categorize their students based on academic performances and teach them accordingly.

Both quantitative and qualitative instruments were designed to investigate the relationship between teachers' beliefs/expectations and their associated instructional practices. The results of analysis of these two datasets revealed two major themes: 1) Teacher participants believed it was quite valuable but very challenging to implement various pedagogical strategies to meet the needs of different students, given limited educational resources; 2) Various daily pedagogical strategies were designed and applied primarily based on students' academic performance rather than other factors such as family background.

Theme 1: Valuable but Challenging: Quantitative Evidence

The first section of the questionnaire was designed for teacher respondents to evaluate their own practices to implement a variety of instructional strategies to meet the needs of different students in their classroom in the year when the study was conducted. Four adjectives (one for each item) were provided for them to describe their practices: Good, wise, valuable and challenging. The results are summarized in the table below.

Table 28: Self-evaluation of Instructional Practices in General

Item	Section I: My implementing a variety of instructional strategies to meet the needs of different students in my classroom this school year is: N= 265				
	Mean (St.D)	Rank	Agree %	Not Sure %	Disagree %
3. "valuable"	4.11 (0.70)	1	78.9	19.6	1.5
4. "challenging"	4.06 (0.78)	2	80.8	17.5	1.7
2. "wise"	4.05 (0.70)	3	84.4	15.6	0
1. "good"	3.98 (0.69)	4	74.3	24.9	0.8

Table 28 presents, in descending order by their mean values, the descriptive statistics of respondents' self-evaluation of their practices with regard to implementation of various pedagogical strategies to meet the needs of different student groups. The mean values ranged from a high of 4.11 to a low of 3.98, on a scale of 1 (totally disagree) to 5 (totally agree). The responses indicated only one type of high value. All of the four items had mean values around 4.00 (Item 1, m = 3.98), indicating respondents generally agreed with the use of the four adjectives to describe their current instructional practices.

The majority of the participants (78.9%) believed that their implementation was valuable (highest mean score of 4.11 in Item 3). However, they also described implementation was very challenging but very wise (mean scores of 4.06 and 4.05 respectively on Items 4 & 2. Most of the respondents (84%) agreed that their implementation was wise (Item 2). It is worth noticing that no respondent disagreed, though about 15% of respondents were not sure. Comparatively, fewer respondents (74%) reported that their implementation was good (mean score of 3.98 on Item 1, which was the lowest). The data in this section revealed that most of the participants believed it was very valuable, challenging and wise to implement various pedagogical strategies to meet the needs of different student groups, and they thought their implementation was good.

The four items in Section III was also designed for respondents to conduct evaluations of their instructional practices, focusing on reflecting on their practices. The results are presented in the table below.

Table 29: Self-evaluation of Instructional Practices in Specific

#	Items **Section III. Indicate the likelihood of each of the following statements by circling the appropriate number.**	**Mean (St. D) N=265**	**Rank**	**Frequency %**		
				Agree	**Not Sure**	**Dis-agree**
20	I have implemented a variety of instructional strategies this school year to meet the needs of different students.	4.11 (0.62)	1	88.3	9.8	1.9
21	Most people who are important to me think I have implemented a variety of instructional strategies to meet the needs of diverse students	3.65 (0.72)	2	56.7	41.0	2.3
22	It will be mostly up to me whether or not I implement a variety of instructional strategies to meet the needs of different learners during this school year.	3.58 (0.89)	3	62.0	23.7	14.3
23	If I implemented a variety of instructional strategies into my classroom to meet the needs of different learners during this school year, I would meet the requirement of the curriculum reform.	3.43 (0.56)	4	50.0	33.1	16.9

Table 29 above presents the descriptive statistics of respondents' assessments of their practices in descending order by their mean values. The respondents were asked to reflect on whether they thought, or people important to them thought, they had implemented various instructional methods to meet different students' needs, and also what was the reason for, or purpose of, conducting this practice. The mean values ranged from a high of 4.11 to a low of 3.43, on a scale of 1 (totally disagree) to 5 (totally agree). The responses indicated only one type of high values. All four items had mean values exceeding 3.00, indicating most of the respondents agreed with these statements.

The majority (88.3%) thought they had carried out this practice in their teaching (Item 20). However, only a little over half of the respondents (56. 8%) believed that people who were important to them thought they had adopted various instructional strategies to meet students' needs, and about 41% were not sure what these people thought about their practices (Item 21). About 62% believed that it was up to them to decide whether or not to implement this practice (Item 22). Only half agreed that it was required by curriculum reform for them to implement a variety of instructional strategies this school year to meet the needs of different students, but 33.1% were not sure, and 16.9% disagreed (Item 23). Data in the section revealed that most of the respondents believed they had adopted various instructional strategies based on students' needs, and

comparatively, more of them disagreed that their instructional practice was for the purpose of meeting the requirements of curriculum reforms.

Section VI was designed to explore what factors that teacher respondents believed would influence their decisions to adopt a variety of instructional strategies to meet the needs of different students in their classroom. The results are presented in the table below.

Table 30: Summary of Influential Factors for Teachers' Instructional Decisions

#	Items **Section VI. Indicate the likelihood that the following factors would encourage you to implement a variety of instructional strategies to meet different students in your classroom.**	**Mean (St. D) N=265**	**Rank**	**Frequency %**		
				Agree	**Not Sure**	**Dis-agree**
48	Parental support	4.19 (0.68)	1	91.7	6.4	1.9
50	Administrative support	4.17 (0.80)	2	86.5	12.4	1.1
49	Collegial support	4.15 (0.70)	3	87.6	10.1	2.3
46	Having available resources (funding, curriculum materials, supplies & equipment, etc.)	4.00 (0.83)	4	82.0	10.9	7.1
52	Beliefs that every student can learn	3.96 (0.89)	5	74.8	18.8	6.4
51	High expectations about students	3.92 (0.83)	6	71.1	24.8	4.1
53	Cooperative students (few behavioral problems)	3.88 (0.88)	7	74.4	17.7	7.9
47	professional development opportunities on different students & instructional strategies	3.71 (0.92)	8	66.2	24.4	9.4
54	Mandated requirement for minimum student achievement	3.55 (0.98)	9	59.0	25.2	15.8

Table 30 presents, in descending order by their mean values, descriptive statistics of respondents' beliefs about factors that would influence their decisions on instructional practices to meet the needs of different students. The mean values in this section ranged from a high of 4.19 to a low of 3.55, on a scale of 1 (totally disagree) to 5 (totally agree). The responses indicated only one type of high value. All of the nine items had means exceeding a value of 3.50, indicating respondents believed all factors in these nine items positively influenced their instructional decisions.

The majority of the participants reported that support from parents, administrators and colleagues (mean scores of 4.19, 4.17 and 4.15, respectively) and available resources (mean = 4.00) were very important factors in their decision-making (Items 48, 50, 49 & 46). 92% of the respondents agreed that parents' support was important factor to encourage to adopt instructional strategies to meet students' needs (m = 4.19). The respondents also agreed that the beliefs "all student can learn" (Item 52), "high

expectations about students" (Item 51) and "cooperative students" (Item 53) played a significant role in their decision-making (m = 3.96, 3.92, 3.88, respectively). Although 66.2% of the respondents agreed that it was important to have "professional development opportunities on different students & instructional strategies", 24.4% of them were not sure about this (Item 47). Interestingly, only a little over half of participants (M=3.55) agreed that "mandated requirements for minimum student achievement" would encourage them to do so [Item 54, one hundred fifty seven teachers (59%) agreed, while sixty seven (25.2%) were not sure, and forty two (15.8%) disagreed]. This result echoed the one in previous section that almost half of the respondents were either not sure, or disagreed with, the statement that the purpose of implementing various instructional strategies to meet students' needs was to meet the requirement of curriculum reforms.

The quantitative data provided evidence that these teachers believed that it was valuable but very challenging to adopt various pedagogical strategies to meet the needs of different students in their daily teaching. It also revealed important factors that would encourage teachers to implement various instructional strategies in order to meet different students' needs. The next section utilizes qualitative data to illustrate in detail the instructional strategies these teachers had adopted in their classroom to accomplish the goal of teaching for every kid's needs.

Theme 2: Various Instructional Strategies determined by What Teachers Believed: Qualitative Evidence

As the findings in Chapter Five have revealed, the teachers in this study had strong beliefs about diligence in students' learning. They also believed that knowledge was hierarchical and hence, it should be mastered from the basics and step by step. Accordingly, these teachers tended to categorize their students based on the academic performance, and they most likely taught using traditional Chinese pedagogical methods such as repetition or rote learning. Woods, the principal of Sunflowers/School 1, was one

of the interviewees who talked about his awareness of the influence of teachers' beliefs on their teaching activities. He showed his deep concern that teachers' personal frame factors shaped what they believed, and resultantly that their beliefs would positively and negatively influence what and how they taught in their classrooms.

> The teachers' job is to impart knowledge as well as some basic social beliefs, moralities etc, but certainly not religions. However, unconsciously, teachers' religious beliefs might influence how they teach and how they interact with students. For instance, Han teachers' individual personality, their religions, their worldviews, and their attitudes, which might be different from the other ethnic groups, will influence their teaching activities. Whenever students' behaviors do not align with what they believe or what they think is right according to their values, they will try to correct or change students in their teaching activities (Interview on March 26, 2010).

In their interviews, the teachers elaborated the importance of teaching based on the need to help students learn better, and depicted what they did in their classroom to achieve this goal. Representative coded excerpts are used to exemplify what these teachers' instructional practices looked like when they tried to meet the needs of different students through adopting various pedagogical strategies.

Teachers' beliefs about diligence and associated instructional strategies

The teachers strongly believed that diligence would make a difference in students' learning, and they paid great attention to students' academic performance. The core of their teaching was how to help students learn better by urging them to study harder, and it was a common practice for teachers to divide students based on their test scores, and their instructional strategies were designed accordingly. That is, the better the performance, the more challenging the content and methods, and higher expectations; the worse the

performance, the easier content and lower expectations. As Joana, a math teacher, said, "…for good students, the objective of this lesson is to nurture students' mathematical thinking. For the slow kids, I only require them to remember the basics such as formulas" (Interview on April 1, 2010).

The following excerpts further illustrate the teacher participants' instructional practices. Pearl, a Mongolian, taught English in Old Elmwood/School 2. She was also the Director of Teaching Affairs at the school. When I asked her about her opinions on differentiated instruction to meet the different needs of students, she elaborated on this issue quite frankly,

> Some deep and high knowledge is only for good students. In other words, I, and other teachers, teach challenging content to good students…. Some weak students, after they build up a basic foundation with more effort, will be able to accept or learn challenging content….so we do have different requirements for them. We have high expectations of good students…I have some knowledge about different groups of students. No doubt, I adopt different strategies when I deal with them (Interview on April 7, 2010).

Note that she did not describe instructional strategies by students' background – linguistic, ethnical and financial. Johnson was a biology teacher, and also the Director of Teaching Affairs of Double Arrow/School 3. One of his jobs as the director was to select experienced teachers to offer open-lessons for the whole school. He described what his teaching practice looked like,

> To well-performing students, I might adopt some different teaching methods, and I am stricter with them, and have higher standards, and I hope they can be better. To those who lack self-discipline and do poorly in tests, I just require them to

> behave themselves in class first. Once they behave themselves, then I hope they can achieve some effective learning. I keep my eyes on them more, and I spend more time helping them after class with homework, experiment reports, diction, etc. As for students from different family backgrounds, I treat them all the same, no difference. … At the beginning of every lesson, I will prepare some basic questions to review what we learned and to check the weak students. Then, I will give difficult questions to good students (Interview on May 19, 2010).

Johnson strongly believed that learning habits and discipline were very important for students' learning. He said several times during the interview that the first thing first for learning was to instill good learning habits in students. Lisa taught English in School 1/Sunflower Middle School, and she described similar practices in her daily teaching. It is notable that she also categorized her students based on their performances.

> I adopt different methods for students with different performance, and have nothing to do with race or other issues. If the question is simple, let weak students answer to help them build up self-confidence. For students with high scores and strong ability, I will give them hard questions…. Basically, I divide students into three groups: excellent students with strong self-study ability and with very good learning habits; mediocre students (majority); and poorly-performed students. I take this into consideration when I arrange the seats. I often arrange for these excellent students to sit beside the ones who are interested in learning but don't know how yet. Let these excellent students influence them (Interview on April 1, 2010)

Johnny, a math teacher in School 2/Old Elmwood Middle School, talked about his

practice and the challenges he was facing in trying to meet the needs of different students. Once again, “different students” refers to “students with different scores”.

> I hold different beliefs and expectations about students, …..
> I think students with good performance will have a bright and promising future in contemporary Chinese society. Therefore, we often set these students as good examples for other students to learn from, and to follow. We have different requirements for poorly-performing students. For them, we just ask them to make progress bit by bit. For good students, we set much higher bars, and we help them realize the goals we set… I used to think I should teach to meet individual needs of students. But now I realize that it is very difficult, given what is available, say with our limited educational resources. I try to teach majorities, pay attention to common mistakes, and spend most of my time on the whole class instead of individuals (Interview on April 8, 2010).

David, a physics teacher in School 3/Double Arrow Middle School, was different from the majority of the teachers in the study, because he held strong beliefs about intelligence and believed that students with various learning abilities should be taught differently. He made his claim very honestly,

> Anyhow, I divide students into three categories: one is genius; one is weak and need help; the third category is the majority. Human beings’ IQs are definitely different, though we will not say this in front of students. The difference exists! Some students are very quick to accept knowledge; while some students are slow to accept knowledge, but once they get it, they get it solid….
> in class, I teach everybody the same, and I definitely don’t have

> time to look after the genius. I use the time after class to make this up. I spend time during the break, after class, and in the self-study period helping these genius students. Most of the time, one-to-one, face-to-face. Sometimes, I will help a group of students in self-study periods. … I will talk to the weak students individually in self-study periods, because generally these kids lack self-confidence, and have low self-efficacy. They will not come up to me for help by themselves (Interview on April 15, 2010).

Beth, a Uygur female, taught math in Double Arrow/School 3. She described the instructional strategies she adopted while teaching math,

> I often ask the good students what they think about the problem, because I want them to show to the poor student where to start to solve the problem, and what methods they use. The most important thing to do in math is to find the methods. Once the good students share their methods, I will ask the ordinary students to solve the problem step by step. …. in my teaching practices, if I think they can solve difficult problems, I will design some difficult ones for them. If some of them can only solve easy ones, I will take this into consideration when preparing lessons. … Some problems have many steps, but are comparatively easy. In this case, you can ask ordinary students who are interested in math in your class to get involved in solving the problems…in one period meeting the needs of more than 60 students is very difficult. We just try to look after the needs of the majority (Interview on April 15, 2010).

Beth was not alone in terms of challenges faced when trying to adopt various instructional methods to meet students' needs. All the teacher participants elaborated their

instructional strategies only bearing students' performances in mind. The next section utilizes representative interview excerpts to demonstrate the challenges these teachers encountered and how they negotiated in order to help the majority of their students, if not all, learn as much as possible.

Challenges to implementing various instructional strategies

Class size in Chinese schools tends to be big, and it is very common to see one class with 50-60 students (See "Site Selection" in Chapter IV: Methodology). This reality creates more challenges for teachers in adopting various instructional strategies within a 40-minute period to meet the needs of different students. The school system where the study was conducted had its own complexity due to some special policies such as "bilingual education", which brought more difficulties and challenges for teaching. Lucy was a researcher in the Curriculum and Instruction Research Center of the city. She advocated that teachers should teach based on students' needs, but she also warned of difficulties in doing this,

> …across how many levels of students, should and can teachers design how many activities to meet the needs of different students? That's very important. You have to make choices or decisions on how and what you teach. When some students fail to understand some deep questions, you should ask them shallow questions with some encouragement and compliments…The current problem is that teachers don't know how to deal with this issue, how to teach different students simultaneously. For most of our teachers, it is quite difficult to do, because time is limited, and there are too many students (Interview on April 7, 2010).

Teacher interviewees also shared the challenges and frustrations that they often encountered when they tried to adopt various pedagogical methods to meet students'

different needs. Johnny, a math teacher, said,

> …impossible to teach all these students (almost 60 students in his class) either different content or in different ways within 40 minutes. What I can do is to make sure the poor students can follow, and the good students have enough to learn. Most probably, the good students will find some relevant materials from which to learn more. I will help them when they have problems…. I used to think I should teach to meet individual needs of students. But now I realize that it is very difficult though I agree it is very valuable, given the limited educational resources available in schools. I try to teach the majority, pay attention to common mistakes, and spend most of my time on the whole class instead of individuals. I teach the main stream (Interview on April 8, 2010).

Hannah, a Uygur, taught Chinese in School 3/Double Arrow Middle School. She was a novice teacher, and was just hired one year ago. Except for the challenges that all novice teachers came across in their first-year teaching, Hannah particularly felt it was very challenging to meet the needs of bilingual students (All her students were Uygur, who had a bilingual education.) She gave an account of her instructional practices as below,

> …. as a novice teacher, classroom management appears to be always so challenging for me. Normally, I only pay attention to the intermediate ones, and there is no way that I can take care of all students' needs. If I had aimed at the good ones with good Chinese, the poorly-performed students would have had no way to follow and to learn. If I focused on the weak ones, the good ones would feel bored! I tried for one week, just teaching for the good

> ones, whose Chinese was really good, because I thought it might bring some pressure on the poor ones. Under the pressure, they might want to make some efforts….yet, you can imagine, it totally failed! (Interview on April 20, 2010)

When teacher interviewees spoke of the specific methods they used to help poorly-performing students, they did not seem to have many differences. The common practices were quite the same as Lilly described below,

> Keep eyes on them more closely. Watch them do homework and help them after school or during break. Or have a serious talk on the importance of learning and the hardship their parents bear to support their education. We don't have other good measures, and we cannot conduct any physical punishment. Certainly, apart from our effort, we are seeking help from parents, hoping we can work together to help these students learn (Interview on March 31, 2010).

These representative excerpts provide evidence that teacher participants agreed to implement various pedagogical strategies to meet students' different needs, that is, to teach them as who they were. However, given the limited educational resources such as large class sizes and limited time, it became very challenging, even impossible, to do so. What they could do to help low achievers or slow learners was very limited. The most common practice was then to teach majority of students within the 40-minute class, and to help their best and worst students in spare time such as after class or at weekends.

Summary of the Chapter

The analysis of both quantitative and qualitative datasets has revealed two major themes with regard to the relationship between teachers' self-reported beliefs and their associated instructional practices. First, quantitative data revealed that these teachers believed it was very valuable, but extremely challenging to implement various

pedagogical strategies to meet the needs of different student groups. Some of them thought their implementation was good, but some were not sure about their practices, due to the challenges they faced and the limited resources available to them. Generally, the respondents reported they had adopted various instructional strategies based on students' needs, but fewer of them agreed the implementation of various instructional practices was for the purpose of meeting organizational requirements such as curriculum reforms. Only a little over half of the participants agreed that a "mandated requirement for minimum student achievement" would encourage them to do so.

Second, the qualitative data provides sufficient evidence that the teachers in the study believed in "effort" and "diligence" in learning, and they tended to plan their lessons and teach based on students' academic achievement. The common instructional practices were to teach to the majority within the 40-minute period, and help high achievers and low achievers in spare time. The teachers shared similarities with regard to pedagogical strategies, including reserving challenging materials for high achievers, and requiring low achievers to focus only on the basics. The qualitative data supports the findings from the quantitative data that the teachers believed it was very challenging to try to meet different students' needs due to limited educational recourses. As a summary of this chapter, the following matrix presents a triangulated view of the two datasets – quantitative and quantitative, to delineate whether they mutually support or contradict each other.

Table 31: Matrix of Major Findings Triangulating Quantitative Results and Qualitative Themes

Quantitative		**Qualitative Themes**		**Mutually Supportive Or Contradiction**
Item: Implementing a variety of instructional strategies to meet the needs of different students is:	**N =265** **Mean**	**Valuable**	**Challenging**	
3. "valuable"	4.11	We should teach students based on their needs, and it is very important for student' learning	very difficult, though I agree it is very valuable	Mutually Supportive
4. "challenging"	4.06	tried, yet failed…. …teachers don't know how to deal with this issue, how to teach different students simultaneously….	impossible to teach all these students in one class…. very hard with limited resources…..	Mutually Supportive

The next chapter first will summarize the study: design, data collection and analysis, conceptual framework, and findings. Then, it will utilize aspects of Cultural and Historical Activity Theory (CHAT) as analytical tools to discuss implications of the four major findings revealed in the study. After the discussion, the chapter will elaborate the limitations of the study. In the end, suggestions for future work will follow.

Chapter Nine – Conclusions

Teachers as individuals maneuver and negotiate among "open" and "hidden" rules and values within political, ethnic, and cultural rituals, regulations and mandates while trying to achieve teaching and learning goals in their classrooms. The everyday routines and practices that take place in schools have a deep and lasting impact on the ways teachers think about their students and their instructional practices. Cultural values and historical sediments shape and reshape what teachers believe as individuals and as professionals. Political and organizational mandates, policies and regulations influence what and how teachers negotiate while pursuing their goals. Mental models (beliefs) as part of personal frame factors guide teachers' decision-making in their daily teaching. My study of Chinese teachers' beliefs and their associated instructional practices illuminates the complex nature of local schooling activities. Similar to U.S. teachers (Refer to Chapter III: Literature Review), the beliefs and practices of Chinese teachers are highly influenced by personal, cultural, political and organizational frame factors. The data of the study shows that the beliefs and expectations of the Chinese teachers vary, sometimes significantly, as a function of language and the number of languages spoken, knowledge mastered, with whom they grew up, and where they were teaching.

In this final chapter, I first will synthesize my analysis of the four major themes reported in the previous chapters by reviewing the methods of analysis and conclusions. The next section discusses these findings using aspects of Cultural Historical Activity Theory (CHAT) as analytical tools, making an effort to understand why the teachers in my sample believed what they believed, and to understand the relationship between their beliefs and their associated practices. The third section discusses the limitations of the study. The chapter concludes with implications of the study and suggestions for both practice and future research.

Summary of the Study

The purpose of my study was to investigate what beliefs Chinese teachers hold about teaching and learning and what expectations they have of different student groups, and further how these beliefs mediate their daily instructional practices. The study was designed to address three research questions:

1. *What are Chinese teachers' beliefs about teaching and learning?*
2. *What beliefs and expectations do Chinese teachers hold about students who are different - financially, linguistically and ethnically - from what the teacher perceives as the norm?*
3. *How are Chinese teachers' instructional practices mediated by their beliefs about and expectations of ethnically, linguistically and financially diverse students in natural daily classrooms?*

The study was motivated by an interest in searching elsewhere for unfamiliar patterns of teachers' beliefs and their associated practices, aiming to help teachers 'see' theirs by "making the familiar strange" (Stevenson & Stigler, 1992), providing information useful in surfacing and modifying teachers' mental models and opening them up to alternative mental models that might lead to different instructional practices and improved student learning. Investigating teachers' beliefs about ethnically, linguistically, and socioeconomically diverse students in Xinjiang, China, whose cultural value systems differ from those in the U.S., but which similarly has a diverse student population, provides an opportunity to see if teachers' personal beliefs and their associated practices might differ in different cultures and political systems. This might shed some lights on professional development and make a contribution to improving teachers' practices.

A triangulated mixed methods design was used for the study, a type of design in which different but complementary data was collected on the same topic (Creswell and Plano, 2007). In this study, three multicultural and multilingual middle schools in

northwest China were purposefully selected (for the sampling rationale refers to "Site Selection" in Chapter IV). Instruments including two sets of interview protocols and a 66-item questionnaire were designed using aspects of Cultural Historical Activity Theory (CHAT), which helped me as a researcher understand and observe first: if and how the cultural, political, organizational and personal frame factors meditated Chinese middle school teachers' beliefs about teaching and learning; second: if these teachers held different expectations of different student groups; and third: whether these teachers' beliefs and expectations influenced their instructional practices. In addition to the questionnaire, artifacts were collected, interviews were conducted, and observation fieldnotes were taken on site. The analysis of qualitative data was an on-going meaning-making process, taking place throughout the data-collection period. The results of the analysis of the quantitative and qualitative datasets were then merged for comparison and triangulated to develop a more complete picture of the dataset. Finally, the conceptual framework was used to interpret the results to address the research questions. The concurrent collection and analysis of both quantitative and qualitative data brought together the strength of both forms of research, enabling comparison of the results thus improving validation, adding scholarly rigor to the study and its findings.

This study illustrates what the Chinese middle school teachers in the sample themselves believed and what they described their instructional practices looked like. The findings are categorized into four themes: 1) Teachers' beliefs were shaped and reshaped by cultural values and historical sediments; 2) Teachers' beliefs were mediated by teachers' various personal backgrounds; 3) Teachers' beliefs were influenced or might be manipulated by political and organizational mandates, policies, regulations and rituals; 4) Teachers' beliefs influenced teachers' decision-making of their instructional practices to certain degree.

Culturally and historically shaped beliefs

The analysis of both quantitative and qualitative datasets revealed that cultural values and historical sediments played a significant role in shaping what the Chinese teachers believed. In their interviews the participants tended to use the cultural mottos or proverbs to describe their beliefs. In general, the interviewed teachers strongly claimed that diligence was the key for academic success, and that intelligence (IQ) was not the decisive factor for learning, though it was also important. They believed low SES students or those living in poverty generally had lofty aspirations and ambitions, and were motivated to learn since they had faith in education and/or they had no other choices. The teachers believed their students generally took education as motivation to move up or the way through which they could change their lives. These teachers also believed knowledge was hierarchical, and that traditional Chinese ways of teaching, such as repetition or rote learning, were still effective.

Accordingly, the teachers held high expectations of the students in poverty and from low SES, and they thought it was their responsibility and were willing to help them due to what they perceived as the students' unsupportive family environments. In addition, they thought these students had fewer behavioral problems, though some participants did not share the same opinion about this. These beliefs may explain why the majority of the participants believed they treated all their hard-studying students the same, no matter what ethnic group the students came from or what their social economic status was.

Personally mediated beliefs

The study's findings illuminated that participants' personal frame factors influenced and mediated what they believed about teaching and learning and their expectations of different student groups. The study mainly looked into the personal frame factors of gender, ethnicity, educational degree, income, language ability and cultural experiences such as the surroundings where they grew up. Both the quantitative and

qualitative datasets supported that there were significant differences in the teachers' beliefs and that these self-reported beliefs correlated with certain personal frame factors. For instance, female teachers might describe their beliefs differently from male teachers.

Statistical analyses revealed that female teachers held higher expectations than male teachers of all ethnic student groups, including Han and Non-Han, students in poverty and students from low SES. More respondents with bachelor degrees claimed that they did not use intelligence (IQ) as a predictor of students' learning abilities, and they were more willing to help less motivated students. More low income respondents (most probably novice teachers) agreed it was very challenging to implement a variety of instructional practices to meet the needs of different student groups and they did not believe that they had done so. More Turkic, multilingual respondents, and respondents who grew up in mixed population environments were willing to accept the students who don't use Mandarin as their primary language into their classes. The bilingual group claimed that they less likely saw the need to teach students who had behavioral problems in a controlled environment. Respondents who grew up in a mixed population more likely held high expectations of students with deficits or with negative stereotypes, especially both low SES students and minority students. In general, bilingual/multilingual respondents and respondents who grew up in a mixed population were more inclusive in their teaching, indicating that teachers who were exposed to multicultural surroundings were more willing to help diverse students.

The qualitative dataset generally supported the above findings. The qualitative data analysis supported that teachers' gender, knowledge and family backgrounds were associated with their beliefs about teaching and learning, and about student groups. However, it is worth noticing that the quantitative analysis revealed significant differences across teacher ethnicities, while interview data showed little variation in teachers' beliefs across ethnicities. This might be due to interviewees feeling uncomfortable sharing their

opinions about ethnicity face-to-face, perhaps for political reasons (to be discussed in "Discussion Section" next).

Politically and organizationally influenced beliefs

Quantitative and qualitative data from the three selected schools were analyzed, compared and triangulated to find empirical evidence to address whether schools with different policies and/or classes, with and without large numbers of diverse students, including bilingual learners, would be associated with different teachers' beliefs, and if so, whether teaching practices varied as well. The findings of the study provide evidence that political and organizational factors were associated with differences in the educators' self-reported beliefs about teaching and learning, and their expectations of different student groups. These findings suggest that teachers' beliefs were influenced by tensions and contradictions in the strong political environment of the schools and the school systems, and that these beliefs significantly differed between schools with different organizational frame factors.

School 3 /Double Arrow Middle School was different from the other two schools politically and organizationally. Over the course of the data collection it was adopting a different policy, "Bilingual Education", which brought large numbers of bilingual learners - more than half of its student population - into the school, and so changed the teacher population. This unique demographic composition resulted in schooling dynamics of its own. Accordingly, its organizational structure, hence its functions, were different from the other two schools. As a result, the teachers working in School 3/Double Arrow Middle School held different beliefs from the teachers working in School 1/Sunflower Middle School and School 2/Old Elmwood Middle School, and some differences were statistically significant.

The analysis revealed that more teachers in School 3/Double Arrow Middle School claimed that they did not believe in traditional pedagogical strategies such as

grouping students. They were more open to classes of mixed bilingual learners, minorities, and even the students with behavioral problems. They tended to hold higher expectations of their students living in low SES and from minority ethnic groups, and they were more willing to help these students learn. These results might be owing to the special political and organizational environment of the school. It indicates that different policies and more bilingual learners may have influenced what teachers believed and how they acted.

The relationship between teachers' beliefs and their associated instructional practices

The analyses of the qualitative and quantitative (2Qs) datasets revealed two major themes in the correlations between teachers' self-reported beliefs and their associated instructional practices. First, the quantitative data revealed that these teachers believed it was very valuable, but extremely challenging to implement various pedagogical strategies to meet the needs of different student groups, given their limited educational resources. The respondents generally believed they had tried to do so in their daily teaching practices. Comparatively, fewer participants agreed that the implementation of various instructional practices was for the purpose of meeting political and organizational requirements such as curriculum reforms or "mandated requirements for minimum student achievement".

Second, the qualitative data indicated that the teachers in the sample, from their descriptions, tended to categorize their students based on academic performance and plan their lessons accordingly. Because of their deep beliefs about "effort" and "diligence" in learning, they required students with poor performance to work harder. They believed great effort and hard work could make a difference in learning, and through their teaching they helped their students develop the same belief. That being said, their teaching activities were also governed by mandated standardized tests of mostly factual knowledge. The common instructional practice was to teach the majority of the students (usually mediocre in performance) within a 40-minute period and help high and low achievers

after class. Similarities in instructional practices included: 1) Reserving challenging curricular materials and creative pedagogical methods for high achievers, and requiring that low achievers focus only on basic skills and knowledge; 2) Teaching via traditional Chinese pedagogical methods such as rote learning methods. The qualitative data supports the findings from quantitative data that the teachers believed it was very challenging to try to meet different students' needs due to limited available educational recourses. The next section will use the CHAT "activity triangle" to understand and interpret these findings,

Discussion: Interpretations and Understanding of the Findings

Systematic analysis of the 2Qs data (qualitative & quantitative) revealed three major categories of frame factors that contributed individually and/or collectively to shaping, influencing and framing the teachers' beliefs, which influenced their instructional practices. These frame factor categories were all associated with teachers' beliefs, and yet they existed in different elements of the system and functioned differently. Personal frame factors were seen in the subject element, and functioned as mediators and negotiators. Cultural and historical frame factors were developed and existed in the community element, and they orchestrated the collective action in the system. Political and organizational frame factors functioned as rules, guiding, influencing and even manipulating actions in the system. It is worth noticing that the "*Rules"* element highlights the fact that there are bound to be rules – mandates and regulations that affect in one way or another the means by which activity is carried out and the ways in which community members act individually and collectively to achieve goals.

To interpret and understand how these beliefs were shaped, mediated and even manipulated by these frame factors and how the beliefs were related to instructional practices, the conceptual framework uses aspects of Cultural Historical Activity Theory (CHAT) to explore and explain what happened in the system, i.e., dynamics among mediating artifacts (tools), subjects, objects, the community, and division of labor in the

primary activity system. The activity triangle model with frame factors helps us understand that historicity and dialectical power exists in the activity system, when the triangle heuristic is analyzed as a unit, as suggested by CHAT.

Thus, in this section, I first discuss whether and how these findings align with the literature, using the CHAT components in Table 32 below developed from the work of Mwanza & Engeström (2003). Then, I depict systematic structures by each frame factor category, utilizing EngestrÖm's (1999) activity triangle to exemplify the dialectical relationships and interactions that occurred in the systems of the three selected schools. I then use the analysis of my findings to propose a new theoretical explanation of the Chinese teachers' beliefs and practices that differs from what earlier studies proposed about the beliefs and practices of the U.S. teachers. Finally, I discuss the contributions of this study.

Table 32: Cultural Historical Activity Theory on Site

	Components of CHAT	**What happened on Site**
1	Activity	What sort of activity is the community interested in?
2	Object/Objective	Why is the activity taking place?
3	Subject (personal frame factors)	Who is involved in carrying out the activity?
4	Tools (Mediating Artifacts)	By what means are the subjects performing the activity?
5	Rules (Political / Organizational frame factors)	Are there any cultural norms, personal beliefs, political mandates and regulations governing the performances of the activity?
6	Division of labor	Who is responsible for what, when carrying out activity, and how are roles organized?
7	Community (cultural & historical frame factors)	What is the environment in which this activity is being carried out?
8	Outcomes	What is the desired outcome from carrying out this activity?
9	Tensions and contradictions	What are the tensions and contradictions emerging while carrying out this activity?

Activity orchestrated by cultural and historical frame factors

The impact of teachers' beliefs on students' learning is an outcome of a "collective" activity across a community involving not only the teacher and her students, but also other teachers in the school, administrators, and parents and citizens both interested and uninterested in local education. Thus, when we discuss the impact of teachers' beliefs, we have to take the whole activity system as one unit of analysis whose

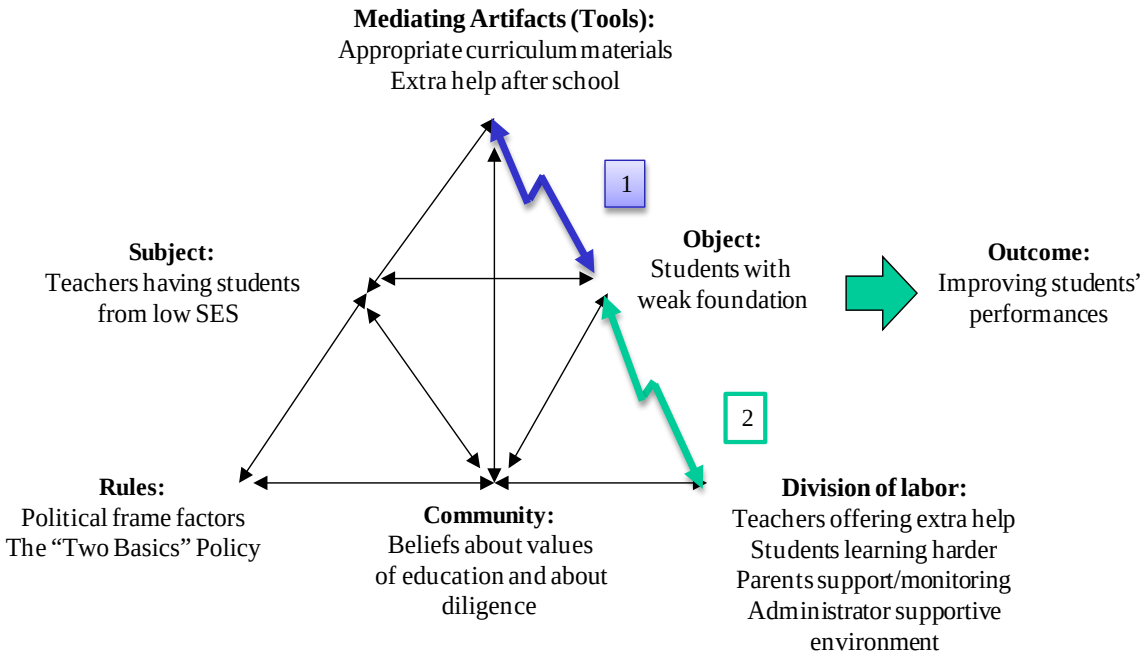
structure is expanded to include not only the classroom, but also families, neighborhood and the society. This section discusses how teaching activity was orchestrated by the beliefs shaped with cultural values and historical sediments that existed in the community. Teachers' individual beliefs reflect the shared cultural "open" and "hidden" values and norms that have developed over time and place in the community.

CHAT theorizes where and why tensions and contradictions arose in the system, and further, how these tensions and contractions were confronted individually or collectively. When the "Two Basics" policy (rule) was introduced into the local schools (system), the community became interested in implementing the policy (activity) to accomplish its goals of free nine-year compulsory education (objective). The policy (rule) stipulated that educational opportunities must be provided to all school-age children by offering appropriate curriculum and necessary help (mediating artifacts/tools). No doubt, the activity of implementing the new policy involved all the members in the system including teachers, students, administrators and parents (the community). To carry out the activity (the goal), the allocation of responsibilities and variations in job roles and responsibilities amongst the community members became obligatory (the division of labor). Schools were required to accept all the children living in the district, teachers were compelled to teach some children with whom they were not familiar, and students found themselves working with peers who lacked schooling experience due to poverty. The new dynamics in the activity system created tensions and contradictions between central components (Engestrom, 1999) for the community members [i.e., the tensions that occurred when teachers' beliefs (personal frame factors) confronted what they were required to do by policy (rule)]. These members were experiencing emotional stress and even got upset during the change process.

The activity – implementing the "Two Basics" policy – required School 1/Sunflower Middle School to accept more students from low SES (objects) than ever

before. Both the school and the teachers were not prepared for, and were inexperienced in dealing with, this new demographic situation, producing tensions and contradictions in the system as illustrated in Figure 7 below. Please note the two major contradictions (marked as the lightning-shaped arrows in the figure) between the object and the mediating artifacts/tools, on the one hand (Number 1), and between the object and the division of labor, on the other hand (number 2). The first contradiction was between the very challenging issues the system was facing to educate the newly-enrolled students from low SES and an insufficiency of tools to meet the challenges. These students had a weak knowledge foundation and demanded appropriate curricular, pedagogical materials from school and especially extra help from their teachers. The second tension existed between students from low SES (objects) and the division of labor – it was teachers who were mainly responsible for students' learning. Although the stakes remained high for teachers to face the challenge, other community members were also obligated to take up their responsibilities to act collectively. Although the study suggested that these contradictions were partially resolved or reconciled under local political pressure, it is the cultural beliefs shared in the community that orchestrated the activity to achieve the goal to a great degree.

Figure 7: Culturally Shaped Beliefs as Governance for Practice



With the beliefs shaped by cultural frame factors, believing that students in poverty and from low SES had lofty aspirations and motivations, the teachers did not hold low expectations of the students from various negative family backgrounds. They believed it is their responsibility to help these students learn by adopting appropriate and effective instructional strategies, and they believed the students would do better if teachers provided sufficient help. Believing that only effort and diligence could make a difference in learning, the teachers encouraged and even urged these students to work hard to catch up. What is more, these beliefs were shared in the community among other teachers, students, parents and administrators. Hence, beliefs about the value of education and about diligence functioned as the cultural and historical frame factor of the community to orchestrate and guide the community to achieve the goal to improve students' learning. It was these culturally shared beliefs that made it possible for the community, including students, teachers and administrators, to collectively confront contradictions in the process of achieving the outcome – improving these students' performance.

The shared beliefs (cultural frame factors) in the community helped define each individual's responsibility in the community (division of labor) in the new activity system. Teachers were expected to teach the students at their current level and provide the help that they needed. Students were supposed to work hard, and harder, as necessary. Parents were expected to closely monitor their kids' learning during evenings and weekends and provide tutoring when necessary. Administrators would ensure time, space and even policies to allow extra teaching and learning to happen after school. With the collective effort of the community, these students' performance in School 1/Sunflower Middle School improved (as told by the principal in the interview on March 26, 2010), which dialectically enhanced the shared cultural beliefs in the community that students' diligence and teachers' tailored help would make a difference in learning.

The model in Figure 7 presented above indicates that it may be very fruitful to move from the analysis of individual actions, such as those of teachers or students, to the analysis of their broader activity context, i.e., the community, and back again. This model also highlights the function of cultural frame factors in the community. They not only shape teachers' beliefs – their personal frame factors - but also orchestrate activities by involving all the community members together in confronting tensions and contradictions that arise in achieving the desired outcomes. Engeström (1999a) points out that the reorchestration of the multiple voices of individuals and the community is dramatically facilitated when the different voices are seen against their personal and historical background as layers in a pool of complementary competencies within the activity system. The activity triangle reveals the power of multiple voices from the community – cultural values and historical sediments, from the rules – political and organizational mandates and rituals, and from the subjects – teachers as individuals and professionals.

Practices negotiated by personal frame factors

CHAT posits that each person (subject) comes to the setting with past experiences, beliefs, and knowledge – various personal frame factors. Valencia et al (2009) argue that teachers enter the teaching system with beliefs that have been culturally constructed and negotiated by multiple visions, expectations, histories, past experiences, tools, and settings, thus further complicating the setting. When the policy of "bilingual education" was carried out (activity), School 3/Double Arrow Middle School experienced dramatic changes, not only from shifts in its population, but also from necessary shifts in its organizational structure and function. The merging of a Uygur school with a mixed school added more than 1000 bilingual learners (objects) into its mixed student population. At the same time, bilingual or multilingual teachers (subjects) were hired to serve the new student population. The community of the system changed accordingly, and so too did the roles and responsibilities of the community members (division of labor). The community

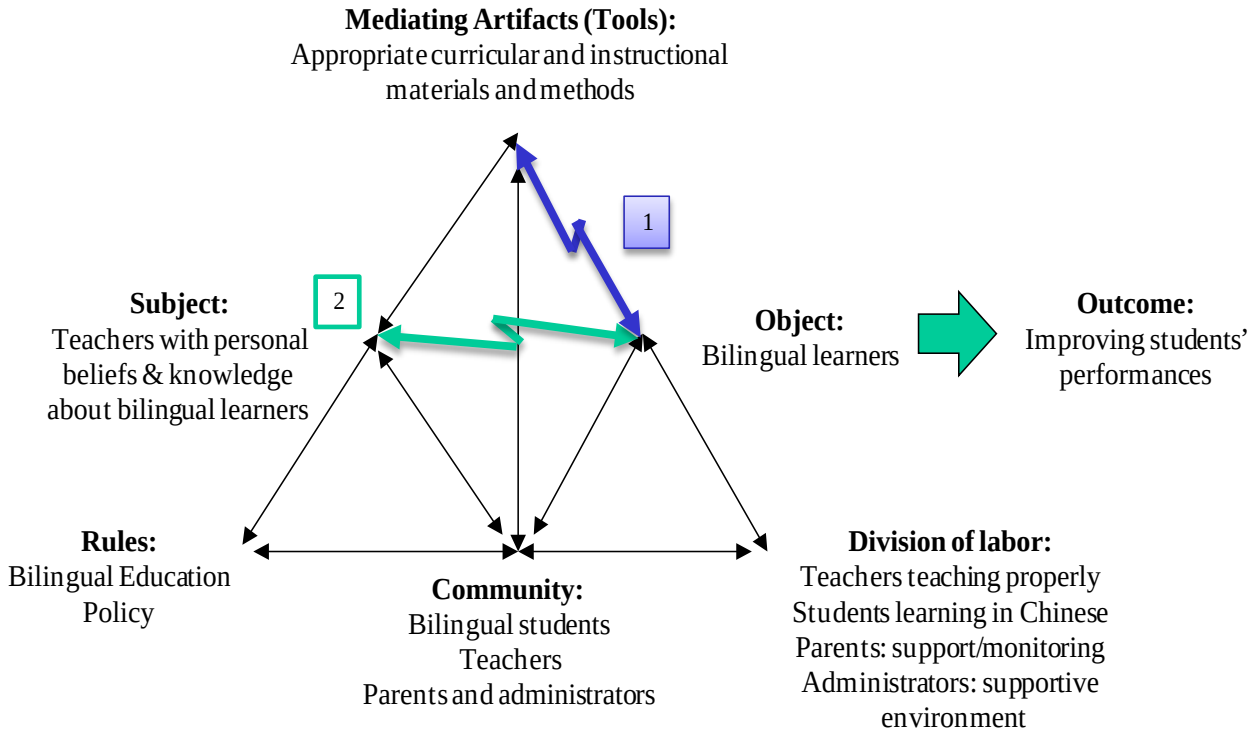
was interested in how to help these bilingual students learn in their new setting – the new goal (objectives). No doubt, all the demographic and organizational changes resulting from the policy (rules) added complexity to the school (activity system).

In School 3/Double Arrow, we see different tensions and contradictions for teachers and students, both separately and collectively. Figure 8 illustrates two major contradictions (marked as the lightning-shaped arrows in the figure) between the bilingual learners (objects) and the mediating artifacts (tools), on the one hand (Number 1), and between the bilingual learners (objects) and teachers' personal frame factors (subjects), on the other hand (number 2). The teachers (subjects) in School 3/Double Arrow were struggling with tensions and contradictions arising *between* their beliefs and previous experience (personal frame factors) of what is best for these children (objectives) *and* generic strategies (tools) on how to best achieve it (outcome). The first contradiction existed in the fact that the available curricular and instructional resources (tools) were challenged by the needs of the bilingual learners. The challenges included that both school and students were hardly ready for the transition in such a short time. For instance, many students did not have sufficient Chinese language proficiency for bilingual education, and appropriate instructional resources were nowhere to be found for teachers as well.

The second contradiction lay between teachers (subjects) and the students (objects). In one case, monolingual teachers and the teachers who grew up with one ethnic group (personal frame factors) appeared to be unprepared for helping bilingual students learn, maybe because these teachers did not have the theoretical tools and practical life experiences that would allow them to understand how to teach children placed in a new environment where they had to learn in a new language. These students also become emotionally engaged and learning, which is an expansion of one's action possibilities, became a by-product of the pursuit of their motives and goals (Roth & Lee, 2007). During this period, how to settle down in the new settings became the priority for these students.

In addition, because these teachers were inexperienced and unprepared for teaching this particular group of students, for a period of time they did not have a holistic theory of practical teaching strategies consistent with their professional lives to increase their confidence and improve their teaching abilities. Consequently, lacking knowledge of these students, the teachers became exhausted and felt frustrated by the newly-required subject content and the associated pedagogical approaches. They had no idea how to teach students who were still struggling with their Chinese language efficiency. In another case though, bilingual and multilingual teachers and those who grew up in a mixed population understood the challenges that the bilingual students were facing, and they were more willing to help them, and could be more helpful because they knew these students better. However, some teachers had to confront and negotiate their own tensions and challenges that arose from having to teach in a second language. The study noted that some of the teachers were struggling both with learning to teach in Chinese language in addition to learning traditional Chinese pedagogical methods.

Figure 8: Practice Negotiated by Personal Frame Factors



Teachers' personal frame factors that were developed and shaped culturally and historically were influential in teachers' decision-making. Teachers negotiated what they believed about teaching and learning with what they could and should do in their teaching practices. Teachers' beliefs, mastered knowledge and previous experiences (personal frame factors) as a whole played a significant role in negotiating the instructional strategies they adopted (tools), including both curriculum materials and pedagogical methods to realize best student performance (outcome). However, these personal frame factors were influenced and even manipulated to some degree by policies and mandates that varied across different organizations.

In a given local political environment, personal frame factors might be suppressed by political and organizational frame factors, that is, by differences in context (system). Personal frame factors might be suppressed in response to a strong opposing group position, while the same teacher in another school might believe and act differently. That is, the personal factors could be suppressed with political and organizational factors in certain schools that had certain personnel and ascertain atmosphere. Additionally, the dialectical power of these various classes of frame factors – personal, political and organizational – now and then affect each other in one way or another. How these frame factors come together results in differences that will affect teachers' beliefs and practices, and hence students. Thus, other entities such as the community members as individuals, the division of labor, the expected outcomes and the characteristics of the settings in which activity takes place have to be considered as a whole.

Decisive and influential political and organizational frame factors

As Gallimore & Goldenberg (2001) suggest, cultural behavior should be explored holistically in "activity settings". Engeström (1993) asserts that CHAT, with its dialectical core, is deeply contextual and oriented to understanding historically specific local practices, their objects, mediating artifacts, and social organizations. It is most likely that

at the inception of their teaching careers, teachers may have trained in similar programs and therefore may hold similar beliefs about teaching and learning. Nevertheless, as they are melted into the social fabric of their schools, their beliefs could either be reinforced or could change dramatically. Even their personal beliefs could be just manipulated and suppressed by political and organizational mandates and regulations. This study suggests that political and organizational factors have more weight in shaping and framing teachers' beliefs and in manipulating what and how they taught, even in the presence of shared personal, cultural and historical beliefs and values from common community. The three selected schools differed significantly - from school structure, to student population, to policies adopted at the time, and teachers' beliefs tended to correlate with their individual schools.

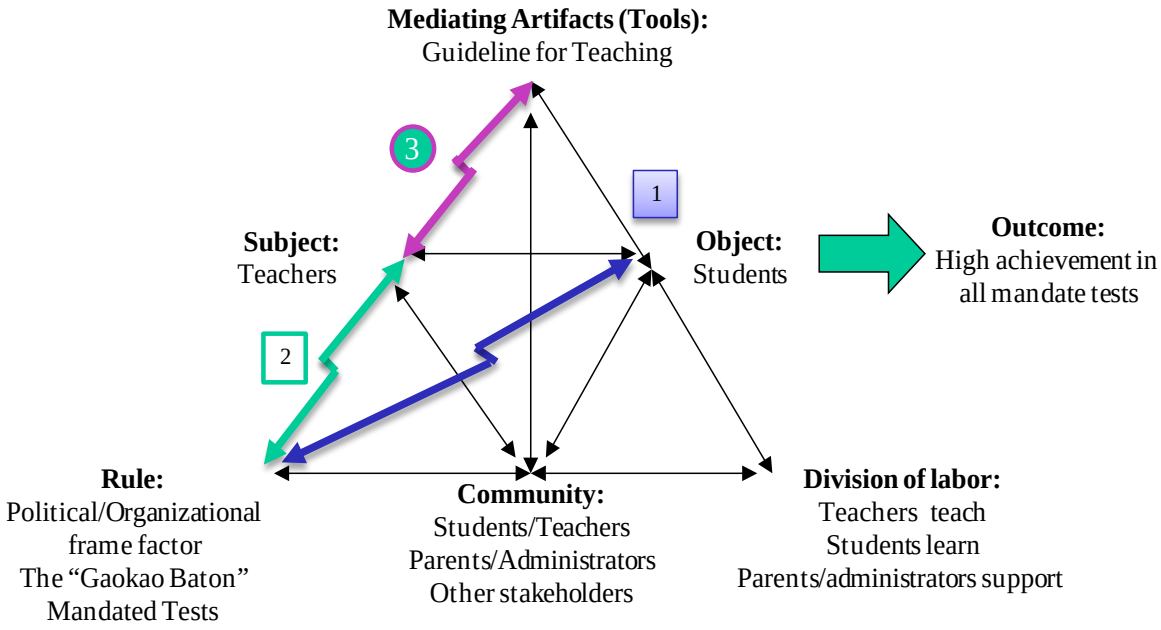
The beliefs that determine a teacher's sense of responsibility for her students' learning could be reinforced in School A/Sunflower Middle School, which had more students from low SES than ever before due to the "Two Basics" policy. In this new "activity setting", the students (objects) in the system changed, and so did the division of labor. The teachers in this school (subjects) felt their previous students (objects) were much easier to teach, and they realized their current students (objects) from low SES demanded more help from them, which meant they had to adopt various instructional strategies (tools) in order to meet their needs. Simultaneously, the teachers' beliefs about diligence and effort unconsciously and naturally directed their natural daily practice, e.g. their treatment of students from low SES, their selection of the objectives of their actions (what and how to teach), and their direction on division of labor (i.e. differentiating their, and their students,' responsibilities based on their roles).

However, the same teacher's beliefs about her responsibility for student learning could decline over time were she situated in School 2/Old Elmwood Middle School, which was comparatively stable and historically served mainstream students who needed

less help. The teachers in School 3/Double Arrow Middle School worked in very different "activity setting" – heavy ethnic diversity, which was a result of the "Bilingual Education" policy. Working in this setting, teachers' beliefs about teaching and learning were seriously challenged, and their beliefs changed dramatically while negotiating and confronting the tensions and contradictions. One example was that the existing pedagogical methods did not seem to work as well as before. Consequently, the teachers in School 3/Double Arrow Middle School held significantly different beliefs from the teachers in the other two schools.

The example for political influence is that in China, the "baton of Gaokao" – college entrance examination plays a crucial and decisive role in K-12 education, because teachers teach and students learn based on what is tested. This activity of learning for the exam already exists in their community, with its characteristic interests, concerns, and objects or motives, especially starting from middle school (= junior + high school in U.S.), though the exam might be still several years ahead. The community (cultural and historical frame factors) is interested in how to help students pass the tests (the goal). Figure 9 below depicts the tensions and contradictions in this activity system.

Figure 9: Decisive Political-Organizational Frame Factors



Three major contradictions, again marked as lightning-shaped arrows in the figure, exist in this activity setting: 1) the one between the mandated tests (rules: political and organizational frame factor) and the students (objects), 2) the one between the mandated tests (rules) and the teachers (subjects); and 3) the one between the teachers (subjects) and the guidelines for teaching (tools). In the process of achieving the expected outcome, both the students and the teachers confronted contradictions with the mandated standardized tests (political frame factor), because of their decisive power in instructional practices. The students had chosen not only the *objective* of their actions (i.e., entering best college) but also the *means/tools* by which they could achieve it (i.e., study harder and longer and more – extra learning materials). As a matter of fact, the students in these schools enacted not just any practices but engaged in concretely realizing an existing collectively defined *activity* in their municipality, that is, studying for the future college entrance examination, and were *motivated* by this ultimate goal (Roth & Less, 2007). Students learned either to memorize content matter either to prepare for the next academic level or just for the purpose of passing tests or obtaining good grades. Thus, one tension is in the possibility that some students who had been influenced by western culture and modern China might not be satisfied with what and how they were told to learn, and they might expect to learn something different such as creative and critical thinking (Without involving any student participants, this study could not investigate these issues.)

In this activity system, the teacher's role and responsibility are to help students successfully achieve the ultimate goal – pass the mandated tests. To be able to help, these teachers must study the "guidelines for teaching" very carefully, and teach accordingly. Additionally, they must synthesize practical and useful test-taking skills to prepare their students for the tests. Since the mandated tests are designed to focus on fact-based knowledge, the traditional Chinese pedagogical method of rote learning seems very effective, and not surprisingly, that is often how teachers teach. What the teachers have to

do (political and organizational frame factor) might contradict what they believe (personal frame factor). Unfortunately they often times find that their beliefs are suppressed by the political and organizational frame factors working together as rules to stipulate or constrain what they teach and how they deliver their teaching. Consequently, the teachers' complex object-realizing process of decision-making and negotiation in the system is often met with various points of tension and contradiction as beliefs, objectives, rules and outcomes conflict and compete across different activity settings.

Nevertheless, the elements of the activity system are associated with one another, interact and negotiate with each other whenever necessary. The certain political and organizational frame factors predict or set expectations for teacher actions, but teachers might act somewhat differently under the influence of their personal frame factors. Hence, there exists a dialectical process of influences. The study suggested that the teachers reassembled and reconstructed the meaning of changes around them with their particular personal frame factors.

Comparison of the Chinese and the U.S. teachers with regard to their beliefs and practices

The U.S. and China differ in many of their cultural values as well as political and educational systems. Different cultural, political and organizational frame factors might cause significant differences in Chinese and U.S. teachers' beliefs, and the associated practices. When the teachers in the two counties are facing similar challenges – such as working with a diverse student population, do they hold different beliefs and expectations? If so, how do their different beliefs and expectations influence their instructional practices? To answer these questions, I compared the findings of this study to what the literature has said about the beliefs and practices of U.S. teachers, and I synthesize five similarities and seven differences between the Chinese teachers in the sample and teachers in the U.S.

Similarities:

1. Teachers in both counties deliver their teaching using curriculum dictated by national and regional mandated standardized tests;
2. Teachers in both countries are experiencing student population with financial, linguistic and ethnical diversity;
3. Teachers who personally experienced cultures and languages of other ethnic groups tend to have positive beliefs about, and attitudes towards bilingual learners, and are more prepared to help these students learn;
4. Teachers with high expectations of their students adopt more challenging curriculum, and more likely adopt more advanced pedagogical strategies than do teachers who have lower expectations of their students;
5. Young and novice teachers feel it very challenging to implement various instructional strategies to meet the needs of different student groups.

Differences:

1. Chinese teachers self-reported that they held the belief that all students can learn;
2. The Chinese teachers in the sample believed in and taught with traditional Chinese pedagogical methods such as rote learning, whereas U.S. teachers rarely employ rote learning;
3. Most Chinese teachers in the sample claimed that they did not regard intelligence as a decisive factor in students' learning. Instead, they held strong beliefs that diligence and effort would make learning successful. On the other hand, many U.S. teachers do regard intelligence as a decisive factor in students' learning.
4. Most Chinese teachers in the sample held higher expectations of students in poverty and from low SES; they believed that those students had lofty

aspirations and the ambition to change their life through education. Consequently, they did not share the mental model that some U.S. teachers hold that defective environments or negligent parents often yield deficient students;

5. The majority of the Chinese teachers in the sample believed that they held the same expectations of children from ethnically, socio-culturally, linguistically and financially (low-income) diverse backgrounds, as long as these students study hard. On the contrary, the literature reveals that U.S. teachers tend to have higher expectations of children from mainstream backgrounds;
6. The Chinese teachers categorized their students according to their academic performance (test scores), and taught accordingly in the same class; While some teachers' practice in the U.S., was to categorize students based on their family background or their language proficiency;
7. Female teachers in the sampled Chinese schools reported that they held higher expectations of students in poverty and from low SES of all ethnic groups including Han and Non-Han, than did their male counterparts. In the U.S., male and female teachers both hold the similar expectations of these students.

Although the comparison was only between one study of Chinese middle school teachers and the literature on the U.S. teachers, these similarities and differences give rise to some interesting questions to ponder. For example, in response to No Child Left Behind, U.S. schools have mandated tests. Why don't U.S. teachers more often use rote learning, as the Chinese teachers do, at least partially in response to mandated tests? One possible answer is that Chinese teachers are driven to rote learning by other factors in addition to mandated tests. Another reason might be related to what knowledge is tested.

Cultural and Historical Activity Theory (CHAT) can help us understand this phenomenon. We first see culturally, rote learning (tools) has its cultural and historical roots in Chinese education – Confucius educational heritage. It has been well accepted in Chinese society (community). Second, personally the teachers in the study believed that knowledge is hierarchical, and so rote learning/repetition remained the effective way to accumulate basic knowledge. Third, politically and organizationally, the "baton" of mandated tests (test on fact knowledge instead of creative thinking), and limited educational resources (big class size) constrained and manipulated what and how these teachers could teach (tools). All these cultural, personal, political and organizational frame factors in concert governed the teaching activity during the process of helping different student groups learn (outcome). Hence, why the Chinese taught in this way can be explained to some degree. The understanding of Chinese teachers' beliefs hopefully helps "making familiar strange" when the U.S. teachers reflect on their beliefs about teaching and learning.

Contributions of the study

This study makes several contributions to the field. First, the study offers evidence that Cultural Historical Activity Theory (CHAT) can help us explore and understand activities in a different cultural system. Second, studying relationships between characteristics of the subject (individual teacher beliefs) and other elements of the system suggests the importance of using CHAT as an analytical tool**.** The study indicates the fruitfulness of moving from the analysis of individual actions such as those of teachers' and students,' to the analysis of their activities' broader cultural and political contexts, and back to individuals again. That is, personal, cultural, historical, political and organizational frame factors should be investigated holistically for better understanding of the relationship between teachers' beliefs and their associated instructional practices. CHAT turned out to be a powerful and flexible analytical lens that could be tightened

down vertically to look at particular aspects or problems in an activity system, and it could also be widened to look at problems horizontally that might arise between different activity systems in the network of the primary system (Bjørke, 2004). Third, this study highlights the function of cultural frame factors. Cultural frame factors not only shape teachers' beliefs, but also orchestrate and linked together the activities of all community members to achieve the desired outcomes collectively.

A fourth contribution is related to the finding that in the local activity system political and organizational frame factors sometimes suppressed personal frame factors, and sometimes even cultural frame factors. In my previous discussion, I noted that what individual teachers believe was often suppressed and even manipulated by political and organizational mandates and regulations. This study then challenges the often-held assumption that teachers employ significant agency with authority in the four walls of their classrooms. Perhaps, under certain political and organizational circumstances, both cultural and personal beliefs have no choice but to be adjusted and adapted, both willingly and unwillingly. However, the study was limited in its ability to capture a complete picture of the dynamics of the activity system, thus calling for further research. The next section discusses limitations of the study.

Limitations

On the one hand, I am aware that there are several limitations in this study, most of which are limitations of data, including where, when and how it was collected. With 266 survey participants and 21 interviewees from three middle schools in one city in China, I, as a researcher, cannot claim anywhere near a complete understanding of Chinese teachers' beliefs about teaching and learning and their associated instructional practices. Although I have attempted to explain the dynamics of teaching activities in the three sites to the best of my ability, there are still a number of critical gaps that merit attention. The insights yielded from this dissertation have come from my perspectives as a

researcher, who had a dualistic role of an "insider" and an "outsider", and consequently, it is unavoidable that I, both as a native Chinese person, and as a U.S researcher, had cultural and intellectual bias which influenced me throughout the process of study design, data collection and analysis, interpretation and reporting of the findings.

On the other hand, I believe that this study has potential to influence conversations around the idea that teachers' beliefs shaped by different cultural and political circumstances might provide different guidance in instructional practices and resultant students' learning. In addition, analysis of teachers' teaching activities in another culture, offers a variety in cultural and historical perspectives that can yield insights that may not otherwise be part of the conversation.

Study design

There were two major limitations in the study design. One limitation is that the period of the study was only three months, from March to June, 2010. The best qualitative research, especially, requires the kinds of thick, rich descriptions (Geertz, 1973) that lead to an in-depth understanding of a research site. Teachers' beliefs are shaped over time, and it also takes a long time to see their impact on instructional practices and further on students' learning. However, I did not have that luxury, because the study was undertaken overseas, and it was rather time-consuming and costly. The other methodological limitation is that the study only involved middle school teachers. No student subjects were involved, and thus, the relationship between certain instructional practices and students' learning could not be investigated.

Translation of research instruments

Another limitation of the study pertains to the translation of the research instruments by which I collected all the data. Language became a very important issue when the study was conducted in a non-English speaking culture. To make things more complicated, some of the subjects were non-native Chinese speakers. All instruments for

the study including interview protocols and questionnaires were originally written in English, and I, a native Chinese, translated them into Chinese. To achieve validity and reliability of the translation, a Chinese instructor in a public university in the U.S. was invited to translate these instruments back to English for comparison with the originals. Two pilot studies were conducted: one among Chinese overseas students studying in a U.S. university, and one among Chinese teachers in a different middle school in the same city as the study. Given all these measures, some misunderstanding of the instruments still unavoidably existed during the data collection. What is more, although all the interview recordings were first transcribed by a Chinese overseas graduate student in the U.S., and I translated the transcriptions into English, there are bound to some missing messages during the process.

Local political environment: in history and now

Another area of concern has to do with the limits produced by the local political system. The political circumstances certainly limited the depth of the study to a certain degree. Historical experiences such as the sorrow and sad memories from the political movement – the Great Cultural Revolution -- have taught Chinese people a hard lesson. Even now, decades later, memories remain fresh when people were reported to the government by their neighbors, even by family members for politically incorrect statements, sometimes not obvious and inadvertent. People ended up in serious trouble, often thrown into prison. Local people remain very cautious and reluctant to talk about anything that might be related to political issues. They try to stay away from such issues as far as possible. There have always been hidden rules and conversation codes (what we can talk about, and what we shouldn't talk about) in politically sensitive areas such as schools. The head person at every school in China is the Communist Party Secretary (Leader) of the school.

The riot in Urumqi, the city where the study schools were located, in July 2009 surfaced underlying conflicts and the tensions among different ethnic groups in the local area at a significant scale, and with consequences not seen before. When the study was conducted about six months after the riot, the angry fear and hostile attitudes were obviously still floating in the frozen smoggy winter air. Local people became more cautious than ever talking about ethnicity or expressing their political opinions. A good example of this problem is the fact that, during my first site visit, I was warned by some staff in the Educational Bureau not to talk about sensitive topics such as "bilingual education."

In addition, the U.S. and China have different processes for *Human Subject Approval* for research. This could be the reason why local people didn't believe their privacy was and could be protected, even after I explained the process of my IRB approval in detail and they signed the consent letters. The majority of the teachers had never before heard of this requirement. The subjects perhaps remained worried that they could get into trouble if they shared with me what they really believed, though I told them that their names would not be used and all the data was anonymous. The common practice in local schools was that some researchers had certain relationships with one or more important figures in the organization, and teachers were instructed to work with these researchers. The previous experiences told them that what the consent letter said could not be true, because "it's just written on a piece of paper." Culturally they believed that "A closed mouth catches no flies." Hence, it was always safe to express themselves in official language, which might be what I got in my interviews.

Researcher's dualistic role as "Insider" and "Outsider"

One possible limitation of the study does not pertain to the data collected or when and how to collect data but as it does to me as the researcher. The insights yielded from this dissertation have come from the perspectives of a Han Chinese, who immigrated to

the U.S. five years ago. Consequently, this study is limited to the extent that it reflects the biases of someone whose personal investments in Han Chinese identity and community could not be as deep as those of some other ethnic groups in China. That I was both "insider" and "outsider" had pros and cons throughout the whole process of the study, from study design through documenting the findings.

Due to my dual role of "insider" and "outsider", participants might have felt they could only tell me certain things. As an insider, I won more trust in a shorter period. For example, a teacher participant whispered, instead of speaking up, when she told me her opinions about students from a certain ethnic group, "XXX (ethnic) students are considered to be excellent when they are good, but very tricky and sneaky when they are bad. They tend to be bad. ….This is open-secret among teachers" (Interview on April 7, 2010). However, because I am a Han and a researcher from the U.S., I was seen as an "outsider" by the other ethnic groups, especially the Turkic group, and an "outsider" to the local teachers as a whole. I was naturally treated suspiciously in some settings. I remembered that when I interviewed the minority teachers, especially the Uygur teachers, interactions felt awkward sometimes. One particular Uygur female teacher told me at the beginning of the interview that she did not want to talk about the relationship between Han and the other ethnic groups, and I could sense her anger or uneasiness from the flush on her cheeks and from her unsteady voice. Consequently, it was possible that Non-Han interviewees either told me something that had been said officially, or they directly refused to share their real opinions with me.

Implications and Suggestions

The limitations of the study provide some threads into which future practices and research may be woven. This section will detail recommendations in two areas: (1) implications for teacher education; (2) suggestions for future research to explore the

impact of teachers' beliefs on students learning by extending the study period, or by involving student participants.

Implications for practice

The findings from this study have important implications in some specific and interconnected areas related to teacher education. Scholars claim that one of the prime goals of teacher education is to help preservice teachers achieve career-long professional development (Richard & Farrell, 2005) and provide in-service teachers with opportunities to reflect on their practices (Zeichner, 2009). Given the diversity of prospective and in-service teachers and the evidence that teachers' beliefs shaped culturally, personally, politically and organizationally produce some impact on instructional practices, and resultant students' learning, questions are raised about the implications of this research for the current teacher education.

These should be a focus on teacher development activities to help teachers change their pernicious beliefs when possible, since changes in practice often require prerequisite changes in beliefs (Richard et al, 2001). Teachers' mental models (beliefs) are not consciously created, hence hard to see. Teachers need opportunities to become aware of the nature of their mental models (beliefs) as personal frame factors, and as a consequence to become more open to exploring them and developing them with consciousness, to realize "ideological clarity" (Bartolome, 2002)[60]. Teacher preparation courses could provide such opportunities for preservice or in-service teachers to reflect on their beliefs by surfacing them and comparing and challenging their own beliefs with others' so as to make their beliefs explicit, or by throwing them into the light of day as Meadows (2008) suggests. This type of reflection is possible in many ways including in-class narratives, journals, discussions, mini-interviews among classmates, designed scenarios, videotapes of their teaching if available followed by discussion, and literature with regard to

[60] Bartolome (2002) defines ideological clarity as "the process by which individuals achieve a deepening awareness of the sociopolitical and economic realities that shape their lives and their capacity to transform them" (p. 167).

teachers' beliefs in other cultures and countries. Through this process, teachers, both pre- and in-service, might see the necessity to change their own beliefs, as many times as needed throughout their career.

This study, being about teachers' beliefs in China, though self-reported, in a very different cultural and value system from that of the U.S., may be useful in such units or such a course because it can illustrate alternatives to generally held beliefs to make it possible for teachers to more easily see that alternatives are possible by "making familiar things strange". This study can also be used as a window to look at the instructional practices in other cultures.

Suggestions for future research

The results of this study have several implications for future research. This section will detail four recommendations: 1) a longitudinal study; 2) purposeful sampling of minority groups; 3) comparative study in different cultures; and 4) recruiting student subjects to investigate relationship between teachers' beliefs and resultant students' performance.

One way to better understand teachers' beliefs, and the impact of these beliefs on student learning is to study the relationship between beliefs and practices over a sufficient period of time, because beliefs are shaped and reshaped over time via complex interaction in a personal, cultural, political and organizational milieu. Hence, a longitudinal study is recommended.

Another way to ensure a representative sample would be to increase the number of teachers from minorities. For example, the present study hints that the "Others" ethnic group which consisted of Mongolian, Xibo and Manchu ethnicities were statistically significantly different from the other ethnicities. However, the sample size of this group was very small, with only 11 participants. Therefore sampling more participants from these ethnicities could be valuable for future research.

A third recommendation for future research is to explore teachers' beliefs and their associated practices in additional countries that have cultural value systems and political systems that differ from both the U.S. and China. Much of the existing research on teachers' beliefs and practices focuses on teachers' personal and political frame factors rather than cultural and organizational frame factors. This study reveals that political and organizational frame factors may suppress personal frame factors under certain political circumstances. Hence, more inquiries in different cultural and organizational settings are recommended to continue to "make familiar things strange", and to offer opportunities for a more detailed comparative study.

The final thread of inquiry could involve student participants to assess more directly the impact of teachers' beliefs and expectations on student learning. Examining how students think about their teachers' beliefs and expectations, what they believe the impact of these beliefs and expectations on them and their learning is important in helping us develop a more complete understanding of the whole activity system.

The present study has explored different mental models of teachers in different cultural and political systems, aiming to help teachers rethink their beliefs and practices. It has set out to investigate the practical means by which aspects of Cultural and Historical Activity Theory (CHAT) can be used to inform research and practice with regard to teachers' beliefs and the associated instructional practices. This dissertation proposes that the CHAT fulfils a pragmatic vacuum to better understand, in different cultural and political systems, why teachers believe what they believe, and how these beliefs are associated with specific teaching practices. The understanding of correlations between teachers' beliefs and the associated instructional practices might have potential to significantly affect teacher preparation and professional development.

References

Ballone, L. & Czerniak, C. (2001). "Teachers' beliefs about accommodating students' learning styles in science classes", *Electronic Journal of Science Education*, Vol. 6, No. 2.

Banks, J., Cochran-Smith, M., Moll, L., Richert, A., Zeichner, K., LePage, P., Darling-Hammond, L., Duffy, H., & McDonald, M. (2005). Teaching diverse learners. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 232-274). San Francisco: Jossey-Bass.

Bartolome, L. (2002). Creating an equal playing field: teachers as advocators, border crossers, and cultural brokers. In Z. F. Beykont (Eds.), *The power of culture: Teaching across language difference* (pp. 167-191). Cambridge, MA: Harvard Education Publishing Group.

Baron, R., Tom, D. & Cooper, H. (1985). Social class, race and teacher expectation. In J.B. Dusek (Eds.) *Teacher expectancies*. Hillsdale, NJ: Lawence Erlbaum.

Bjørke, S. (2004). The concepts of Communities of Practice, Activity Theory and implications for Distributed Learning. Retrieved November 11, 2009 from http://www.gvu.unu.edu/docs/The%20concepts%20of%20Communities%20of%20Practice,%20Activity%20Theory%20and%20implications%20for%20Distributed%20Learning.doc

Brown, E & Smart, R. (2007). Racial Differences in Civic Participation and Charitable Giving: The Confounding Effects of Educational Attainment and Unmeasured Ability. *Review of Black Political Economy, 34*, 259.

Byrnes, D., Kiger, G., & Manning, L. (1997). Teachers' attitudes about language diversity. *Teaching and Teacher Education*, 13 (6), 637-644.

Cai, J. (2000). Mathematical thinking involved in U.S. and Chinese students' solving process-constrained and process-open problems. *Mathematical Thinking and Learning*, 2, 309-340.

Cai, J., & Wang, T. (2006). U.S. and Chinese Teachers' Conceptions and Constructions of Representations: A Case of Teaching Ratio Concept. *International Journal of Science and Mathematics Education, 4*(1), 145-186.

Carney, S. (2008). Learner-Centred Pedagogy in Tibet: International Education Reform in a Local Context. *Comparative Education, 44*(1), 39-55.

Casteel, C. (1998). Teacher-student interactions and race in integrated classrooms. *Journal of Educational Research, 92*, 115-120

Chao, R. (1996). Chinese and European American Mothers' Beliefs about the Role of Parenting in Children's School Success. *Journal of Cross-Cultural Psychology*. 27 (4), 403-23.

Chen, Y. (2004). Uyghur students in a Chinese boarding school: Social recapitalization as a response to ethnic integration. Unpublished doctoral dissertation, University of Hong Kong.

Chen, C. & Stevenson, H. W. (1989). Homework: A cross-cultural examination. *Child Development, 60*, 551-561.

Chen, Y. (2008). *Muslim Uyghur students in a Chinese boarding school: Social recapitalization as a response to ethnic integration*. Laham, MD: Lexington Books.

Chi, M.T.H. (2008). Three types of conceptual change: Belief revision, mental model transformation, and categorical shift. In S. Vosniadou (Ed.), *Handbook of research on conceptual change,* 61-82. Hillsdale, NJ: Erlbaum.

Chinese State Council. (2003). *Decisions to Further Strengthen Rural Education*. Doc. #19

Chou, Y.C. (2008). Exploring the Reflection of Teachers' Beliefs about Reading Theories and Strategies on Their Classroom Practices. *Feng Chia Journal of Humanities and Social Sciences,* 16,183-216.

Christensen, L. & Karp, S. (2003). (Eds.) *Rethinking school reform: Views from the classroom*. Milwaukee, WI: Rethinking Schools, Ltd.

Clift, R. T., & Brady, P. (2005). Research on methods courses and field experiences. In M. Cochran-Smith & K. M. Zeichner (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 309-424). Mahwah, NJ: Larwrence Earlbaum Associates, Publishers.

Cohen, D. & Ball, D. (1990). Relationship between policy and practice: A commentary. *Educational Evaluation and Policy Analysis,* 12 (3), 331-338

Cohen, D. (1990). A Revolution in One Classroom: The case of Mrs. Oublier. *Educational Evaluation and Policy Analysis*, 12 (3), 311-329

Cohen, D. & Ball, D. (1990). Policy and practice: An overview. *Educational Evaluation and Policy Analysis*, 12 (3), 233-239

Cole, M. & Engeström, R. (1993). A cultural-historical approach to distributed cognition. In G. Salomon (Eds.), *Distributed cognitions* (pp. 1-46). New York: Cambridge University Press.

Correa, C., Perry, M., Sims, L., Miller, K. & Fang, G. (2008). Connected and culturally embedded beliefs: Chinese and US teachers talk about how their students best learn mathematics. *Teaching and Teacher Education***,** 24 (1), 140-153

Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed method approaches*. Thousand Oaks, Calif: Sage Publications.

Creswell, J, & Plano. V. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, Calif: SAGE Publications.

Cuban, L. (1990). Reforming again, again, and again. *Educational Research*, Vol. 19, No. 1, pp. 3-13.

Cummings, W. & Altbach, P. (1997). "Introduction", in W. Cummings, & P. Altbach. (Eds.). *The challenge of eastern Asian education: Lessons for America*. Albany: State University of New York Press.

Darling-Hammond, L., & McLaughlin, M. W. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan, 76(*8), 597-602.

Darling-Hammond, L., & Bransford, J. (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco, CA: Jossey-Bass.

de Oliveira, L. & Athanases, S. (2007). Graduates' Reports of Advocating for English Language Learners, *Journal of Teacher Education,* 58 (3); 202-215

Dee, T. (2005). “A Teacher Like Me: Does Race, Ethnicity or Gender Matter?” *American Economic Review*, 95(2), 158-165.

Deemer, S. (2004). Classroom and orientation in high school classrooms: Revealing links between teacher beliefs and classroom environment. *Educational Research*. 46 (1), 73-90

Dennis, B. (2010). Introduction. *Ethnography and Education, 5*, 2.

Diamond, J., Randolph, A. & Spillane, J. (2004). Teachers’ expectations and sense of responsibility for student learning: The importance of race, class, and organizational habitus. *Anthropology & Education Quarterly*, 35(1): 75-98

Ding, M., Li, Y., Li, X., & Kulm, G. (2008). Chinese Teachers' Perceptions of Students' Classroom Misbehaviour. *Educational Psychology*, *28(*3), 305-324.

Dong, Y. R. (2004). Preparing secondary subject area teachers to teach linguistically and culturally diverse students. *The Clearing House*, 77(5), 202-206

Duncan, A. (October, 2009). *Teacher Preparation: Reforming the Uncertain Profession*. Address given by Secretary of Education Arne Duncan at Teachers College, Columbia University.

Duster, T. (2003). *Backdoor to eugenics* (2nd ed.). New York: Routledge.

Dwyer, D., Ringstaff, C. & Sandholtz, J. (1991). Changes in teachers’ beliefs and practice in technology-rich classrooms. *Educational Leadership*. (May), 45-52.

Economic Policy Institute (2008). *A broader, bolder approach to education*. Statement published by a Taskforce sponsored by the Economic Policy Institute. Retrieved November 21, 2009, from www.boldapproach.org.

Edwards, A., Gilroy, P., Hartley, D., et al. (2002). *Rethinking teacher education: Collaborative responses to uncertainty.* London: Routledge Falmer.

Ellis, V., Edwards, A., & Smagorinsky, P. (2010). *Cultural-historical perspectives on teacher education and development: Learning teaching*. New York: Routledge.

Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research.* Helsinki, Finland: Orienta-Konsultit.

Engeström, Y. (1993). Developmental students of work as a testbench of activity theory: The case of primary care medical practice. In S. Chaiklin & J. Lave (Eds.), *Understanding practice: Perspectives on activity and context.* (pp. 64-103). Cambridge, UK: Cambridge University Press.

Engeström, Y. (1994). *Training for change: New approaches to instruction and learning in working life*. Geneva: International Labor Office.

Engeström, Y. (1999a). Activity theory and individual and social transformation. In Y. Engeström, R. Meittinen, & R.-L. Punamaki (Eds.), *Perspectives on activity theory*. (pp. 19-38), Cambridge, UK: Cambridge University Press.

Engeström, Y. (1999c). Innovative learning in work teams: Analyzing cycles of knowledge creation in practice. In Y. Engeström, R. Miettinen, & R. –L. Punamaki (Eds.), *Perspectives on activity theory.* New York: Cambridge University Press.

Engeström, Y. (2009). The future of activity theory. In A. Sannino, H. Daniels, & K. Gutierrez (Eds.). *Learning and expanding with activity theory*. New York: Cambridge University Press.

Farkas, G., Grobe, R., Sheehan, D. & Shuan, Y. (1990). Cultural resources and school success: gender, ethnicity, and poverty groups within an urban school district. *American Sociological Review*, 55, 127-142

Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational Research , 38*(1), 47-65.

Ferguson, R. (2003). Teachers' perceptions and expectations and the Black-White test score gap. *Urban Education*, 38*(4)*, 460-507.

Flores, B. (2001). Bilingual Education Teachers' Beliefs and Their Relation to Self-Reported Practices. *Bilingual Research Journal.* 25 (3), 275-99.

Foot, K. (2001). Cultural-historical activity theory as practical theory: Illuminating the development of a conflict monitoring network. *Communication Theory*, 11*(1)*, 56-83.

Foroohar, R. (2010). The World's Their Oyster. *Newsweek, 156*, 16, 18.

Fraga, L., Meier, K. & England, R. (1986). Hispanic Americans and educational policy: Limits to equal access. *The Journal of Politics*, 48(4), 850-876

Fraser. J. (2007). *Preparing America's teachers: A history.* New York: Teacher College Press.

Fredrickson, G. (1981) White Supremacy. Oxford, U.K.: Oxford University Press.

Fullan, M. G. (1999). *Change Forces: The sequel*. Philadelphia, PA: Falmer Press.

Furlong, J., Cochran-Smith, M. & Brennan, M. (2008).Editorial. *Teachers & Teaching, 14(*4), 265-269

Gallimore, R. & Goldenberg, C. (2001). Analyzing cultural models and settings to connect minority achievement and school improvement research. *Educational Psychologist*, 36, 45–56.

Garcia, J. and Pugh, S. (1992). Multicultural education in teacher preparation programs: A political or an educational concept? *Phi Delta Kappan*, 74, 214–219.

Garcia-Nevarez, A., Stafford, M. & Aria, B. (2005). Arizona elementary teachers' attitudes toward English language learners and the use of Spanish in classroom instruction. *Bilingual Research Journal, 29*(2), 295-317

Gates, P. (2001). Mathematics Teacher Belief System: Exploring the Social Foundation. In M. Heuvel-Panhuizen (Ed.) *Proceedings of the 25th Conference of the International Group for the Psychology of Mathematics Education. 3, 17-24.*

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York: Teachers College Press.

Gay, G. (2010). Acting on Beliefs in Teacher Education for Cultural Diversity. *Journal of Teacher Education, 61,* 143.

Greetz, C. (1973). *The interpretation of cultures; Selected essays*. New York: Basic Books.

Griffiths, T., Gore, J. & Ladwig, J. (2006) Teachers' fundamental beliefs, commitment to reform, and the quality of pedagogy. Paper presented at Australian Association for Research in Education Annual Conference, November 26-30, 2006. Retrieved June 17, 2009 from http://www.aare.edu.au/06pap/gri06386.pdf

Grossman, P. L., Smagorinsky, P., & Valencia, S. W. (1999). Appropriating tools for teaching English: A theoretical framework for research on learning to teach. *American Journal of Education, 108*, 1-21.

Grossman, P. L., Valencia, S. W., Evans, K., Thompson, C., Martin, S., & Place,N. (2000). Transitions into teaching: Learning to teach writing in teacher education and beyond. *Journal of Literacy Research, 32,* 631-662.

Guan, J., McBride, R., & Xiang, P. (2007). Chinese teachers attitudes toward teaching physical activity and fitness. *Educational Administration Abstracts, 42,* 3.)

Gu, W., & Yawkey, T. D. (2010). Working with Parents and Family: Factors that Influence Chinese Teachers' Attitudes toward Parent Involvement. *Journal of Instructional Psychology, 37,* 2.)

Hall, K. D. (2002). *Lives in transition: Sikh youth as British citizens*. Philadelphia: University of Pennsylvania Press.

Hess, F. & Leal, D. (1997). Minority teachers, minority students, and college matriculations: A new look at the role-modeling hypothesis. *Policy Studies Journal, 25*(2), 235-248

Hong, Y. (2010). Home Language and Educational Attainments of Ethnic Minorities in Western China. *Chinese Education & Society, 43(1),* 24-35.

Howard, T. C., & Aleman, G. R. (2008). Teacher capacity for diverse learners: What do teachers need to know? In *Handbook of research on teacher education: Enduring questions in changing contexts* (Third Edition, pp. 157-174). New York: Routledge & The Association of Teacher Educators.

Hui, E. (2001). Hong Kong students' and teachers' beliefs on students' concerns and their causal explanation. *Educational Research, 43(3),* 279-294.

Irvine, J. (1990). *Black students and school failure*. Westport, CT: Praeger.

Jennings, N. (1996). *Interpreting policy in real classrooms: Case studies of state reform and teaching practice*. New York: Teachers College Press.

Jennings, N. (1999). Reform in small places: Examining two rural schools' implementation of state reform. *Journal of Research in Rural Education,* 15*(3),* 127-140.

Johnson, T. S., Smagorinsky, P., Thompson, L., & Fry, P. G. (2003). Learning to teach the five-paragraph theme. *Research in the Teaching of English, 38,* 136-176.

Johnson, M. & Hall, J. (2007). Impact of one science teachers' beliefs on his instructional practice. *Education and Human Development*. 1 (1).

Jussim, L & Harber, K. (2005). Teacher expectations and self-fulfilling prophecies: Knowns and unknowns, resolved and unresolved controversies. *Personality and Social Psychology Review*, 9(2), 131-155.

Kaptelinin, V. & Nardi, B. (2006). *Acting with technology: Activity theory and interaction design.* Cambridge, MA: The MIT Press.

Karaagaç, K. & Threlfall, J. (2004). The tension between teacher beliefs and teacher practice: The impact of the work setting. *Psychology of Mathematics Education,* 3, 137–144

Koichu, B., Berman, A. & Moore, M. (2003). Changing teachers' beliefs about students' heuristics in problem solving. *Proceedings of the 3rd Conference of the European Society for Research in Mathematics Education*, Bellaria, Italy.

Kolis, M., & Dunlap, W. P. (2004). The knowledge of teaching: The K3P3 model. *Reading Improvement*, 41(2), 97-107.

Kwok, D. C. & Lytton, H. (1996). Perceptions of mathematics ability versus actual mathematics performance: Canadian and Hong Kong Chinese children. *British Journal of Educational Psychology*, 66, 209-222.

Ladson-Billings, G. (1994). *The dreamkeepers: Successful teachers of African American children*. San Francisco: Jossey-Bass.

Lee, J. & Oxelson, E. (2006). "It's not my job": K-12 teacher attitudes toward students' heritage language maintenance. *Bilingual Research Journal*, 30(2), 453-477.

Leont'ev, A. A. (1974). *Psycholinguistik und Sprachunterricht* [Psycholinguistics and language education] (G. Schulz & G. Seyfahrt, Trans.). Stuttgart, Germany: Kohlhammer.

Leont'ev, A. N. (1978). *Activity, consciousness and personality*. Englewood Cliffs, NJ: Prentice Hall.

Leont'ev, A. N. (1981). *Problems of the development of the mind*. Moscow, Soviet Union: Progress.

Li, J. (2002). Learning models in different cultures. *New directions for child and adolescent development*. No. 96. Wiley Periodicals. Inc.

Li, J. (2003). U.S. and Chinese beliefs about learning. *Journal of educational psychology*. 95*(2)*, 258

Li, X. (2005). An Analysis of Chinese EFL Learners' Beliefs about the Role of Rote Learning in Vocabulary Learning Strategies. *Asian Efl Journal, 7,* 4.)

Li, X., & University of Sunderland. (2004). *An analysis of Chinese EFL learners' beliefs about the role of rote learning in vocabulary learning strategies*. Sunderland: University of Sunderland. Unpublished doctoral Dissertation.

Lindquist, M. (2001). NAEP, TIMSS, and PSSM: Entangled Influences. *School Science and Mathematics*. 101, 7-17.

Lipman, P. (1998). *Race, class and power in school restructuring.* Albany: State University of New York Press.

Liu, P., & Qi, C. (2006). Examining Teacher Preparation in P.R. China and the U.S.: A Preliminary Comparative Study. *International Education, 35(2)*, 5-26.

Liu, M., Hu, W., Jiannong, S., & Adey, P. (2010). Gender Stereotyping and Affective Attitudes Towards Science in Chinese Secondary School Students. *International Journal of Science Education, 32(3),* 379-395

Love, A. & Kruger, A. (2005). Teachers' beliefs and student achievement in urban schools serving African American students. *Journal of Educational Research,* 99(2), 87-98

Lucas, T. & Grinberg, J. (2008). Responding to the linguistic reality of mainstream classrooms: Preparing all teachers to teach English language learners. In M. Cochran-Smith, S. Feiman-Nemser & D. McIntyre (Eds.), *Handbook of research*

on teacher education: Enduring questions in changing contexts. New York: Routledge.

Luria, A. R. (1981). *Language and cognition*. New York: John Wiley.

Ma, L. (1999). *Knowing and teaching elementary mathematics: Teachers' understanding of fundamental mathematics in China and the United States*. Mahwah, NJ: Lawrence Erlbaum.

Ma, R. (2009). The Development of Minority Education and the Practice of Bilingual Education in Xinjiang Uyghur Autonomous Region. *Frontiers of Education in China.* 4 (2), 188-251.

McDiarmid, W. & Price, J. (1990). Prospective teachers' views of diverse learners: A study of the participants in the ABCD Project. East Lansing, MI: *National Center for Research on Teacher Learning.*

McKenzie, P. & Santiago, P. (2005). *Teachers matter: attracting, developing and retaining effective teachers*. Paris: Organization for Economic Co-operation and Development

McMullen, M., Elicker, J., Wang, J., Erdiller, Z., Lee, S.-M., Lin, C.-H., & Sun, P.-Y. (2005). Comparing Beliefs about Appropriate Practice among Early Childhood Education and Care Professionals from the U.S., China, Taiwan, Korea and Turkey. *Early Childhood Research Quarterly, 20(4),* 451-464.

Meadows, D. (2008). *Thinking in Systems: A primer*. VT: Chelsea Green Publishing Company.

Merriam, S. B. (1998). *Qualitative research and case study applications in education.* San Francisco: Jossey Bass.

Mertens, M. (2010). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Los Angeles: Sage.

Miles, M. B. & Huberman, A. M. (1994). *Qualitative data analysis; an expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage

MOE. 2001. *Guidelines for curriculum reform of basic education, Document 17.* Beijing: Ministry of Education, Peoples' Republic of China.

Monkman, K., MacGillivray, L., & Leyva, C. (2003). Literacy on three planes: Infusing social justice into and culture into classroom instruction. *Bilingual Research Journal, 27 (*2), 245-58.

Morecroft, J. & Sterman, J. (2000). *Modeling for Learning Organizations*. Productivity Press.

Morse, J. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40, 120-123

Mwanza, D. & Engeström, Y. (2003). *Pedagogical adeptness in the design of e-learning environments: Experiences from Lab@Future project*. Paper presented at the E-Learning 2003 International Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education, Phoenix, AR. U.S.A.

National Science Foundation (NSF). (2010). Foreign Science and Engineering Students in the United States. Retrieved on December 1, 2010 from http://www.nsf.gov/statistics/infbrief/nsf10324/nsf10324.pdf

Naples, N. A. (1996). A feminist revisiting of the insider/outsider debate: The outsider phenomenon in rural Iowa. *Qualitative Sociology*, 19*(1)*, 83-106

Naples, N. A. (2003). *Feminism and method: Ethnography, discourse analysis, and activist research*. New York: Routledge.

Nathan, M. and Koedinger, R. (2000). Teachers' and researchers' beliefs about the development of algebraic reasoning. *Journal for Research in Mathematical Education*, 31(2), 168-190.

National Center for Education Statistics. (2002). *Selected characteristics of students, teachers, parent participation, and programs and services in traditional public and public charter elementary and secondary schools: 1999-2002*. Retrieved September 16, 2004 from http://nces.ed.gov/

Niu, W. (2007). Western Influences on Chinese Educational Testing. *Comparative Education, 43(1)*, 71-91.

Noguera, P. A. (2008). The 2007 Charles H. Thompson Lecture-Colloquium Presentation: Creating Schools Where Race Does Not Predict Achievement: The Role and Significance of Race in the Racial Achievement Gap. *Journal of Negro Education, 77(2)*, 90-103.

Oakes, J. (1985). *Keeping track: How schools structure inequality*. New Haven, CT: Yale University Press

Oakes, J. (September, 1986). Keeping Track, Part 1: The policy and practice of curriculum inequality. *Phi Delta Kappan*, 68*(1)*, 12-17.

Oakes, J. (October, 1986). Keeping Track, Part 2: Curriculum Inequality and School Reform. *Phi Delta Kappan*, 68*(2)*, 148-154.

Oakes, J. (1990). *Multiplying inequalities: The effects of race, social class and tracking on opportunities to learn math and science*. Santa Monica, CA: RAND Corporation.

Oakes, J., Wells, A., Jones, M., & Datnow, A. (1997). Detracking: The social construction of ability, cultural policies and resistance to reform. *Teachers College Record*, 98, 482-510

Oakes, J. Joseph, R. & Muir, K. (2004). Access and achievement in mathematics and science: Inequalities that endure and change. In J.A. Banks & C.M. Banks (Eds.), *Handbook of Research on Multicultural Education* (2nd Edition), 69-90. San Francisco, CA: Jossey-Bass.

Page, R. (1991). *Lower-track classrooms: A curricular and cultural perspective*. New York: Teachers College Press.

Pang, V. & Sablan, V. (1998). "Teacher Efficacy: How Do Teachers Feel About Their Ability to Teach African American Students." In M. Dilworth (Ed.), *Being Responsive to Cultural Differences: How Teachers Learn.* Washington, D.C.: American Association of Colleges for Teacher Education, 39-58.

Parker, W. J., & John, T. A. (2010). Preserving a space for cross-cultural collaborations: an account of insider/outsider issues. *Ethnography and Education, 5*, 2, 175-191.

Pearson, S., & Ralph, S. (2007). The identity of SENCos: insights through images. *Journal of Research in Special Educational Needs*, 7(1), 36–45.

Pearson, S. (2009). Using activity theory to understand prospective teachers' attitudes to and construction of special educational needs and/or disabilities. *Teaching and Teacher Education, 25(4),* 559-568.

Perry, T., Steele, C. & Hilliard III, A. (2003). *Young, Gifted, and Black: Promoting high achievement among African-American students.* Boston: Beacon Press.

Peske, H. & Haycock, K. (2006). *Teaching inequality: How poor minority students are shortchanged on teacher quality.* Washington DC: Education Trust.

Peterson, P. (1988). Teaching for higher order thinking in mathematics: The challenge for the next decades: In: D. A. Grows, T. J. Cooney (Eds.), *Perspective on research on effective mathematical learning,* (Vol. 1, pp. 2-26). Reston, VA: Lawrence Erlbaum Associates.

Peterson, P. (1990). Doing more in the same amount of time: Cathy Swift. *Educational Evaluation and Policy Analysis,* 12 (3), 261-280

Poetter, T. S. (2007). Teachers Critique the Curriculum: Frame Factors at Play. *Kappa Delta Pi Record, 43(2),* 82-87.

Postiglione, G. (2009). The education of ethnic minority groups in China. In J. Banks (Eds.), *The Routledge international companion to multicultural education*, 501-511. New York: Routledge.

Posner, G. J. (2004). *Analyzing the curriculum*. 3rd ed. New York: McGraw-Hill.

Redmiles, D. (2002). Introduction to the Special Issue on Activity Theory and the Practice of Design, Computer Supported Cooperative Work (CSCW), 11, 1-2

Reeves, J. R. (2006). Secondary Teacher Attitudes toward Including English-Language Learners in Mainstream Classrooms. *Journal of Educational Research.* 99 (3), 131-142.

Richard, J., Gallo, P. & Renandya, W. (2001) Exploring teachers' beliefs and the processes of changing. *The PAC Journal, 1*(1), 41-62

Richards, J. & Farrell, T. (2005). *Professional Development for Language Teachers: Strategies for Teacher Learning*. London : Cambridge University Press

Roth, W., Tobin, K., Elmesky, R., Carambo, C., McKnight, Y. & Beers, J. (2004). Re/making Identities in the Praxis of Urban Schooling: A Cultural Historical Perspective. *Mind, Culture, and Activity, 11*(1), 48-69.

Roth, W. & Lee, Y. (2007). "Vygotsky's neglected legacy": Cultural-historical activity theory. *Review of Educational Research.* 2, 186-232.

Rubie, C. (2003). Expecting the best: instructional practices, teacher beliefs and student outcomes. Unpublished dissertation. http://researchspace.auckland.ac.nz/docs/uoa-docs/rights.htm

Sang, G., S., Valcke, M., van Braak, J., & Tondeur, J. (2009). Investigating teachers' educational beliefs in Chinese primary schools: socioeconomic and geographical perspectives. *Asia-Pacific Journal of Teacher Education*, *37*(4), 363-377.

Schanbacher, K. A. (2009). *An Intergenerational Study of the Mathematics Attitudes of Preservice Women Teachers and Their Mothers*.

Schmidt, W., McKnight, C., Cogan, L. Jakwerth, P. & Houang, R. (1999). *Facing the consequence*. Boston: Kluwer Academic Publishers.

Schmidt, W. (2001). Frontline: testing our schools: interviews by PBS on April 26, 2001. Retrieved May 17, 2009 from http://www.pbs.org/wgbh/pages/frontline/shows/schools/interviews/schmidt.html

Schmidt, W., Houang, R. & Cogan, L. (2002). A coherent curriculum: The case of mathematics. *American Educator*, summer

Schunk, D. H. (2009). *Learning theories: An educational perspective*. Upper Saddle River, N.J: Pearson Prentice Hall.

Senge, P. (2006). *The Fifth Discipline: The Art and Practice of the Learning Organization*. (2nd ed.). Broadway Business

Sharon, S. N. N., & Rao, N. (2010). Chinese Number Words, Culture, and Mathematics Learning. *Review of Educational Research, 80(2)*, 180-206.

Shulman, L. S., & Shulman, J. (2004). How and what teachers learn: A shifting perspective. *Journal of Curriculum Studies, 36(2)*, 257-271.

Sleeter, C. (1995). White preservice students and multicultural education coursework. In J. M. Larkin and C. E. Sleeter (eds.), *Developing Multicultural Teacher Education Curriculum* (pp.17–29). New York: State University of New York Press.

Sleeter, C. (2001). Preparing teachers for culturally diverse schools: Research and the overwhelming presence of whiteness. *Journal of Teacher Education, 52(2)*, 94-106.

Sleeter, C. (2008). Preparing White teachers for diverse students. In M. Cochran-Smith, S. Feiman-Nemser & D. McIntyre (Eds.), *Handbook of research on teacher education: Enduring questions in changing contexts*. New York: Routledge.

Smagorinsky, P., Lakly, A., & Johnson, T. S. (2002). Acquiescence, accommodation, and resistance in learning to teach within a prescribed curriculum. *English Education, 34*, 187-213.

Smith, L. (2002) A Tutorial on Principal Components Analysis. Retrieved on November 5, 2010 from http://www.google.com/#sclient=psy&hl=en&q=principal+component+analysis&aq=0s&aqi=g-s4g-o1&aql=&oq=principle+com&gs_rfai=&pbx=1&fp=5d4068fa3c3827d8

Smith, R. (2000). The Influence of Teacher Background on the Inclusion of Multicultural Education: A Case Study of Two Contrasts. *Urban Review.* 32 (2), 155-76.

Song, K. H. (2006). Urban Teachers' Beliefs on Teaching, Learning, and Students: A Pilot Study in the United States of America. *Education and Urban Society.* 38 (4), 481-499.

Spillane, J & Jennings, N. (1997). Aligned instructional policy and ambitious pedagogy: Exploring instructional reform from the classroom perspective. *Teachers College Record*, 98, 449-81.

Sterman, J. (2000). *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Irwin /McGraw-Hill.

Stevens, J. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates

Stevenson, H. & Lee, S.Y. (1990). Contexts of achievement: A study of American, Chinese, and Japanese children. *Monographs of the society for research in child development*, 55(1-2), No. 221

Stevenson, H. & Stigler, J. (1992). *The learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education*. New York: Summit Books (Simon & Schuster Inc.)

Stone, J. & Varghese, M. (2009). Rethinking the Relationship Between Social Justice and Content Area Learning in Elementary Teacher Education, Conference presentations.

Stringer, E. (2004). *Action research in education*. New Jersey: Pearson/Merrill Prentice Hall.

Subedi, B. (2006). Preservice Teachers' Beliefs and Practices: Religion and Religious Diversity. *Equity & Excellence in Education, 39(3),* 227-238.

Tashakkori, A. & Teddlie, C. (1998) *Mixed methodology: combining qualitative and quantitative approaches* (Thousand Oaks, Sage).

Terman (1923), *Intelligence tests and schools*, Hillsdale, NJ: World Book Company.

Toomela, A. (2000). Activity theory is a dead end for cultural psychology. *Culture and Psychology*, 6, 353-364

Toomela, A. (2008). Activity theory is a dead end for methodological thinking in cultural psychology too. *Culture and Psychology*, 14, 289-303.

Tong, C.-W., & Chu, K.-W. (2005). Teachers' Perceptions on Project Learning Implementation in Shanghai and Hong Kong: A Comparative Study (in Chinese). *Jiao Yu Xue Bao = Education Journal, 33,* 207-220.

Torff, B., & Warburton, E. (2005). Assessment of teachers' beliefs about classroom use of critical-thinking activities. *Educational and Psychological Measurement, 65(1),* 155-179.

Tsui, M. (2007). Gender and Mathematics Achievement in China and the United States. *Gender Issues, 24(*3), 1-11.

UNESCO. (2001). *Teacher Education through Distance Learning*. France

University of Missouri study, the. (2008). "Low-income US children less likely to have access to qualified teachers." Retrieved December 5, 2009 from www.physorg.com/news120314664.html

U.S. Census Bureau. 2008. Retrieved from http://www.census.gov/

U.S. Census Bureau. 2009. Retrieved from http://www.census.gov/population/www/projections/usinterimproj/

Varghese, M. & Jenkins, S. (2005). Challenges for ESL teacher professionalization in the U.S.: A case study. *Intercultural Education, 16*(1), 85-95.

Valencia, S., Martin, S., Place N. & Grossman, P. (2009). Complex interactions in student teaching: Lost opportunities for learning. *Journal of Teacher Education*, 60 (3), 304-322

Venkat, H., & Adler, J. (2008). Expanding the foci of activity theory: accessing the broader contexts and experiences of mathematics education reform. *Educational Review, 60(*2), 127-140.

Villegas, A. & Lucas, T. (2002). *Educating culturally responsive teachers: A coherent approach*: State University of New York Press.

Villegas, A. & Davis, D. (2008). Preparing teachers of color to confront racial/ethnic disparities in educational outcomes. In M. Cochran-Smith, S. Feiman-Nemser & D.

McIntyre (Eds.), *Handbook of research on teacher education: Enduring questions in changing contexts*. New York: Routledge.

Villegas, A. & Irvine, J. (2010). Diversifying the teaching force: An examination of major arguments. *Urban Review, 42*, 175-192

Villenas, S. (1996). The colonizer/colonized Chicana ethnographer: Identity, marginalization, and co-optation in the field. *Harvard Educational Review* 66(4), 711-731.

Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.

Wang, J., Elicker, J., McMullen, M., & Mao, S. (2008). Chinese and American Preschool Teachers' Beliefs about Early Childhood Curriculum. *Early Child Development and Care, 178*(3), 227-249

Wang, J. (2006b). "素质教育的实施与民族地区教育发展 (Implementation of all-Around Development Education (Quality Education) and Educational Development in Minority Areas)." Lanzhou, China: Northwest Normal University Center for the Educational Development of Minorities, Retrieved November 17, 2010 from http://www.nwnu.edu.cn/mzjy/chengg/cg9.htm.

Walker, A., Shafer, J. & Iims, M. (2004). "Not in my classroom": Teacher attitudes toward English learners in the mainstream classroom. *NABE Journal of Research and Practice, 2*(1), 130-154

Warren, S. (2002). Stories from the classroom: How expectations and efficacy of diverse teachers affect the academic performance of children in poor urban schools. *Educational Horizons*, 80(3), 109-116.

Wilson, S. (1990). A conflict of interests: The case of Mark Black. *Educational Evaluation and Policy Analysis*, 12 (3), 293-310

Wilson, S. (2003). *California dreaming: Reforming mathematics education*. New Haven [Conn.]: Yale University Press.

Williams, B. (2001). *Closing the achievement gap*. Paper presented at the workshop sponsored by the Missouri Department of Elementary and Secondary Education, St. Louis.

Wolcott, H. F. (1997). Ethnographic research in education. In R. M. Jaeger (Ed.), *Complimentary methods for research in education* (2nd ed., p 327-353). Washington D.C.: American Educational Research Association.

World Bank, The. (2010) "Working for a world free of poverty" Retrieved dated August 29, 2010 from http://data.worldbank.org/indicator/SE.PRM.ENRL.TC.ZS

Wu, X. & Treiman, D. (2004). The household registration system and social stratification in China. *Demography*. 41(2), 363-368

Yamagata-Lynch, L. C., & Haudenschild, M. T. (2009). Using Activity Systems Analysis to Identify Inner Contradictions in Teacher Professional Development. *Teaching and Teacher Education: an International Journal of Research and Studies,* 25 (3), 507-517.

Yang, S. Y., & Sternberg, R. J. (1997). "Taiwanese Chinese Achievement Motivation." In M. Band (Ed.), *The Handbook of Chinese Psychology*. New York: Oxford University Press. Ball, D. (1990). Reflections and deflections of policy: The case of Carol Turner. *Educational Evaluation and Policy Analysis*, 12 (3), 247-259

You, Y. (2007). A Deep Reflection on the "Key School System" in Basic Education in China. *Frontiers of Education in China.* 2(2), 229-239.

Youngs, C. & Youngs, G. (2001). Predictors of mainstream teachers' attitudes toward ESL students, *TESOL Quarterly*, 35(1), 97-120

Zeichner, K. & Hoeft, K. (1996). Teacher socialization for cultural diversity. In J. Sikula, T. J. Buttery, & E. Guyton (Eds.), *Handbook of research on teacher education* (2nd ed., pp. 525-547). New York: Macmillan.

Zeichner, K. (1996a). *Educating teachers for cultural diversity*. In K. Zeichner, S. Melnick & M. L. Gomez (Eds.), *Currents of reform in preservice teacher education* (pp. 133-175. New York: Teachers College Press

Zeichner, K. (2003). Pedagogy, knowledge, and teacher preparation. In B. Williams (Eds.), *Closing the achievement gap: A vision of changing beliefs and practices,* (pp. 99-114). VA: ASCD

Zeichner, K. (2009). *Teacher education and the struggle for social justice*. New York: Routledge

Zeichner, K. (2010a) Rethinking the connections between campus courses and field experiences in college and university-based teacher education. *Journal of Teacher Education, 89*(11), 89-99.

Zhang, S., Shi, Q., Luo, X., & Ma, X. (2008). Chinese Pre-Service Teachers' Perceptions of Effects of Teacher Self-Disclosure. *New Horizons in Education, 56,* 1, 30-42.

Zhang, S., Shi, Q. & Hao, S. (2009). The appropriateness of teacher self-disclosure: a comparative study of China and the USA. *Journal of Education for Teaching, 35*(3), 225-239.

Zhao, Z. (2010). Trilingual Education for Ethnic Minorities. *Chinese Education & Society, 43,* 1, 70-81.

Zheng, R. (2008). Chinese college entrance examination: Review of discussions and the value orientation of reforms. *Frontiers of Education in China, 3,* 1, 137-148.

Zohar, A., Degani, A., & Vaaknin, E. (2001). Teachers' beliefs about low-achieving students and high order thinking. *Teaching and Teacher Education,* 17, 469-485

Appendix A: Projected Population of the United States, by Race and Hispanic Origin: 2000 to 2050

(In thousands except as indicated. As of July 1. Resident population.)						
Population or percent and race or Hispanic origin	**2000**	**2010**	**2020**	**2030**	**2040**	**2050**
POPULATION						
TOTAL	**282,125**	**308,936**	**335,805**	**363,584**	**391,946**	**419,854**
White alone	228,548	244,995	260,629	275,731	289,690	302,626
Black alone	35,818	40,454	45,365	50,442	55,876	61,361
Asian Alone	10,684	14,241	17,988	22,580	27,992	33,430
All other races *	7,075	9,246	11,822	14,831	18,388	22,437
Hispanic (of any race)	35,622	47,756	59,756	73,055	87,585	102,560
White alone, not Hispanic	195,729	201,112	205,936	209,176	210,331	210,283
PERCENT OF TOTAL POPULATION						
TOTAL	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
White alone	81.0	79.3	77.6	75.8	73.9	72.1
Black alone	12.7	13.1	13.5	13.9	14.3	14.6
Asian Alone	3.8	4.6	5.4	6.2	7.1	8.0
All other races *	2.5	3.0	3.5	4.1	4.7	5.3
Hispanic (of any race)	12.6	15.5	17.8	20.1	22.3	24.4
White alone, not Hispanic	69.4	65.1	61.3	57.5	53.7	50.1
Footnotes:						
* Includes American Indian and Alaska Native alone, Native Hawaiian and Other Pacific Islander alone, and Two or More Races						

Source: U.S. Census Bureau, 2004, "U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin," http://www.census.gov/ipc/www/usinterimproj/

Appendix B: References for Research on Education of Ethnic Minority in China

Adamson, B., & Feng, A. (2009). A comparison of trilingual education policies for ethnic minorities in China. *Compare: A Journal of Comparative and International Education.* 39 (3), 321-333.Bass, C. (1998). *Education in Tibet*. London: Zed Press

Ba, Z. (2009). Using Yugur in local schools: Reflections on China's policies for minority language and education. In M. Zhou and A. M. Hill (Eds.), *Affirmative action in China and the U.S.: A dialogue on inequality and minority education.* N.Y.: Palgrave MacMillan.

Bass, C. (1998). *Education in Tibet*. London: Zed Press

Bradley, D. (2005). Language policy and language endangerment in China. *International Journal of the Sociology of Language*, 173, 1-21.

Carney, S. (2008). Learner-Centred Pedagogy in Tibet: International Education Reform in a Local Context. *Comparative Education, 44*, 1, 39-55.

Chapman, D., Chen, X. Y. & Postiglione, G. (2000). Is pre-service teacher training worth the money? A study of ethnic minority regions in China. *Comparative Education Review*, 44(3), 300-327

Chen, Y. (2008). *Muslim Uyghur students in a Chinese boarding school: Social recapitalization as a response to ethnic integration*. Laham, MD: Lexington Books.

Dai, Y. and Xu, C. (2009). Yunnan's preferential policies in minority education since the 1980s: Retrospect and prospects. In M. Zhou and A. M. Hill (Eds.), *Affirmative action in China and the U.S.: A dialogue on inequality and minority education.* N.Y.: Palgrave MacMillan.

Gao, F. (2007). "Koreanness" as a cultural capital: Ethnic education aspiration of Korean families in Northeast China. In D. A. Bryant, F. Gao, , B. Henning & W. K. Lam (Eds.), *Research studies in education* (Vol. 5, pp. 211-220). Hong Kong: University of Hong Kong Faculty of Education Press

Gao, F. (2008). What it means to be a "model minority": Voices of ethnic Koreans in northeast China. Asian Ethnicity, 9, 55-67

Gelek. (2009). Anthropological field survey on basic education development among Machu Tibetan Nomads. In M. Zhou and A. M. Hill (Eds.), *Affirmative action in China and the U.S.: A dialogue on inequality and minority education.* N.Y.: Palgrave MacMillan.

Gladney, D. (1999). *Muslin Chinese: Ethnic nationalism in the People's Republic*. Cambridge, MA: Council of East Asian Studies and Fellows of Harvard University

Harrell, S. (1990) Ethnicity, Local Interests, and the State: Yi Communities in Southwest China, *Society for Comparative Studies in Society and History*, 32(3), 515-548

Harrell, S. & Ma, E. (1999). Folk theories of success: Where Han aren't always the best. In G. Postiglione (Ed.), *China's national minority education: Culture, schooling, and development*, pp. 213-242

Hansen, M. (1999). Lessons in being Chinese: Minority education and ethnic identity in southwest China. Seattle: University of Washington Press

Hong, Y. (2010). Home Language and Educational Attainments of Ethnic Minorities in Western China. *Chinese Education & Society, 43*, 1, 24-35.

Huang, Y. & R. Boshier. (2006). Hazards ahead? China's Shuang Yu learning village at year four. Paper presented at the *Annual Conference of the Comparative and International Education Society*, 14–18, Honolulu, Hawaii.

Lam, A. (2005). *Language education in China*. Hong Kong: Hong Kong University Press

Ma, R. (2009). The Development of Minority Education and the Practice of Bilingual Education in Xinjiang Uyghur Autonomous Region. *Frontiers of Education in China.* 4 (2), 188-251.

Ma, X. (2009). The relationship between the trade culture of a Hui community and state schooling: A case study of the Hui community in Chaocheng, Shandong province. In M. Zhou and A. M. Hill (Eds.), *Affirmative action in China and the U.S.: A dialogue on inequality and minority education.* N.Y.: Palgrave MacMillan.

Nam, Y. (1996). *A comparative study of Pai Yao and Han Chinese junior secondary school dropouts in Liannan Yao Autonomous Country, Guangdong Province, the People's Republic of China.* Unpublished doctoral dissertation, University of Hong Kong.

Seeberg, V. (2006). Tibetan girls' education: Challenging prevailing theory. In G. Postiglione (Ed.), Education and social change in China: Inequality in a market economy, 75-110

Seeberg, V. (2008). Girls first! Conditions for promoting education in Tibetan areas of China. *Educational Review*, 60(1), 51-68

Trueba, H. & Zou, Y. (1994). *Power in education: The case of Miao university students and its significance for American culture*. Washington, DC: Falmer Press

Tsung, L. (2003). Language policy and minority education in China: The case of the Yi, Naxi, Dai and Tibetan schools in Yunnan. Paper presented at the meeting on Chinese Educational Research, University of Hong Kong

Wang, S.Y. (2007). The failure of education in preparing Tibetans for market participation. *Asian Ethnicity*, 8(2), 131-148

Yu, H. B. (2008). *Schooling and identity among the Naxi*. Unpublished doctoral dissertation, University of Hong Kong

Zhang, L. F., Fu, H. & Jiao, B. (2008). Accounting to Tibetan university students' and teachers' intellectual styles. *Educational Review*, 69(1), 21-37

Zhang, S. (2008). China's Bilingual Education Policy and Current Use of Miao in Schools. *Chinese Education & Society, 41*, 6, 28-36.

Zhao, Z. Z. (2009). *Am I privileged? : Minority Mongol students and cultural recognition in Chinese universities*. Hong Kong: University of Hong Kong

Zhou, M. L. & Sun, H. K. (Eds.) (2004). *Language policy in the People's Republic of China: Theory and practice since 1949*. Norwell, MA: Kluwer Academic Press

Zhou, M., & Hill, A. M. (2009). *Affirmative action in China and the U.S: A dialogue on inequality and minority education*. New York: Palgrave Macmillan.

Appendix C: Population Composition in Xinjiang

Year	Total Population (Year-end)	By Sex			
		Male		Female	
		Population	%	Population	%
1978	1233.01	630.18	51.11	602.83	48.89
1980	1283.24	654.90	51.03	628.34	48.97
1985	1361.14	696.81	51.19	664.33	48.81
1990	1529.16	785.06	51.34	744.10	48.66
1995	1661.35	848.12	51.05	813.23	48.95
1996	1689.29	869.59	51.48	819.70	48.52
1997	1718.08	883.03	51.40	835.05	48.60
1998	1747.35	897.90	51.39	849.45	48.61
1999	1775.00	910.98	51.32	864.02	48.68
2000	1849.41	957.07	51.75	892.34	48.25
2001	1876.19	954.23	50.86	921.96	49.14
2002	1905.19	975.46	51.20	929.73	48.80
2003	1933.95	994.24	51.41	939.71	48.59
2004	1963.11	1008.02	51.30	955.09	48.70
2005	2010.35	1029.70	51.22	980.65	48.78
2006	2050.00	1050.01	51.22	999.99	48.78
2007	2095.19	1072.53	51.19	1022.66	48.81
2008	2130.81	1083.94	50.87	1046.87	49.13

Notes:

1. Since 2000 the total urban and rural population is calculated on the 5th national population censuses, data of population is calculated on the annals of public security in other year.
2. Source is from Xinjiang Statistics Yearbook, 2009 (Table 3-7).

Appendix D: Basic Information of Grades 1-12 Schools in Xinjiang

Items	Schools	Graduates	New Enrollment	Total Enrollment	Staff and Teachers	Full-time Teachers
Regular Middle Schools	**1759**	**507098**	**497579**	**1483550**	**127092**	**108729**
-Senior high Schools	444	135240	147914	418701		28735
- Junior high Schools	1315	371858	349665	1064849		79994
Vocational Secondary Schools	82	6454	21610	41611	3807	2586
Technical Schools	57	11566	22065	46791	7539	5202
Primary Schools	**4159**	**349300**	**328647**	**2012004**	**149629**	**132797**
Special Schools	10	859	840	5574	420	313

Note: Source is from Xinjiang Statistics Yearbook, 2009 (Table 17-9)

Appendix E: Scale of Chinese Educational System

Unit: in 10 thousand person

Year	Schools (in 10 Thousand)	Enrolment	Teachers Staff & Workers	Educational Population	Proportion of Education Population (%)
1985	144	21753	1261	23014	22.0
1990	136	23654	1432	25086	22.2
1996	155	30401	1549	31950	26.2
1997	157	31076	1577	32653	26.7
1998	155	31809	1580	33389	27.0
1999	159	32672	1596	34268	27.5
2000	149	32093	1592	33685	26.8
2001	135	32135	1574	33709	26.6
2002	117	31873	1579	33452	26.2
2003	96	31989	1610	33599	26.2
2004	68	32558	1597	34155	26.4
2005	65	36904	1624	38528	29.6
2006	63	31860	1652	33512	25.6
2007	66	32187	1675	33862	25.8
2008	58	32099	1692	33791	25.6

Note: Source from http://www.moe.gov.cn/edoas/website18/02/info1261475099944802.htm

Appendix F: School System of P. R. China (Marsh & Morris, 1991)

Level/Grade	Description	Typical age	Remarks
Nursery	Day-care/Week-care/Month-care	1-3 years old	
Pre-primary		4-6 years old	
Kindergarten			
Level 1			
Level 2			
Level 3			
Primary	Primary schools	7-12 years old	
1st Grade		7	
2nd Grade		8	
3rd Grade		9	
4th Grade		10	
5th Grade		11	
6th Grade		12	
Secondary		13-18 years old	
Junior	Junior Middle schools	13-15 yrs	
1st Grade			
2nd Grade			
3rd Grade			
Senior	Senior Middle Schools	16-18 yrs	Other options:
1st Grade			Agricultural middle school; Vocational middle school; Teacher Training school; Technical middle school
2nd Grade			
3rd Grade			
Higher Education		Ages vary, but normally, 19-22 years old	
College/University			Usually 2-3 years for college, and 4 years for university
Freshman			
Sophomore			
Junior			
Senior			
Graduate School		Age vary, but normally 23-28 years old	
Master Program		23-25 yrs	
Doctoral Program		26-28 yrs	

Appendix G: Pupil-Teacher Ratio in Xinjiang during the Main Years

Year	University and College		Middle Schools		Primary Schools	
	Number of Teachers	Pupil-Teacher Ratio	Number of Teachers	Pupil-Teacher Ratio	Number of Teachers	Pupil-Teacher Ratio
1978	2458	4.16	41661	19.36	82616	24.56
1980	3149	4.54	45232	18.20	89027	23.09
1985	5473	4.84	60942	15.68	98294	20.00
1990	7002	4.47	65814	13.12	95060	19.54
1995	7687	5.78	62934	11.91	106001	20.77
2000	7924	9.34	75895	14.92	131259	18.87
2001	9123	12.04	79419	15.47	132137	18.43
2002	10369	13.00	84714	15.80	132435	17.82
2003	11237	13.46	89332	16.22	132284	17.30
2004	12239	13.74	94381	16.08	134915	16.44
2005	12733	14.82	101701	15.16	134768	15.91
2006	13783	15.07	106975	14.70	134718	15.57
2007	15096	14.33	108232	14.13	133626	15.41
2008	15755	14.66	108729	13.64	132797	15.15

Note: Source is from Xinjiang Statistics Yearbook, 2009 (Table 17-12)

Appendix H: National Pupil-Teacher Ratio of K-20 in China

Unit: %

Year	K-12			Secondary		Tertiary		
	Primary	**Junior**	**Senior**	**Vocational Schools**	**Regular Schools**	**Total**	**4-year University**	**2-3 year college**
1993	22.37	15.65	14.96	13.86	14.55	8.00	7.82	8.61
1994	22.85	16.07	12.16	14.66	15.07	9.25	9.00	10.10
1995	23.30	16.73	12.95	15.35	15.95	9.83	9.71	10.16
1996	23.73	17.18	13.45	15.38	16.43	10.36	10.32	10.20
1997	24.16	17.33	14.05	15.88	16.71	10.87	10.80	10.85
1998	23.98	17.56	14.60	16.13	17.82	11.62	11.63	11.09
1999	23.12	18.17	15.16	15.91	17.88	13.37	13.67	12.23
2000	22.21	19.03	15.87	14.71	19.09	16.30	16.04	17.65
2001	21.64	19.24	16.73	14.26	19.91	18.22	18.47	17.15
2002	21.04	19.25	17.80	16.50	21.96	19.00	20.60	14.20
2003	20.50	19.13	18.35	17.67	25.30	17.00	21.07	14.75
2004	19.98	18.65	18.65	19.10	28.13	16.22	17.44	13.15
2005	19.43	17.80	18.54	20.62	31.02	16.85	17.75	14.78
2006	19.17	17.15	18.13	22.16	31.67	17.93	17.77	18.26
2007	18.82	16.52	17.48	23.50	31.39	17.28	17.31	17.20
2008	18.38	16.07	16.78	23.47	31.27	17.23	17.21	17.27

Note: Source was retrieved dated August 28, 2010
from http://www.moe.gov.cn/edoas/website18/00/info1261549908329900.htm

Appendix I: Introduction Letter

March 5, 2010

Director
Foreign Affairs Office, Education Committee,
Xinjiang Uygur Autonomous Region
No. 169, Yan'an Road, Urumqi, Xinjiang, China

Dear Director,

My name is Kenneth Zeichner, and I am Boeing Professor of Education and Director of Teacher Education in the College of Education at the University of Washington. Hongyan Zhang is one of my doctoral advisees and was granted PhD candidacy in November 2009. This letter is a request for permission for Hongyan to conduct a research study in your school system. Hongyan was born in Xinjiang in 1962 and lived there through 2005. She is eager to do her research in her hometown of Urumqi. She is undertaking this study as part of doctoral studies at the University of Washington and will use the information from her research as the basis for her doctoral dissertation.

Hongyan's research will examine the influence that teachers' beliefs about their students have on their instructional practice. Her study is designed to use three middle schools in Urumqi. In each school, Hongyan needs to interview the principal and 5 eighth grade teachers, as well as observe the 5 teachers' classroom teaching. She also needs to get information from 95 other teachers in each school via a written questionnaire that will take about 20 minutes for each teacher to complete.

It would be greatly appreciated if you would look favorably upon Hongyan's research efforts in her hometown.

Thank you in advance for all your help and support!

Sincerely,

Dr. Kenneth Zeichner
Boeing Professor of Teacher Education,
Director of Teacher Education

Dr. Stephen T. Kerr,
Professor, College of Education
Associate Dean for Academic Programs

（Appendix I in Chinese）

介绍信

新疆维吾尔自治区教育委员会外事处

中国新疆乌鲁木齐市延安路 169 号

尊敬的处长先生,

我是肯尼斯 · 扎克纳 (Kenneth Zeichner), 是华盛顿州大学教育学院教师教育系的系主任及波音教育教授。张红岩是我的一个博士研究生。2009 年 11 月她获得了博士候选人资格。

恳请贵处批准张红岩在你们学校系统里做一项课题研究。张红岩在新疆出生，且在那里居住到 2005 年底。她热切期望能回到自己的故乡乌鲁木齐市做课题。这个课题是她在华大博士学习的一部分，她将用该课题资料撰写其博士论文。

张红岩的课题拟调查研究教师对学生的看法和态度对其教学方法的影响。她计划到乌鲁木齐市的三所中学采访观摩教师。每所学校采访观摩一位校长和五位初二的教师(八年级)，并对该学校的另外 95 名教师进行大约 20 分钟的问卷调查。

期望您能对张红岩在家乡的课题研究提供一些帮助！

非常感谢您所有的帮助和支持！

诚挚的，

Dr. Kenneth Zeichner
肯尼斯 · 扎克纳，博士
波音教育教授
教师教育系　主任

Dr. Steve T. Kerr
斯蒂夫·科尔，博士
教育学院教授
教育学院　副院长

二〇一〇年三月五日

Appendix J: Interview Protocol for 8th Grade Teachers

List of Non-negotiables:

- Bios: teaching experience: years taught, years at this school, subject taught
- Experiences with diverse students
- Beliefs about students from diverse backgrounds
- Most common instructional methods

Questions about teacher self:

1. Could you tell me about your educational background and how you decided to become a teacher?

2. Would you tell me about yourself as a (subject matter) teacher in general? Who are you in the classroom? How would you describe yourself as a (subject matter) teacher?

3. What are your beliefs about students in general, and about minority students and students from low SES in specific? What kinds of things from your students do you most value? How do you understand students who have real difficulties?

4. During your K-12 schooling, what opportunities and experiences did you have as a student to learn about, with, and/or from racial groups different from your own?

5. Do you think that membership in the demographic groups (i.e. your gender, age, primary language, social class, religious affiliation, and race/ethnicity) inform your perspectives on teaching? If so, in which ways? If not, why not?

6. Do you think these memberships affect how you perceive and interact with students? If so, in which ways? If not, why not?

7. What are some reasons that many poor students and minority students don't experience academic success in school?

8. Please describe a school you would consider to be diverse (i.e. who attends this school? What populations does it serve?

9. What are the key issues related to diversity that schools face today? What roles do you think schools should play in regard to these issues of diversity?

10. What can you say about the interaction and the communication between you and your students in the classroom and outside the classroom, especially with minority students and students from low SES?

Questions about his/her 10 randomly selected students:

1. What do you think about this student? Smart?

2. Is this student active/proactive?

3. Was she/he born smart (GT)? (Can this student learn to think intelligently?)

4. Why do you think this student performs poorly (Why do you think this student perform so well)?

5. How about his/her math and science?

6. What do you think his/her studying attitude? (Diligent/lazy)

7. Does she/he always finish assignments/homework?

8. Does this student have behavioral problem? If yes, why?

9. What do you think of his/her parents?

10. What grade do you think he/she will have in next test? Why do you think so?

The likert-type five-point scale chart that the researcher will use while interviewing teachers about their beliefs:

	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
1. This student is smart.	1	2	3	4	5
2. This student is active.	1	2	3	4	5
3. This student was born smart (GT).	1	2	3	4	5
4. This student performs well/poorly.	1	2	3	4	5
5. This student is good at math and science.	1	2	3	4	5
6. This student has very good attitude in learning.	1	2	3	4	5
7. This student always finishes homework well.	1	2	3	4	5
8. This student has behavioral problem.	1	2	3	4	5
9. This student has very supportive parents.	1	2	3	4	5
10. This student will have a good grade in next test.	1	2	3	4	5

(Appendix J in Chinese)

中学教师采访提纲

期望获得的信息资料:

- 生平: 教学经验、教学年限、在本校的时间及所教科目
- 教授不同背景学生的经验
- 关于不同背景学生的看法及态度
- 最常采用的教学方法

关于教师本人的问题：

1. 请谈一下您的学历情况及怎样成为一名教师的？
2. 能谈一下您作为一名_____（科目）的总体感觉吗？ 您在教室里是一个什么样的角色？您怎样形容您作为 _____（科目）教师？
3. 您对学生的总体看法如何？您对少数民族学生的看法如何？您对有贫困家庭背景学生的看法如何？ 您最看中学生的什么品质？您怎样去理解真正有困难的学生？
4. 在您上中小学的时候，您有机会和不同民族学生一起学习生活的机会吗？
5. 您认为您的背景（性别、年龄、主要语言、社会地位、宗教信仰及民族）影响您对教学的看法吗？如果是这样的，在哪些方面？如果不是这样的，为什么？
6. 您认为您的背景影响您怎样看待及对待学生吗？如果是这样的，在哪些方面？如果不是这样的，为什么？
7. 在您的班级里总体上什么样的学生学习成绩不尽人意？为什么?
8. 请描述一所您认为是多元化的学校（例如，学生生源，或者是这所学校的服务对象等）。
9. 如今，这样多元化的学校所面临的主要问题是什么？您认为学校在处理这些问题的时候应该承担什么样的角色？
10. 您觉得您与您的学生在课上课下的互动及交流情况怎么样？特别是与贫困生及民族学生的互动和交流？

关于学生的问题：

1. 您认为这个学生怎么样？聪明吗？
2. 这个学生活跃吗？学习积极主动吗？
3. 他/她天生就聪明（是天才）吗？(这个学生可以学会科学地思考吗？)
4. 您为什么觉得这个学生学习很差？（您为什么觉得这个学生学习很好？）
5. 这个学生的数学和其他理科成绩怎么样？
6. 您认为这个学生的学习态度怎么样？（勤奋/懒惰）完成作业情况怎样?
7. 这个学生有纪律方面的问题吗？如果是的，为什么？
8. 您认为他/她的父母在其孩子的学习上起怎样的作用？
9. 您认为下次考试时这个学生的成绩怎么样？您为什么这样认为？
10. 在教学方面，您对待这个学生特殊吗？如果是，怎样特殊？为什么？

请回忆一件您与这个孩子之间最难忘的事情。

研究人员在采访教师对学生看法时中将采用的五点量表：

	完全不同意	不同意	不确定	同意	完全同意
1. 该生聪明。	1	2	3	4	5
2. 该生积极活跃。	1	2	3	4	5
3. 该生天生聪明（是天才）。	1	2	3	4	5
4. 该生学习成绩好/差。	1	2	3	4	5
5. 该生数学及其他理科都好。	1	2	3	4	5
6. 该生学习态度非常好。	1	2	3	4	5
7. 该生总是完成作业完成得很好。	1	2	3	4	5
8. 该生有纪律方面的问题。	1	2	3	4	5
9. 该生的父母非常负责并支持其学习。	1	2	3	4	5
10. 该生下次考试会考得很好。	1	2	3	4	5

Appendix K: Interview Protocols for Middle School Principals

List of Non-negotiables:

- Bios: teaching experience: years taught, subject taught, administrative experiences, years at this school,
- Experiences with diverse students
- Understanding about teachers' beliefs about students from diverse backgrounds
- General patterns of teachers' beliefs and their instructional practice

Would you tell me a little bit about your background?

1. How would you describe your school and district community? Has anything changed from how you might have described this community in the last four years? If yes, what has changed?

2. How do you perceive your role in providing professional development for your staff? Do you think professional development really offer teachers learning opportunities? If yes, how? If no, why?

3. What are your beliefs about ethnically, linguistically, financially diverse students? Their learning ability? Their motivation to learn? Their academic level? Please elaborate.

4. What beliefs do you think teachers in your school hold about students with diverse background? Do you think teachers make instructional decisions based on their beliefs about their students? If yes, please elaborate.

5. Do you think that membership in the demographic groups (i.e. gender, age, primary language, social class, religious affiliation, and race/ethnicity) inform teachers' perspectives on teaching? If so, in which ways? If not, why not?

6. Do you think these memberships affect how you perceive and interact with students? If so, in which ways? If not, why not?

7. What are some reasons that many poor students and minority students don't experience academic success in school?

8. Please describe a school you would consider to be diverse (i.e. who attends this school? What populations does it serve?

9. What are the key issues related to diversity that schools face today? What roles do you think schools should play in regard to these issues of diversity?

10. What do you think can be done to change teachers' beliefs about their students with diverse backgrounds, if it is the core factor for teachers to revise their instructional practice?

（Appendix K in Chinese）

中学校长采访提纲

期望获得的信息资料:

- 生平: 教学经验、教学年限、在本校的时间及曾教科目
- 教授不同背景学生的经验
- 关于教师对不同背景学生的看法及态度
- 教师对学生的看法及其教学方式的一般（常见）模式

可以谈一下您自己的情况吗？

1. 您觉得您的学校及学区怎么样？过去的四年中您的学校发生了什么变化吗？如果有变化的话，是什么？

2. 您认为您在教师培训/继续教育中担任什么样的角色？您认为教师培训继续教育真的可以为教师提供学习机会吗？如果是，怎样提供机会？如果不是，为什么？

3. 您对民族、语言、经济背景不同的学生看法是什么？他们的学习能力怎样？他们的学习动力如何？他们的成绩如何？请详细谈谈。

4. 您认为您学校的教师对不同背景学生的看法如何？您认为教师们是根据他们对学生的看法来决定采用什么样的教学方法吗？如果是这样的，请详谈。

5. 您认为教师的背景（如性别、年龄、语言、社会地位、宗教及民族）会影响教师对教学的看法吗？如果是，在哪些方面？如果不是，为什么？

6. 您认为各人背景会影响您对学生的看法及与他们的互动吗？如果是，在哪些方面？如果不是，为什么？

7. 为什么贫困生及民族学生在学校里学习成绩不尽人意？

8. 请描述一所您认为是多元化的学校（例如，学生生源，或者是这所学校的服务对象等）。

9. 如今，这样多元化的学校所面临的主要问题是什么？您认为学校在处理这些问题的时候应该承担什么样的角色？

10. 如果改变教师对不同背景学生的看法是改变其教学的主要因素，那么您认为教师的看法可以怎样改变？

Appendix L: Questionnaire

Note: The questionnaire is developed based on the work of Ballone and Czerniak (2001) and Song (2006).

Participation of this survey is voluntary, and participants are free to answer or not answer some questions, and can withdraw at any time.

For each item on the rating scale in this survey, please click the answer that best represents your beliefs about teaching and learning, your opinions about a variety of instructional strategies to meet the needs of different students. Different students refer to students who differ in ethnic backgrounds, learning abilities, language abilities and socio-economical status.

PART I. For each item, select one adjective that best describes your thoughts by putting a mark on the appropriate line.

My implementing a variety of instructional strategies to meet the needs of different students in my classroom this school year is:

1. good _____: _____: _____: _____: _____: bad
   extremely quite Good Bad Quite
2. wise _____: _____: _____: _____: _____: foolish
   extremely quite Good Foolish Quite
3. valuable _____: _____: _____: _____: _____: worthless
   extremely quite Good Worthless Quite
4. challenging _____: _____: _____: _____: _____: easy
   extremely quite Good Easy Quite

PART II. Indicate your beliefs about teaching and learning.

	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
5. Some students cannot learn how to reason their way through novel situations.	1	2	3	4	5
6. Students can learn to think intelligently.	1	2	3	4	5
7. The use of ability reading group is an effective tool for teaching students with different reading abilities.	1	2	3	4	5
8. Repetition is the best way to fix knowledge and skills in memory.	1	2	3	4	5
9. Students who lack basic reading and computation skills need to acquire those skills before they can move on to higher order thinking.	1	2	3	4	5
10. Low-ability students need to focus on acquiring basic knowledge and skills.	1	2	3	4	5
11. Intelligence is another way of saying that a student does or does not have the capacity to learn intellectually challenging material.	1	2	3	4	5
12. Intelligence is a fixed measurement, which may be used effectively to determine how to teach individual students.	1	2	3	4	5
13. Heterogeneous classes allow for all levels of students to achieve at higher levels.	1	2	3	4	5
14. Learning occurs in fairly defined stages and ways, so individual differences, such as cultural background and experiences, have only limited impact on achievement.	1	2	3	4	5
15. Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material.	1	2	3	4	5
16. Behavior-disordered students are best taught in					

a controlled environment removed from the regular classroom.	1	2	3	4	5
17. Students who do not have Mandarin as their primary language should not be in my class.	1	2	3	4	5
18. I treat all of my students the same.	1	2	3	4	5
19. If students are not motivated to learn, there is nothing that teachers can do.	1	2	3	4	5

PART III. Indicate the likelihood of each of the following statements by circling the appropriate number.

	Very unlikely	Slightly unlikely	Neither	Slightly likely	Very likely
20. I have implemented a variety of instructional strategies this school year to meet the needs of different students.	1	2	3	4	5
21. Most people who are important to me think I have implemented a variety of instructional strategies to meet the needs of diverse students.	1	2	3	4	5
22. It will be mostly up to me whether or not I implement a variety of instructional strategies to meet the needs of different learners during this school year.	1	2	3	4	5
23. If I implemented a variety of instructional strategies into my classroom to meet the needs of different learners during this school year, I would meet the requirement of the curriculum reform.	1	2	3	4	5

PART IV. **My implementing a variety of instructional strategies to meet the needs of different students into my classroom would:**

	Strongly Disagree	Disgree	Not sure	Agree	Strongly Agree
24. require extended instructional time with students	1	2	3	4	5
25. make (subject) a good learning experience for all	1	2	3	4	5
26. increase all student's success in the class	1	2	3	4	5
27. encourage all students to become participants	1	2	3	4	5
28. help students master more materials	1	2	3	4	5
29. demand smaller class sizes	1	2	3	4	5
30. be difficult because of some behavior problems	1	2	3	4	5
31. make good record in my yearly evaluation	1	2	3	4	5
32. require more materials for activities	1	2	3	4	5
33. require more teacher efforts	1	2	3	4	5
34. demand more planning time	1	2	3	4	5
35. create student interests	1	2	3	4	5
36. develop a need for inservice professional development	1	2	3	4	5

PART V. Indicate the likelihood that the following people think you should implement a variety of instructional strategies to meet the needs of different students in your classroom.

	Very unlikely	Slightly unlikely	Neither	Slightly likely	Very likely
37. School administrators (principal, superintendent, evaluators, etc)	1	2	3	4	5
38. Students in poverty	1	2	3	4	5
39. Minority students	1	2	3	4	5
40. Experienced teachers	1	2	3	4	5
41. Teachers with similar experiences	1	2	3	4	5
42. Parents from low SES	1	2	3	4	5
43. Parents of minority students	1	2	3	4	5
44. Ordinary parents	1	2	3	4	5
45. Policy makers and reformers	1	2	3	4	5

Part VI. Indicate the likelihood that the following factors would encourage you to implement a variety of instructional strategies to meet different students in your classroom.

	Very unlikely	Slightly unlikely	Neither	Slightly likely	Very likely
46. Having available resources (funding, curriculum materials, supplies & equipment, etc.)	1	2	3	4	5
47. professional development opportunities on different students & instructional strategies	1	2	3	4	5
48. Parental support	1	2	3	4	5
49. Collegial support	1	2	3	4	5
50. Administrative support	1	2	3	4	5
51. High expectations about students	1	2	3	4	5
52. Beliefs that every student can learn.	1	2	3	4	5
53. Cooperative students (few behavioral problems)	1	2	3	4	5
54. Mandated requirement for minimum student achievement	1	2	3	4	5

PARTVII. Indicate likelihood that you will hold low expectations of different student groups below and you just try to help them with basic knowledge and skills.

	Very unlikely	Slightly unlikely	Neither	Slightly likely	Very likely
55. Students in poverty	1	2	3	4	5
56. Han students from low SES	1	2	3	4	5
57 Non-Han students from low SES	1	2	3	4	5
58. low achievers	1	2	3	4	5
59. slow learners	1	2	3	4	5
60. Minority students with fluent Chinese	1	2	3	4	5
61. Minority students with broken Chinese	1	2	3	4	5
62. Female students	1	2	3	4	5
63. Male students	1	2	3	4	5
64. Students with well educated parents	1	2	3	4	5
65. Students with non-educated parents	1	2	3	4	5
66. poorly self-disciplined and lazy students	1	2	3	4	5

PART VIII. Please complete the following personal information by placing a mark (x) in the space provided or by filling in the blank.

A. Race/ethnicity:
( ) Han ( ) Hui ( ) Uyghur ( ) Kazak ( ) Mongolian ( ) Other _____)

B. Gender: ( )Male ( )Female

C. years of teaching experience: _____years

D. Highest Degree Obtained: ( )Bachelor's ( )Master's ( )Specialist ( ) Others

E. Home SES background: ( ) low-income ( ) medium income ( ) high income

F. I grew up with:
( ) all Han ( ) all minority ( ) heterogeneous circumstances with Han and non-Han

G. I speak ( ) language ( ) languages (including all the languages that you speak).

Please check to see that you have responded to all items. Thank you for your cooperation and time!!

(Appendix L in Chinese)

教师对学生的看法/态度及其教学方法的问卷

注：该问卷部分由 Ballone 和 Czerniak (2001 年) 及 Song (2006 年)的问卷改编。

请在本问卷中的每一个小题中选择您所认为的最佳答案。这些问题是关于您对教与学的看法以及您对采用不同教学方法满足不同背景学生需求的看法。不同背景指的是民族、学习能力、语言能力及经济社会地位的不同。

第一部分：每一个小题中，在您认为最能描述您想法的线上打个钩。

本学年，我在我的班级对不同学生采取不同教学方法工作实施地：

1. 好 _____: _____: _____: _____: _____ 差
非常 有点 一般 有点 非常

2.明智 _____: _____: _____: _____: _____ 不明智
非常 有点 一般 有点 非常

3. 有价值 _____: _____: _____: _____: _____ 无价值
非常 有点 一般 有点 非常

4. 具有挑战性 _____: _____: _____: _____: _____ 容易
非常 有点 一般 有点 非常

第二部分：表明您对教与学的看法和认识。

	完全不同意	不同意	不确定	同意	完全同意
5. 有些学生学不会举一反三	1	2	3	4	5
6. 学生可以学会科学地思考	1	2	3	4	5
7. 阅读小组是对不同能力学生都有效的学习阅读的方法	1	2	3	4	5
8. 反复多练是帮助记忆知识和技能的最好方法	1	2	3	4	5
9. 缺乏阅读和计算基础知识的学生，学不会怎样进行高难度思考	1	2	3	4	5
10. 能力差的学生应该把注意力放在掌握基础知识和基本技能上	1	2	3	4	5
11. 智商决定学生能不能学习具挑战性内容	1	2	3	4	5
12. 智商是固定的(与生俱来的)，它可以有效地用来确定怎样教具体的学生。	1	2	3	4	5
13. 把成绩参差不齐学生放在一个班级可以使所有不同水平的学生在不同方面取得更大的发展	1	2	3	4	5
14. 学习是要求特定时机和方法的，所以每个学生的差异，例如家庭文化背景及经历等对学习成绩只有很有限的影响。	1	2	3	4	5
15. 贫困家庭出身的学生不太可能具备学习挑战性较强内容的能力	1	2	3	4	5
16. 自律性差的学生最好不要放在普通班级里。他们应该在严格控制的环境下学习。	1	2	3	4	5
17. 不会汉语的学生不应该在我的班上	1	2	3	4	5
18. 我对我的所有学生都是一视同仁	1	2	3	4	5
19. 如果学生没有学习动力，那么老师也没有办法					

帮助他们。 1 2 3 4 5

第三部分： 选择最适合的答案。

	完全不同意	不同意	不确定	同意	完全同意
20. 本学年我已经采取了各种教学方法来满足不同学生的需求	1	2	3	4	5
21. 我周围的大多数人都认为我已经采取了各种教学方法来满足不同学生的需求	1	2	3	4	5
22. 主要是由我自己来判断本学年我是否已经采取了各种教学方法来满足不同学生的需求	1	2	3	4	5
23. 如果本学年我已经采取了各种教学方法来满足不同学生的需求，那么我就到达了教改的要求	1	2	3	4	5

第四部分：在我的班级，如果我采取各种教学方法来满足不同学生的需求，将

	完全不同意	不同意	不确定	同意	完全同意
24. 需要延长和学生在一起的时间	1	2	3	4	5
25. 对所有学生来说都是一种好的学习经历	1	2	3	4	5
26. 提高班上所有学生的成绩	1	2	3	4	5
27. 鼓励所有学生积极主动地学习	1	2	3	4	5
28. 帮助学生学习更多知识	1	2	3	4	5
29. 需要小班级	1	2	3	4	5
30. 很困难，因为有自律性差的学生	1	2	3	4	5
31. 使我获得较好的年度考评	1	2	3	4	5
32. 需要更多的教学活动资料	1	2	3	4	5
33. 需要老师付出更多的精力	1	2	3	4	5
34. 需要更长的时间备课	1	2	3	4	5
35. 增加学生的学习兴趣	1	2	3	4	5
36. 是教师职业职责的一种需求	1	2	3	4	5

第五部分：从下列哪种人群中可以了解到您已经对不同学生采取了不同的教学方法以满足他们的不同需求。

	完全不同意	不同意	确定	同意	完全同意
37. 学校领导（校长、教育局局长、评估人员等）	1	2	3	4	5
38. 贫困学生	1	2	3	4	5
39. 少数民族学生	1	2	3	4	5
40. 高年资教师	1	2	3	4	5
41. 同龄同级教师	1	2	3	4	5
42. 贫困学生家长	1	2	3	4	5
43. 少数民族家长	1	2	3	4	5
44. 一般家长	1	2	3	4	5
45. 政策制定者和改革家	1	2	3	4	5

第六部分：选择下列哪些因素能促使您对不同学生采取不同的教学方法以满足他们的不同需求。

	完全不同意	不同意	不确定	同意	完全同意
46. 有现成的资料（经费、教材、设备等）	1	2	3	4	5
47. 对不同学生教学方法的培训班	1	2	3	4	5

48. 家长的支持	1	2	3	4	5
49. 同事的支持	1	2	3	4	5
50. 领导的支持	1	2	3	4	5
51. 对学生的高期望值	1	2	3	4	5
52. “每个学生都能学会”的信念	1	2	3	4	5
53. 自律的学生 (不违反纪律的学生)	1	2	3	4	5
54. 学校对学生最低成绩的要求	1	2	3	4	5

第七部分：下列哪类学生您并不期望他们有更好的成就，而且在教学中您认为他们只能掌握最基础的知识和技能。

	完全不同意	不 同意	不确定	同意	完全同意
55. 贫困学生	1	2	3	4	5
56. 社会地位较低的汉族学生	1	2	3	4	5
57 社会地位较低的少数民族学生	1	2	3	4	5
58. 学习成绩差的学生	1	2	3	4	5
59. 反应慢的学生	1	2	3	4	5
60. 会讲流利汉语的少数民族学生	1	2	3	4	5
61. 不会讲流利汉语的少数民族学生	1	2	3	4	5
62. 女学生	1	2	3	4	5
63. 男学生	1	2	3	4	5
64. 有受过良好教育父母的学生	1	2	3	4	5
65. 没有受过良好教育父母的学生	1	2	3	4	5
66. 自律性差、不能坚持学习的学生	1	2	3	4	5

第八部分：请填写下列个人信息。

A. 族别: ( ) 汉; ( ) 回; ( ) 维吾尔; ( ) 哈萨克; ( ) 蒙古; ( ) 其他 _____

B. 性别: ( ) 男; ( )女

C. 教学年限： _____

D. 最高学历： （ ） 大专；( ) 学士; ( ) 硕士; ( ) 专家; ( ) 其他

E. 家庭经济条件: ( ) 月收入2000元以下; ( ) 月收入3000-2000元; ( ) 月收入3000元以上

F. 我和 _____一起长大。

( ) 汉族; ( ) 少数民族; ( ) 有汉族也有少数民族

G. 我讲 ( ) 一门语言; ( ) 二门语言; ( ) 多种语言 (包括所有您会说的语言)。

H. 我教
（ ）汉语； （ ）英语； （ ）数学； （ ）物理； （ ）地理/历史/政治； （ ）生物；
（ ）其他

请检查一下您是否已经回答了所有的问题。谢谢您宝贵的时间和合作！

Appendix M: Exploratory Factor Analysis

The 66-item questionnaire data collected for the study was analyzed in various ways at several levels to assure the reliability and validity. The preliminary statistical analysis was conducted in two phases. First, data was screened with respect to missing data, outliers, and the assumptions of normality, linearity and homogeneity of variance (HOV). This screening is crucial prior to conducting statistical analysis to avoid conclusions with erroneous statistical results. Second, prior to further analysis with other statistical techniques, exploratory factor analysis (EFA) was executed for three sections of the questionnaire, which are teachers' beliefs about teaching and learning (Section II), beliefs about the major factors that teachers believed that would encourage them to teach based on students' needs (Section VI), and expectations of different student groups (Section VII). The EFA purported to explore the internal factor structure of the data and regroup the items with related factors[61] for further statistical analysis.

Factor analysis, according to Mertler and Vannatta (2005), is essentially a process by which the number of variables is reduced by determining which variables "cluster" together, and factors are the groupings of variables that are measuring some common entity or construct (p. 249). Hence, there are two main goals to conduct factor analysis. One is to reduce data to a smaller set of summary variables by bringing intercorrelated variables together under more general underlying variables. The other is to explore underlying internal theoretical structure. The underlying purpose becomes then to investigate and determine if measures for different variables are actually measuring something in common and if there are some shared structures among variables. The procedures of factor analysis include extraction from a larger set of variables in the means of principal components analysis (exploratory) and factor analysis (exploratory and confirmatory) (Stevens, 1992). The main results obtained from a factor analysis consist of factor loadings, which are interpreted as the Pearson correlation coefficient of an original variable with a factor. Another index of the results is a list of communalities for each variable, which represents the proportion of variability for a given variable that is explained by the factors. Mertler and Vannatta interpret commonalities as the sum of squared loadings across all factors for that variable.

Data Screening

Sample size

In this study, the questionnaire data was originally delivered from 330 teachers. Among them, 28 teachers did not return the questionnaires. In addition, there were 36 questionnaires with invalid data since their responses were almost the same across all the questions despite the variation of the wording between items. Consequently, the entire data only included 266 teachers' responses, imported into SPSS for further analysis.

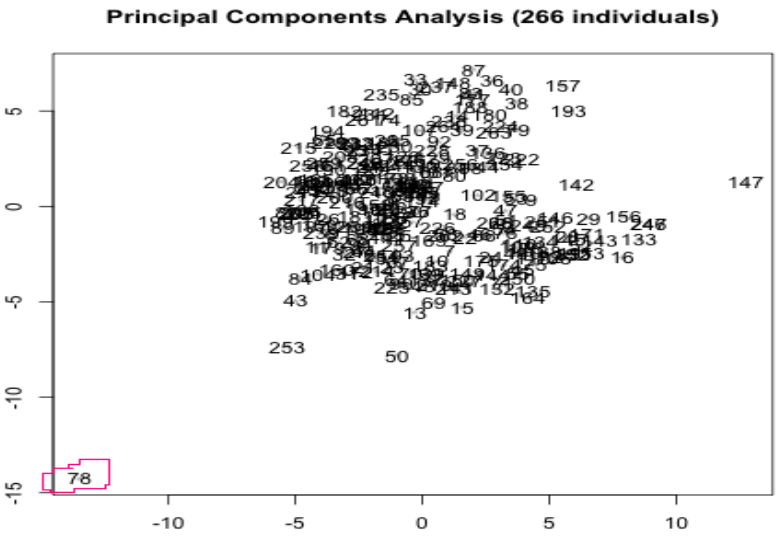
Normality, linearity, and Homogeneity of Variance

Prior to other statistical analysis such as *t*-tests, ANOVA and MANOVA, normality tests were conducted to explore if the residuals were normally distributed from a linear regression mode as well as to detect the outliers. Tests of normality and homogeneity of variances were also conducted for each item of the questionnaire, including descriptive statistics (mean, standard deviation, skewness and kutosis), histogram, tests of normality, test of homogeneity of variances, and normal Q-Q plots.

[61] For this study, "factors" are used to describe the emerged internal patterns and structures instead of "components" or "constructs".

The descriptive statistics revealed that scores for some items were skewed either negatively or positively with the maximum skewness of 1.185, and some items with high Kutosis value (Item 36 with 3.320 and Item 48 with 4.585). The descriptive statistics suggested that Case No. 78 was an outlier with extreme values, which is shown in the figure below. This particular case was then excluded for further analysis in the dissertation because this outlier with extreme values could bias the item means and pattern of results.

Figure 1: All Subjects with Case No. 78 Circled Out



The elimination of Case 78 improved the normality of the data. The histogram, descriptive statistics, normal Q-Q plots, test of normality indicated that the sum of the 66-item of the questionnaire became fairly normally distributed, though still with Item 48's Kutosis scale as 3.878. Large samples (*n*=266 in this study) may show significant skewness and/or kutosis values, but often may not deviate enough from normal to make a meaningful difference in the analysis (Stevens, 1992).

Test of homogeneity of variances was conducted using Levene's Test within t-test and ANOVA. The results indicated the equality of variance for each item between groups of gender, ethnicity, and schools. Thus, I became confident to conclude that the data distribution met the assumptions needed for conducting the proposed main analysis and that statistical findings should be fairly robust.

Exploratory Factor Analysis

For this study, exploratory factor analysis (EFA) was performed using Principle Component Analysis (PCA) for factor exactions and Varimax for factor rotation in order to identify how teachers' beliefs would be clustered around meaningful factors (Smith, 2002). This analysis allowed me to test if subsets of questionnaire items were correlated with each other to measure some common entity or a latent factor, and, if so, how many different factors could be retained to explain the data in a meaningful way and understand what themes these factors represented in Chinese teachers' beliefs.

Before presenting the EFA results of the data, it is necessary to describe the design of the questionnaire in detail in order to explain why EFA was only conducted for some sections of the instrument in this dissertation study. The 66-item questionnaire was designed with two parts. The first part includes four sections: Section I (4 items from 1 to

4) for subjects to self evaluation on their instructional practices (i.e., differentiated instruction); Section III (4 items from 20 to 23) for subjects to evaluate if they and other members in the community believed that they had conducted differentiated instructions for different student groups; Section IV (9 items from 46 to 54) for subjects to consider what factors that they believed would encourage them to carry out differentiated instructions; and Section V (9 items from 37 to 45) for subject to evaluate what other community members including administrators, parents, students and reformers think about their differentiated instructional practices. All these sections included fewer but distinct variables compared to the second part of this questionnaire. It was appropriate to analyze them via descriptive statistics – Univariate Analysis including frequency distribution and central tendency to discover what was going on in the data, i.e., what beliefs held by the teachers about their instructional practices.

The second part of the questionnaire was designed to investigate and capture Chinese teachers' beliefs about teaching and learning in general (Section II, 15 items from 5 to 19); their beliefs about the factors that would encourage them to adopt different instructional strategies (Section VI, 9 items from 46 to 54); and their beliefs about different student groups in specific (Section VII, 12 items from 55 to 66). These three sections were factor-analyzed to further identify the internal structures underlying the score patterns so that reduced sub-scale scores can be used in further analysis including t-test, ANOVA and MANOVA to compare teacher beliefs across groups. The sub-scales allowed more accurate representations of teacher beliefs rather than the sum of scores or individual items.

To determine the appropriate number of factors to be retained for meaningful constructs, three criterions were applied for exploratory factor analysis in the study. The first criteria: to retain the factors whose eigenvalues ≥ 1. The second criteria: to retain all factors with eigenvalues in the sharp descent of the line before the first one where the leveling effect occurs in the scree plot. The third criteria: to retain the factors that account for at least 70% of the total variability (Stevens, 1992). The key results of EFA of these three sections are presented below with tables and figures including total variance, communalities, scree plot, and factor loadings.

Results of Section II – Beliefs about teaching and learning

In Section II, there are 15 questionnaire items generally designed to investigate teachers' beliefs and perspectives about teaching and learning. The general trend of the data pattern was that there were more respondents choosing "agree" and "totally agree". Factor analysis was conducted to determine what, if any, underlying structures exit for measures on these 15 items (variables) in the table below:

Table 1: 15 Items in Section II of the Questionnaire

Questionnaire Items	Item Labels (Variables)
5. Some students cannot learn how to reason their way through novel situations	*Novel Situation*
6. Students can learn to think intelligently	*Intelligent Thinking*
7. The use of ability reading group is an effective tool for teaching students with different reading abilities.	*Reading Group*
8. Repetition is the best way to fix knowledge and skills in memory.	*Repetition*
9. Students who lack basic reading and computation skills need to acquire those skills before they can move on to higher order thinking.	*Basic Skills*
10. Low-ability students need to focus on acquiring basic knowledge and skills.	*Low Ability*
11. Intelligence is another way of saying that a student does or does not have the capacity to learn intellectually challenging material.	*IQ Judge*
12. Intelligence is a fixed measurement, which may be used effectively to determine how to teach individual students.	*IQ Measure*
13. Heterogeneous classes allow for all levels of students to achieve at higher levels.	*Heterogeneous*
14. Learning occurs in fairly defined stages and ways, so individual differences, such as cultural background and experiences, have only limited impact on achievement.	*Individual Difference*
15. Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material.	*Low SES*
16. Behavior-disordered students are best taught in a controlled environment removed from the regular classroom.	*Misbehaved*
17. Students who do not use Mandarin as their primary language should not be in my class.	*No-Mandarin*
18. I treat all of my students the same.	*All Same*
19. If students are not motivated to learn, there is nothing that teachers can do.	*Unmotivated*

The EFA results of Section II are reported respectively in the following tables.

Table 2: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Items	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.051	21.796	21.796	3.051	21.796	21.796	2.410	17.212	17.212
2	1.787	12.762	34.558	1.787	12.762	34.558	1.786	12.760	29.972
3	1.450	10.357	44.916	1.450	10.357	44.916	1.670	11.926	41.898
4	1.227	8.764	53.679	1.227	8.764	53.679	1.649	11.781	53.679
5	.989	7.067	60.746						
6	.852	6.088	66.833						
7	.770	5.499	72.332						
8	.684	4.885	77.217						
9	.675	4.820	82.037						
10	.630	4.497	86.534						
11	.573	4.095	90.629						
12	.510	3.645	94.274						
13	.413	2.949	97.222						
14	.389	2.778	100.000						

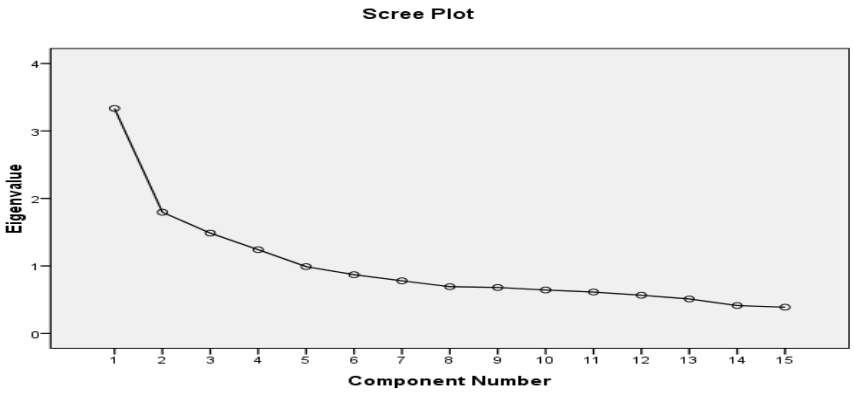
Communalities

Items	Initial	Extraction
5. Some students cannot learn how to reason their way through novel situations	1.000	.544
6. Students can learn to think intelligently	1.000	.412
7. The use of ability reading group is an effective tool for teaching students with different reading abilities.	1.000	.526
8. Repetition is the best way to fix knowledge and skills in memory.	1.000	.529
9. Students who lack basic reading and computation skills need to acquire those skills before they can move on to higher order thinking.	1.000	.457
10. Low-ability students need to focus on acquiring basic knowledge and skills.	1.000	.611
11. Intelligence is another way of saying that a student does or does not have the capacity to learn intellectually challenging material.	1.000	.584
12. Intelligence is a fixed measurement, which may be used effectively to determine how to teach individual students.	1.000	.536
13. Heterogeneous classes allow for all levels of students to achieve at higher levels.	1.000	.529
14. Learning occurs in fairly defined stages and ways, so individual differences, such as cultural background and experiences, have only limited impact on achievement.	1.000	.300
15. Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material.	1.000	.723
16. Behavior-disordered students are best taught in a controlled environment removed from the regular classroom.	1.000	.383
17. Students who do not use Mandarin as their primary language should not be in my class.	1.000	.667
18. I treat all of my students the same.	1.000	.503
19. If students are not motivated to learn, there is nothing that teachers can do.	1.000	.553

Extraction Method: Principal Component Analysis.

The scree plot was then assessed, and it indicates that the eigenvalues after four components levels off (see Figure 2 scree plot). Although the scree plot suggests that the inclusion of the fifth component may improve the model, the residuals reveal that any model improvement would be minimal. Consequently, four components were retained for inferential statistical analysis.

Figure 2: Scree Pot of Section II



After rotations, the first factor accounted for 16.15% of the total variance in the original variables, the second for 12.22%, the third for 12.15% and the fourth for 11.87%. The four factors then accounted to 52.38% (<70%). Table 3 presents the loadings for each

factor, all of which were positive. Factor number 1 consisted of four of the fifteen variables: *No-Mandarin, Low SES, Non-motivated and Misbehaved*. Items with the highest loadings were *No-Mandarin, Low SES*. These variables addressed learning of students with deficit characteristics. Factor #1 was named ***"Deficit pedagogical beliefs***" .The second factor consisted of two variables: *IQ Judge and IQ Measure*. Factor #2 was labeled as "***Beliefs about Innate Ability".*** The third factor consisted of four variables: *Repetition, Low ability, Novel situation and basic skills*. Factor #3 was named "***Beliefs about traditional/rote learning".*** The fourth factor included the remaining four variables: *Reading group, Heterogeneous, Intelligent thinking and Individual Difference.* Factor #4 was labeled "***Pedagogical Contents: Grouping students for better learning"***. The factor loadings are summarized in the table below.

Table 3:Summary of Factor Loadings

Factor Label	Questionnaire Items	Loadings
Factor 1: Deficit Pedagogical Beliefs		
No-Mandarin	17. Students who do not use Mandarin as their primary language should not be in my class.	.800
Low SES	15. Students from low-socioeconomic situations are less likely to have the capacity to learn intellectually challenging material.	.712
Non-motivated	19. If students are not motivated to learn, there is nothing that teachers can do.	.688
Misbehaved	16. Behavior-disordered students are best taught in a controlled environment removed from the regular classroom.	.555
Factor 2: Pedagogical Contents: Grouping Students for Better Learning		
Reading group	7. The use of ability reading group is an effective tool for teaching students with different reading abilities.	.713
Heterogeneous	13. Heterogeneous classes allow for all levels of students to achieve at higher levels.	.703
Intelligent thinking	6. Students can learn to think intelligently	.581
Individual difference	14. Learning occurs in fairly defined stages and ways, so individual differences, such as cultural background and experiences, have only limited impact on achievement.	.474
Factor 3: Beliefs about Traditional/Rote Learning		
Repetition	8. Repetition is the best way to fix knowledge and skills in memory.	.732
Low ability	10. Low-ability students need to focus on acquiring basic knowledge and skills.	.711
Novel situation	5. Some students cannot learn how to reason their way through novel situations	.555
Factor 4: Beliefs about Innate Ability		
IQ judge	11. Intelligence is another way of saying that a student does or does not have the capacity to learn intellectually challenging material.	.749
IQ measure	12. Intelligence is a fixed measurement, which may be used effectively to determine how to teach individual students.	.686

Result of Section VI – Beliefs about factors that are required for differentiate instruction

Section VI has 9 variables to measure: "Having available resources (funding, curriculum" (*Funding*); "materials, supplies & equipment, etc." (*Materials)*; "professional development opportunities on different students and instructional strategies" (*CPD*); "Parental support" (*Parent*); "Collegial support" (*Colleague*): "Administrative support" (*Administrator);* "High expectations about students" (*HighExp*); "Beliefs that every student can learn."(*AllLearn*); "Cooperative students (few behavioral problems)"

(*Cooperative*); and "Mandated requirement for minimum student achievement" (*Requirements*). The same procedure of EFA was conducted. The results are reported in the following tables.

Table 4: Total Variance for Two-Component Solution (Total Variance Explained)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.691	41.010	41.010	3.691	41.010	41.010	2.954	32.825	32.825
2	1.393	15.483	56.493	1.393	15.483	56.493	2.130	23.668	56.493
3	.892	9.914	66.407						
4	.795	8.831	75.238						
5	.634	7.044	82.282						
6	.489	5.434	87.716						
7	.436	4.848	92.565						
8	.390	4.332	96.896						
9	.279	3.104	100.000						

Extraction Method: Principal Component Analysis

Communalities

	Initial	Extraction
46. Having available resources (funding, curriculum materials, supplies & equipment, etc.)	1.000	.508
47. . professional development opportunities on different professional development opportunities on different	1.000	.397
48. Parental support	1.000	.699
49. Collegial support	1.000	.741
50. Administrative support	1.000	.605
51. High expectations about students	1.000	.432
52. Beliefs that every student can learn.	1.000	.331
53. Cooperative students (less behavioral problems)	1.000	.659
54. Mandated requirement for minimum student achievement	1.000	.712

Extraction Method: Principal Component Analysis.

The scree plot was then assessed and indicates that the eigenvalues after three components levels off (see Figure 3: scree plot). Although the scree plot suggests that the inclusion of the third component may improve the model, the residuals revealed that any model improvement would be minimal. Consequently, two factors were retained.

Figure 3: Scree Pot of Section VI

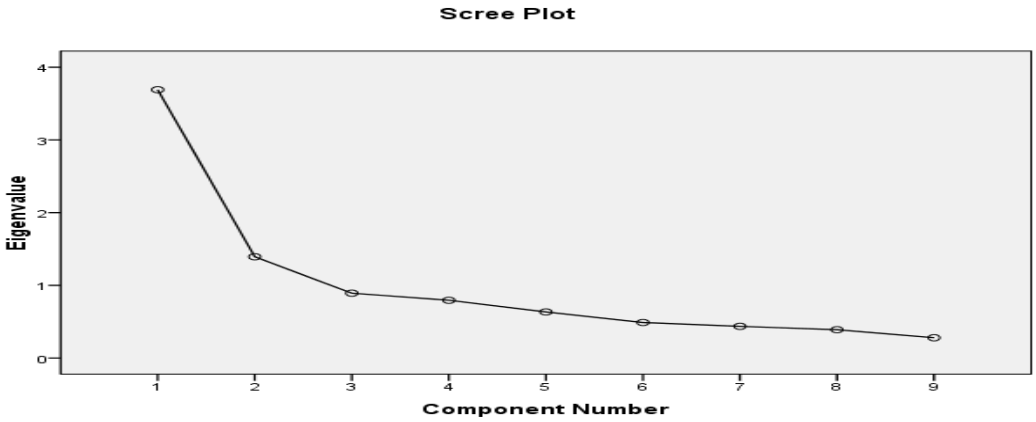


Table 5 presents the loadings for each factor. Factor 1 consisted five of the nine variables: *Colleague, Parent, Administrator, Funding and HighExp*. Items with the highest loadings were *Colleague and Parent* as .845. These items addressed supports that were required for enacting the differentiated instruction. This factor was then named as "***Prerequisites"***. The second factor included the remaining four items: *requirement, cooperative, CPD and AllLearn*, addressing factors with more likelihood to motivate teachers to adopt differentiated instruction. Factor 2 was then labeled ***"Motivation".***

Table 5: Summary of Factor Loadings

Factor Label	Questionnaire Items	Loadings
Factor 1: Prerequisites		
Colleague	49. Collegial support	.848
Parent	48. Parental support	.825
Administrator	50. Administrative support	.778
Funding	46. Having available resources (funding, curriculum materials, supplies & equipment, etc.)	.602
HighExp	51. High expectations about students	.564
Factor 2: Motivation		
Requirements	54. Mandated requirement for minimum student achievement	.844
Cooperative	53. Cooperative students (less behavioral problems)	.804
CPD	47. professional development opportunities on different professional development opportunities on different	.536
AllLearn	52. Beliefs that every student can learn.	.430

Results of Section VII – Beliefs about students with different personal frame factors

In Section VII, there are 12 variables to measure: students in poverty (*poor),* Han students from low SES*(Han),* Non-Han students from low SES *(Non-Han),* low achievers (*low),* slow learners (*slow),* Minority students with fluent Chinese *(fluent),* Minority students with broken Chinese *(broken),* Female students *(female),* Male students*(male),* Students with well educated parents *(educated),* Students with non-educated parents *(uneducated),* poorly disciplined students without persistency *(undisciplined).* Principal Component Analysis was conducted retain two components and apply the Varimax rotation. The four criteria – eigenvalue, variance, scree plot and residuals, indicated that a two-component solution was appropriate. Same as in Section VI, only two factors were retained in this Section, which increased the model fit as it decreased the number of residuals exceeding the .05 criteria.

Table 6: Total Variance for Two-Component Solution (Total Variance Explained)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.564	71.366	71.366	8.564	71.366	71.366	7.030	58.587	58.587
2	1.556	12.970	84.335	1.556	12.970	84.335	3.090	25.748	84.335
3	.374	3.118	87.453						
4	.350	2.916	90.369						
5	.265	2.211	92.580						
6	.209	1.744	94.324						
7	.189	1.574	95.898						
8	.148	1.232	97.130						
9	.118	.986	98.116						
10	.097	.807	98.923						
11	.074	.617	99.540						
12	.055	.460	100.000						

Extraction Method:
Principal Component Analysis

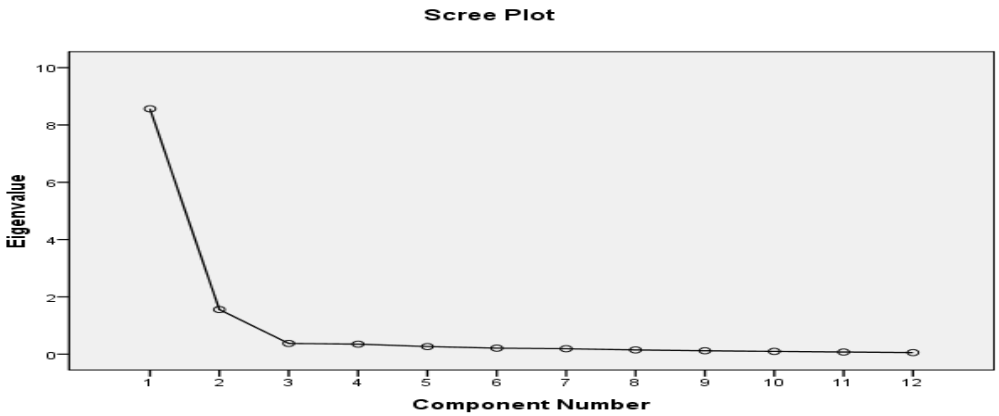
Communalities

	Initial	Extraction
55. Students in poverty.	1.000	.878
56. Han students from low SES	1.000	.887
57. Non-Han students from low SES	1.000	.838
58. low achievers	1.000	.858
59. slow learners	1.000	.871
60. Minority students with fluent Chinese	1.000	.817
61. Minority students with broken Chinese	1.000	.773
62. Female students	1.000	.833
63. Male students	1.000	.886
64. Students with well educated parents	1.000	.858
65. Students with non-educated parents	1.000	.778
66. Poorly disciplined students without persistency	1.000	.844

Extraction Method: Principal Component Analysis.

The scree plot was then assessed and indicates that the eigenvalues after three components levels off (see Figure 4 scree plot). Although the scree plot suggests that the inclusion of the third component may improve the model, the residuals reveal that any model improvement would be minimal. Consequently, two factors were retained.

Figure 4: Scree Pot of Section VII



After rotations, the first factor accounted for 58.59% of the total variance in the original variables, and the second for 25.75%. Two factors then accounted to 84.34% (>70%). Table 7 presents the loadings for each component. Factor number 1 consisted nine of the twelve variables: *poor, Han, Non-Han, fluent Mandarin, broken Mandarin, female, male, educated, and uneducated*. Items with the highest loadings were *Poor and low-SES*. These variables had positive loadings and addressed personal frame factors. The first factor was named ***"Beliefs about Students with different personal/cultural backgrounds"***. The second factor included the remaining three variables: *undisciplined, slow and low*. All three variables have positive loadings. Factor number 2 was labeled ***"Deficit beliefs about students"***. See the table below.

Table 7: Summary of Factor Loadings

Factor Label	Questionnaire Items	Loadings
Factor 1: ***Beliefs about Students with different personal/cultural backgrounds***		
Poor	55. Students in poverty.	.918
Han	56. Han students from low SES	.916
Educated parents	64. Students with well educated parents	.902
Male	63. Male students	.898
Non-Han	57. Non-Han students from low SES	.882
Female	62. Female students	.860
Fluent Mandarin	60. Minority students with fluent Chinese	.848
Uneducated parents	65. Students with non-educated parents	.800
Broken Mandarin	61. Minority students with broken Chinese	.776
Factor 2: ***Deficit beliefs about students***		
Undisciplined	66. Poorly disciplined students without persistency	.907
Slow	59. slow learners	.874
Low achiever	58. low achievers	.858

Summing up, the EFA reveals that four factors were retained in Section II, two in Section VI and two in Section VII. The results are summarized in the table below:

Table 8: Summary of the Retained Factors

	Section II	Section VI	Section VII
Factor 1	Deficit pedagogical beliefs	Prerequisites for teaching different student groups	Beliefs about Students with different personal/cultural backgrounds
Factor 2	Beliefs about Innate Ability	Motivation for teaching different student groups	Deficit beliefs about students
Factor 3	Beliefs about traditional/rote learning		
Factor 4	Pedagogical Contents: Grouping students for better learning		

Correlation

Prior to further statistical analysis, it is also very helpful and useful to conduct correlations to investigate: 1) whether or not there is any correlation between the variables; 2) the strength and direction of the relationships. The purpose was to find out where a correlation existed to identify patterns and warrant further investigation rather than to make an assumption of causality. Pearson correlations were conducted for this study to explore relationship between school, gender, ethnicity, income, degree, language ability, growing-up surroundings, teaching experiences, subject (art or science) and four factors in Section II, two factors in Section VI, and two factors in Section VII. Table 9 summarizes the significant correlations between variables. To serve the purpose of this study, three schools were combined into dichotomies: Schools 1 and 2 (more Han) as one, and School 3 (more Turkic) as the other. Ethnicity was combined into two categories as well: Han and Minority.

Table 9: Summary of Significant Correlations Only

	SDICH	Gender	Income	Degree	Subject	Grow-up with	Language
Section II							
F1	-.273**	.167**				-.156*	-.177**
F3	-.199**						
Section VI							
F1				.150*			
Section VII							
F1: Students with deficit characteristics	-.262**	.180**				-.230**	
F2: Learning Ability	-.257**						
Ethnicity	.184**				-.121*	.211**	.297**
Teaching Years			.252**	-.125*			

* Correlation coefficient is significant at the 0.05 level (2-tailed).
** Correlation coefficient is significant at the 0.01 level (2-tailed).

The table above has shown several strong or very strong significant correlations between variables: 1) Very strong correlations between two factors out of four in Section II and school, gender, grow-up surroundings and language ability; 2) Strong correlation between degree and factor 1 in Section VI; 3) Very strong correlations between two factors in Section VII and school, gender and growing-up surroundings; 4)Very strong correlations exist between ethnicity and school, growing-up surroundings, and language ability; 5) Strong correlations between ethnicity and subjects; and 6)Very strong correlations between years of teaching and income, and strong correlations between years of teaching and degree.

Summary

The exploratory factor analysis was conducted to prepare for the further statistical analysis. The screening the data in terms of missing data, outliers, normality, linearity and homoscedasticity has confirmed that the data set is fairly normal with one outlier eliminated (Case No. 78). With the PCA, the data was regrouped and closely related factors (components/constructs) were retained for more meaningful analysis and understanding of the data. There were four factors retained in Section II, two factors in Section VI, and two factors in Section VII. The Pearson correlations revealed that correlations existed between Section II's factor 1 and 3 and school, gender, grow-up surroundings and language ability; Section VI's factor 1 with degree, and Section VII's factors 1 &2 and school, gender and growing-up surroundings. The further statistical analyses including t-test, ANOVA and MANOVA were conducted based on these correlations.

Appendix N: Descriptive Information of the Participants

Gender

		Frequency	Percentage	Valid Percentage	Accu. Percentage
Valid	Male	80	30.1	30.1	30.1
	Female	186	69.9	69.9	100.0
	Total	266	100.0	100.0	

It can be seen from the table that male participants are 30.1%, while female 69.9%.

Race

		Frequency	Percentage	Valid Percentage	Accu. Percentage
Valid	Uygur	30	11.2	11.2	11.3
	Han	190	71.4	71.4	82.7
	Hui	36	13.5	13.5	96.2
	Others	10	3.8	3.8	100.0
	Total	266	100.0	100.0	100.0

It can be seen from the table that 71.4% are Han, 13.5%, Hui, 11.2%, Uygur and 3.8%, others.

Income

		Frequency	Percentage	Valid Percentage	Accu. Percentage
Valid	2000	59	22.2	22.2	22.2
	3000	205	77.1	77.1	99.2
	4000	2	.8	.8	100.0
	Total	266	100.0	100.0	

It can be seen from the table that 99.2% of participants have income below RMB Y3000, among which 77.1% have RMB Y3000.

I Grew up with ….

		Frequency	Percentage	Valid Percentage	Accu. Percentage
Valid	Han only	99	37.2	37.2	37.2
	Minority only	18	6.8	6.8	44.0
	Mixed	149	56.0	56.0	100.0
	Total	266	100.0	100.0	

It can be seen from the table that 37.2% of the participants grew up with Han only, and 56% grew up with mixed population of Han and minorities.

Subjects that participants teach.

		Frequency	Percentage	Valid Percentage	Accu. Percentage
Valid	Chinese	57	21.4	21.4	21.4
	English	65	24.4	24.4	45.9
	Mathematics	47	17.7	17.7	63.5
	Physics	20	7.5	7.5	71.1
	Social science	43	16.2	16.2	87.2
	Biology	17	6.4	6.4	93.6
	Others	17	6.4	6.4	100.0
	Total	266	100.0	100.0	

It can be seen from the table that 24.4% of the participants teach English and 21.4% teach Chinese. 17.7% teach Math, and 16.2% teach social science.

Highest Degree

		Frequency	Percentage	Valid Percentage	Accu. Percentage
Valid	Associate	37	13.9	13.9	13.9
	Bachelor	204	76.7	76.7	90.6
	Master	15	5.6	5.6	96.2
	Others	10	3.8	3.8	100.0
	Total	266	100.0	100.0	

It can be seen from the table that 76.3% of participants own bachelor degree, and 13.9% with associated degree.

Participants' language ability

		Frequency	Percentage	Valid Percentage	Accu. Percentage
Valid	Monolingual	142	53.4	53.4	53.4
	Bilingual	105	39.5	39.5	92.9
	Trilingual	19	7.1	7.1	100.0
	Total	266	100.0	100.0	

Cross-tabulation of Race and Language Ability

			Language Ability			
			Monolingual	Bilingual	Trilingual	Total
Race	Kazak	Number	1	6	4	11
		% of race	9.1%	54.5%	36.4%	100.0%
		% of language	.7%	5.7%	21.1%	4.1%
	Han	Number	114	72	4	190
		% of race	60.0%	37.9%	2.1%	100.0%
		% of language	80.3%	68.6%	21.1%	71.4%
	Hui	Number	21	11	4	36
		% of race	58.3%	30.6%	11.1%	100.0%
		% of language	14.8%	10.5%	21.1%	13.5%
	Others	Number	4	3	3	10
		% of race	40.0%	30.0%	30.0%	100.0%
		% of language	2.8%	2.9%	15.8%	3.8%
	Uygur	Number	2	13	4	19
		% race	10.5%	68.4%	21.1%	100.0%
		% of language	1.4%	12.4%	21.1%	7.1%
Total		Number	142	105	19	266
		% of race	53.4%	39.5%	7.1%	100.0%
		% of language	100.0%	100.0%	100.0%	100.0%

Cross-tabulation of Gender and Language Ability

			Language Ability			
			Monolingual	Monolingual	Monolingual	Language Ability
Gender	Male	Number	48	24	8	80
		% of gender	60.0%	30.0%	10.0%	100.0%
		% of language	33.8%	22.9%	42.1%	30.1%
	Female	Number	94	81	11	186
		% of gender	50.5%	43.5%	5.9%	100.0%
		% of language	66.2%	77.1%	57.9%	69.9%
Total		Number	142	105	19	266
		% gender	53.4%	39.5%	7.1%	100.0%
		% of language	100.0%	100.0%	100.0%	100.0%

Curriculum Vitae

Hongyan Zhang Newton

EDUCATION

University of Washington, College of Education, Seattle, WA. 2007-2011

PhD, Teacher Education, Learning, & Development

Cognates: curriculum and instruction development in China and in US; cultural diversity in schooling; Comparative education

Dissertation: Chinese teachers' beliefs and practices about majority and minority students in Xinjiang Uygur Autonomous Region

Shanghai International Studies University, Shanghai, China. 1993-1996

Master of Art, English Literature

Thesis: Symbolism in "The Catcher in the Rye" by J.D. Salinger

Shanghai International Studies University, Shanghai, China. 1987-1989

Bachelor of Art, *English language*

Changji Teachers' College, Xinjiang, China 1981-1983

Associate's Degree in Education, *English Instruction*

PUBLICATIONS

Zhang, H. (2000). "The Symbols in *The Catcher in the Rye* by J.D. Salinger," *Journal of Xinjiang University, 32 (2), 37-52*.

PRESENTED PAPERS

Zhang, H. (2008, June). *Using the System Dynamics Process on News Article in the Classroom*, Paper presented at Systems Thinking and Dynamic Modeling Conference for K-12 Education, Wellesley, Massachusetts

McDiarmid, W., Bier, M., Reece, A., Westover, A., Nessan, T., Microulis, Z. & Zhang, H. (2008, September). *Democratic Pedagogy: How do we know it when we see it?* Paper presented at the Annual National Network for Educational Renewal Conference, University of Texas, Arlington, TX.

PUBLISHED TRANSLATIONS

- "Study on Structures of Sub-grade/Pavement and Construction Techniques for the Taklimakan Desert Highway," by Li Zhinong and Jin Changning, *China Science*, 2005.
- Project Appraisal Document for Kuisai Highway Project printed by World Bank, 2002.
- "How does a chicken cross the road," *Changji Daily*, 1993.
- "The Valley Between," a Hunan Province periodical, 1990.
- Television documentaries, including:
    - "The Death of a Wild Horse," winner of Jingying Prize of Chinese TV, March 2000
    - "A Boy of Horseback"
    - "Music Instrument"
    - "The Wedding Day"
    - "Home in the Desert," candidate in German Gertingen Human Movie Festival, North Europe Human Movie Festival, and Brussels Movie Festival
    - "Asian Center and the Herdsman," winner of Academy Prize of Chinese Documentary, 2000; nominated for Jingying Prize of Chinese TV

TEACHING EXPERIENCE

COLLEGE LEVEL

University of Washington, Asian Language & Literature Department, Seattle,

Lecturer, Chinese 138, **Summer, 2011**
Teaching Associate, Chinese 202, **Winter, 2011**
Predoctoral Lecturer, Chinese 111, **Fall, 2010**
Teaching Assistant, Chinese 102, 138, 138 **Winter & Summer 2009 & Summer 2010**

Changji Teachers' College, English Department, Xinjiang, China 1989-1993
Lecturer, Taught English intensive reading, grammar, and English teaching methodology.

K-12 LEVEL

Beverly Park Elementary School, Seattle, WA **Fall 2010**
Boeing After-school Program, helping students learn math and science

Urumqi, Xinjiang, China **1993-2005**
Teacher, SELF-EMPLOYED**,** Taught English to school-aged children from five to eighteen on weekends.

Changji #1 Middle School, Xinjiang, China **1983-1987**
Teacher, Taught basic English language skills, from sixteen to eighteen years old

Wujiaqi #2 Middle School, Xinjiang China **1979-1981**
Teacher, Taught basic English language skills in elementary, middle, and high schools (from 9 to 17 years old)

RESEARCH EXPERIENCES

Research Assistant: University of Washington, College of Education, **2008-2011**

- Teachers for New Era Project, funded by the Carnegie Corporation of New York;
- The project on pathways of teacher preparation locally and globally;
- The project on quality evaluation of teacher preparation programs

CONFERENCES ATTENDED

Systems Thinking and Dynamic Modeling Conference for K-12 Education, Wellesley, Massachusetts, July 28-30, 2008
Sustainability Education Conference, Bainbridge Island, Seattle, July 26-29, 2010
STEM Summit, Linwood Convention Center, August 6, 2010
University of Washington TA Conference on Teaching and Learning, September 20-22, 2010
Science and Sustainability: Making Connections in a Diverse World. EEAW and WSTA, Poulsbo, WA, March 18-20, 2011
American Educational Research Association (AERA), New Orleans, Louisiana, April 8-12, 2011
Systems Thinking in Schools Institute, Troutdale, Oregon, June 3-4, 2011

TRANSLATING & INTERPRETING EXPERIENCE

Xinjiang High Grade Highway Administration Bureau, China **1996-2007**
Training and Foreign Affairs Officer, 1998-2007

- Negotiated with 11 international consulting companies for design of 12 overseas study tours and training courses in US, Canada, Australia, Italy, Britain, France, and Japan, to

improve professional skills and operational efficiency of staff, and to learn new techniques and methods of highway design, construction, operation, and maintenance.
- Tours and training topics include highway engineering supervision, highway safety, environmental protection and monitoring, highway construction, highway operation and management, management of public affairs, financial management, auditing, highway laws and regulations, highway transportation management, highway toll and telecommunication, highway planning and design and highway maintenance.

Lead Translator and Interpreter, 1996-2007

- Participated in all phases of three large-scale highway projects financed in part by World Bank, including preliminary preparation, construction, maintenance, and operation. Managed staff that varied from three to seven translators.
- Live verbal interpretation of high-level negotiations between Xinjiang Government and the World Bank and Asian Development Bank. Translated the Manual of Financial Administration, Bookkeeping Operation and Auditing under Urumqi Urban Traffic Development Project financed by World Bank, Environmental Impact Assessments, Environmental Action Plans and Environmental Monitoring Reports, Ethnic Community Action Plans, Social Assessment Plans, Annual Audit Reports, Institutional Reform and Development Plans, and Studies on Development Module of Freight Transportation by Road in Xinjiang and other reports.

SELF-EMPLOYED, Urumqi, Xinjiang, China **1993-2006**

Translator / Interpreter

- Provide translation services to various highway and bridge construction companies as well as academic institutions and television stations.
- Translated television documentaries for Xinjiang TV Broadcast Station.
- Translated bidding documents and engineering feasibility studies for construction companies.

OTHER PROFESSIONAL DEVELOPMENT

Selected training programs and seminars include:

- Telecommunication System, SNC-LAVALIN International, Inc.; Canada.
- Highway Maintenance, VICROADS; Australia.
- Environmental Protection during Highway Construction, Bucher, Willis & Ratliff Corporation; US.
- Expressway Management System, Laws and Regulations, Italconsult S.p.A; Italy, France, and UK.

CERTIFICATIONS

Lecturer Certificate, Provincial Education Committee of Xinjiang, China, 1991.
Teaching Certificate for Higher Education, National Education Committee of China, 1996.
Junior Translator Certificate, Personnel Department of Xinjiang Uygur Autonomous Region, China, 1998.
Senior Translator Certificate, Personnel Department of Xinjiang Uygur Autonomous Region, China, 2002.

PROFESSIONAL MEMBERSHIPS

American Educational Research Association (AERA)