2-27-2017

An Exploration of Experiences of Low Socioeconomic Chinese Students Who Achieved High Scores on the National College Entrance Exam

Dongfang Liu

UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

AN EXPLORATION OF EXPERIENCES OF LOW SOCIOECONOMIC CHINESE STUDENTS WHO ACHIEVED HIGH SCORES ON THE NATIONAL COLLEGE ENTRANCE EXAM

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Dongfang Liu

College of Education and Behavioral Sciences
Department of Leadership, Policy and Development:
Higher Education and P-12 Education
Educational Leadership and Policy Studies Program

May, 2017

This Dissertation by: Dongfang Liu

Entitled: *An Exploration of Experiences of Low Socioeconomic Chinese Students Who Achieve High Scores on the National College Entrance Exam*

has been approved as meeting the requirement for the Degree of Doctor of Education in College of Education and Behavioral Sciences, Department of Leadership, Policy, and Development: Higher Education and P-12 Education, Program of Educational Leadership and Policy Studies.

Accepted by the Doctoral Committee

_____
Linda Vogel, Ph.D., Research Advisor

_____
Michael Cohen, Ed.D., Co-Research Advisor

_____
Heng-Yu Ku, Ph.D., Committee Member

_____
Jingzi Huang, Ph.D., Faculty Representative

Date of Dissertation Defense_____

Accepted by the Graduate School

_____
Linda L. Black, Ed.D.
Associate Provost and Dean
Graduate School and International Admissions

ABSTRACT

Liu, Dongfang. *An Exploration of Experiences of Low Socioeconomic Chinese Students Who Achieve High Scores on the National College Entrance Exam*. Published Doctor of Education dissertation, University of Northern Colorado, 2017.

Although the economy has been developing at a fast pace for the last few decades, there is still a relatively high low SES population within the Chinese society, which constitutes a contextual barrier to educational equity in Chinese education. Meanwhile, the Chinese government has been administering assistance policies in education to promote education equity, such as the milestone policy introduced by the *Compulsory Education Law* that requires all school-age children to attend grades one through nine for free. This policy has brought immense prosperity to the majority of citizens. However, Chinese education still faces a large array of challenges pertaining to the imbalanced development, funding shortages, lack of qualified educators, household registration system, family mobility, and so forth. These challenges compromise low SES students' educational attainment and performance on high-stake tests, such as the National College Entrance Exam (NCEE). Considering the high value of the NCEE, understanding what factors affect low SES students' performance on this test has a practical value to educational practices. School leaders and policy makers need to be informed and aware of these factors in order to more effectively support low SES students in the Chinese education system.

Nonetheless, the influences of SES on test scores, especially the Chinese NCEE, remain largely unexplored in existing literature. The author aimed to use the findings of the study to inform Chinese policy makers, building-level leaders, and educators as to how to better support students from low SES families and eventually improve social justice and education equity in China. Regardless of the adverse situation, quite a number of low SES Chinese students still seized college education opportunities by excelling on the NCEE due to their extraordinary diligence and work ethics. In this context, the successful examples of low SES students on the NCEE is worthy of research to reveal what factors influenced their success on the NCEE.

The research used individual interview to collect qualitative data and tried to explore the experiences of the low SES Students with high achievements. There were 18 participants joined this study. The findings from this study open a path, possible methods, and advice on how to replicate the participants in this study successful experience on a larger scale and to extend those benefits to a larger number of low SES students, their families, and their communities. Based on the findings, key factors for the success of the participants were already present during their pre-high school trajectories and before they have received any significant financial and educational benefits through the Hongzhi program. Therefore, the author focused on developing, strengthening, and multiplying those factors, rather than on the aspect of allocating financial resources, which nevertheless would be necessary to implement those proposals. Those financial resources, obviously, lay beyond the scope and purposes of the study. In other words, the author wanted to make ample use of already existing resources that may have not been used so far or are misunderstood, underused, and underestimated.

Finally, the recommendations based on the findings of this study promote the development of a community approach to strengthening education by including schools, educators, families, and students whose combined efforts could benefit each of the stakeholders in a synergistic cycle. The author envisions that the process of helping low SES students to succeed in their education paths could in turn help to develop further the fabric of the local low SES communities. Thus, the process would help in transforming schools into community centers where everybody can take part in the multifaceted teaching process, in learning and in receiving the benefits of educational achievement, each giving and receiving according to their different roles, assets, and contributions, to the overall benefit of Chinese society.

DEDICATION

To my wife, Shirley Zhang, thank you for your tremendous sacrifice to support my life and career, although it meant for us to be thousands of miles away from each other for months at a time.

To my dad, Hongquan Liu, for being my role model to follow through life.

To my dearest advisor and mentor Dr. Linda Vogel and to Dr. Heng-yu Ku, thank you for your unswerving support and assistance throughout my doctoral program and this study, and for making me feel as if I were a member of your own families.

To my committee members, Dr. Cohen and Dr. Huang, thank you for being my dissertation supervisors and helping with the most important project in my doctoral education.

Last, but by no means less, to my daughter, Ailing Liu, thank for arriving to our lives. You are the greatest gift of love in our lives, and will be forever.

TABLE OF CONTENTS

CHAPTER I. FRAMING THE INQUIRY 1

Education Equity in China 9

The Long History of the Test-oriented Chinese Education System 17

Significance of the Problem 28

Purpose of the Study 30

Limitations 31

Definition of Terms 37

Summary 39

CHAPTER II. THE REVIEW OF RELEVANT LITERATURE 40

Chinese Education System 40

Socioeconomic Status Factors' Impact on Education 52

Teachers' Influences on Student Academic Success 61

Impact of Educational Leadership on Students' Academic Success 63

Low Socioeconomic Status Influences on Chinese Education 65

Summary 76

CHAPTER III. METHODOLOGY 78

Qualitative Tradition 78

Epistemology: Constructionism 80

Methodology 81

Method and Research Context 83

Trustworthiness 89

Summary 92

CHAPTER IV. FINDINGS 94

Schools in Context 94

Participants in Context 98

Interview Findings 108

Summary 134

CHAPTER V. DISCUSSION 136

Analysis of Challenges in Low Socioeconomic Status Students' Education 138

Factors Supporting Low Socioeconomic Status Students' Educational Success and High National College Entrance Exam Scores 145

Low Socioeconomic Status Student Educational Attainment Model 149

Implications for Chinese Educational Leadership 151

Future Research 159

Summary 160

REFERENCE 162

APPENDIX A. INITIAL INTERVEWEE CONTACT 194

APPENDIX B. CHINESE INITIAL INTERVIEWEE CONTACT..... 196

APPENDIX C. CONSENT FORM FOR PARTICIPANT..... 198

APPENDIX D. CHINESE CONSENT DOCUMENT..... 201

APPENDIX E. INSTITUTIONAL REVIEW BOARD APPORVAL 203

LIST OF TABLES

1. Example of Coding Process 89

2. Participants' Academic Information 98

3. Themes for Low SES Students Educational Experiences..... 110

LIST OF FIGURES

1. The Poverty Alleviation Policy Under the Current Chinese Education System…..... 13

2. Low SES Student Educational Attainment Model..... 150

CHAPTER I

FRAMING THE INQUIRY

The history of Chinese education is almost the history of China. The influence of the educational process in China has shaped Chinese society. Dynastic changes, foreign invasions, floods, and famines have constantly interrupted the orderly course of events, but the controlling, stable element has been the state system of education which forged the thinking of the general social caste from which most government officials were selected. Until the influence of Western forces triggered unprecedented changes in its ancient culture, China had been practicing its own highly standardized educational tradition for thousands of years (Lucas, 1974). It is reasonable to argue that the exceptional vitality displayed over the centuries by Chinese traditional education culture could be attributed to its integrity and historical continuity of the unique educational philosophy and sociopolitical tradition (Lucas).

Throughout Chinese education history, one of the main themes for education was to maintain the state machine by sorting intelligent individuals into the government system. This sorting process had profound value for people from low socioeconomic status (SES) families. Traditionally, low SES people saw education as a ladder to climb to raise their economic status by passing government-organized tests. Education and testing have served as a critical selection process throughout Chinese history, and the

ideology of test-oriented education is still impacting contemporary educational policy (Chen, 1981; Hayhoe, 1984)

Chinese Low Socioeconomic Families in Context

The concept of socioeconomic status (SES) as a tool to measure individual family social resources has been applied in many fields, such as psychology, sociology, medicine, and education. In different areas, due to the different focus of the research, the definition of socioeconomic status and its measurement methods have been discrepant and diverse (Sirin, 2005). Generally speaking, SES mainly includes three aspects: parental income; parental occupational status; and parental education level (Bollen, Glanville & Stecklov, 2001; Bornstein &Bradley, 2003; Lynch & Kaplan, 2000; Sirin, 2005). However, since parents' income, education level, and occupation normally have a strong statistical correlation, researchers were inclined to use income as a key parameter to evaluate the impact of SES on education (Bornstein &Bradley, 2003; Lynch & Kaplan, 2000; Sirin, 2005). For instance, much of the SES research in America has employed free and reduced lunch in schools as an indicator of family income as well as school poverty rates to study the relation between SES and children's school success (Sirin, 2005). However, Chinese education does not have a program that provides free and reduced lunch in schools. Hence, an alternative practical indication for student socioeconomic status is the need-based education grant program in China, especially at the high school and higher education levels.

In China, the economy has had steady development in recent decades, and many social domains have made advancements, but adverse consequences have also occurred under the context of economy-oriented policy (Zhang, Li, & Xue, 2015). Currently, the

wealth gap in China has deteriorated and families' social status and economic income have been gradually bifurcated (Li, 2013). This trend has caused the attention and concern of education leaders and policy makers, because many studies have demonstrated that the impact of family socioeconomic status can affect many aspects of low SES children's education (Jimerson, Egeland, Sroufe, & Carlson, 2000; Li, 2013; Sirin, 2005).

Chinese Low Socioeconomic Status Population

Since the 1980s, China has steadfastly promoted the Reform and Opening-Up Policy, which was aimed at establishing a socialist market economic system (Lv, 2007). Under this policy, a free market economy has been maturing steadily which has enhanced social productivity and comprehensive national strength (Lv). In addition, the development of various social undertakings had led to a historical leap in people's living standards. Between 1978 and 2006, China's gross domestic product had more than a 9% average annual growth rate (Lv). Even under the influence of the Asian financial crisis of 1997, China still maintained an 8% growth rate in early 2000 (Lv). Between 2005 and 2016, China's average economic growth has been higher than 7.5% (National Bureau of Statistics of China, 2017a). Based on the data presented, it is safe to claim that China has become the fastest developing country in the last twenty years.

The implementation of the Reform and Opening-Up Policy has built a prosperous economy in China and has greatly improved people's living standards. The population of people living in poverty in China's rural areas has been reduced from 250,000,000 in 1978 to 23,650,000 in 2005, and the number is still dropping (Lv. 2007). Lv reported that Chinese Ministry of Finance arranged special funds for poverty alleviation, which increased from one billion Yuan in 1980 to 13 billion Yuan in 2005, amounting to a total

investment through those years of more than 115 billion Yuan. A considerable percentage of the special funds for poverty alleviation were used for building new schools, teacher preparation training, and students' education subsidies and educational aid for students **(**Lv**)**. The United Nations and the World Bank have released human development reports that praised China as the epitome of a poverty alleviator (Mori, 2013; World Bank, 2008**).**

Even though China has achieved recognizable economic success, it still faces a number of social problems. According to several studies, there is a drastic gap between urban and rural areas in the minimum living standards for residents (Chu, Leonhardt, & Liu, 2015; Zhang et al., 2015; Zhao, 2007). A recent report from the Chinese government disclosed that the overall poverty population was 55,750,000 in 2016 (National Bureau of Statistics of China, 2017b). Other recent reports revealed that the transition from a planned economy to a market economy in China did not effectively close the wealth gap in urban areas (The National Development and Reform Commission, 2014). The report documented that the proportion of high-income people in urban areas was less than 10%, and middle-income people accounted for 37% of the urban population in 2014 (The National Development and Reform Commission). However, this report pointed out that China's urban low-income group is still relatively large. China's urban poverty population reaches about 25,000,000 people, nearly 4% of the urban population based on the sixth national census data. Congruently, the State Development and Reform Commission (2015) stated that the low-income population in Chinese cities is relatively high, ranging from 3% of the urban population in the eastern provinces to more than 10% in the western ones. The low-income group in Chinese urban areas mainly consists of the following groups of people: laid-off workers from state-owned enterprises; migrant

workers; elderly and disabled people; retirees; and the newly unemployed from private sectors (Chu et al., 2015; Zhao, 2007).

Among them, migrant workers from rural areas account for a considerable proportion of the urban low-income group, and this number is increasing at a rapid pace (Yamamoto, Li, & Liu, 2016; Zhang et al, 2015). Most of the migrant workers have school-age children in their families (Lv, 2007; Yamamoto et al., 2016; Zhang et al., 2015). Since the Reform and Opening Up policy, the acceleration of China's urbanization and industrialization has attracted a large number of farmers moving into cities to fill job vacancies in urban industries. This trend has resulted in a massive tide of migrant workers to Chinese cities. The "tide" began in the late 1980s and gradually expanded its scale in the following decades (Chu et al., 2015; Zhao, 2007). The Chinese Fifth National Census in 2000 showed that the size of the floating population comprised more than 120 million people. It included nearly 20 million children of migrant workers who moved into the Chinese cities with their parents, of which nearly 1 million of school-age children could not be admitted in time by the urban educational system (The National Development and Reform Commission, 2014). Much research has suggested that the education for rural migrant workers' children in cities has become one of the most urgent challenges for educators and policy makers in China (Zhang et al., 2015; Sicular, Yue, Gustafsson, & Li, 2007). Considering the magnitude of the group of migrant workers' children, it is assumed that their performance in education, especially in standardized tests, reflects on the overall quality of Chinese education (Lv. 2007; Wang, 2007; Yamamoto et al., 2016; Zhao, 2007; Zhang et al., 2015).

Mobility of Families with Low Socioeconomic Status

One of the characteristics of Chinese low-income families that had a crucial impact on children's education is their high mobility (Luo, 2009; Peng, 2004; Yamamoto et al., 2016). Zhao (2007) claimed that low-income families in China generally have a higher mobility rate compared with many of their counterparts. One of the causes behind this added mobility is that the development of China's urbanization constantly threatens large old urban districts, and many of them have been torn down to make room for new construction (Zhao). This has been exacerbated by the fact that many local governments view old urban districts as inappropriate obstacles for modern city development and as having a negative impact on a prosperous national image (Zhao). Such old urban districts normally have a high density of low-income population which have had to move to new places arranged by the government or receive a financial reimbursement (Zhao). Those residents opting to receive a financial reimbursement would be responsible to find a new place for their families, as well as for their children's schooling (Chu et al., 2015; Luo, 2009; Peng, 2004; Yamamoto et al., 2016).

Another factor behind the perceived high mobility of Chinese low-income families is that a large proportion of individuals coming from rural areas move from one city to another trying to find suitable jobs to support their families. This is a common phenomenon for low-income families from western rural China where local economies are relatively underdeveloped and cannot provide enough job positions or competitive salaries to support the whole family (Luo, 2009). The mobility of the parents often results in their children moving along with them (Zhao, 2007). This passive migration has a profound impact on their children's education as the migrating families might lack the

proper household registration documents in the new cities necessary for their children to attend school (Luo, 2009; Peng, 2004). The household registration system, known as "Hu Kou" in Chinese, has existed in China for centuries and is still being used presently as it underpins the present means of social regulation in the People's Republic of China (Angelillo, 2014). An individual's "Hu Kou" determines whether that person can enjoy certain social welfare resources in a certain location, including education (Angelillo). The Chinese government uses the "Hu Kou" to try to attach people's place of residence to one location, restricting their mobility (Angelillo, 2014; Chen, 2015; Huen, 1996). Generally speaking, people can only enjoy their education opportunities at the origin of the household registration permit. In this regard, children of migrant families, especially low-income ones, might not be able to obtain equal educational opportunities as their urban counterparts (Angelillo, 2014; Luo, 2009; Peng, 2004).

Although, with the assistance of the local government, an increased number of migrant workers' children could be granted permission to attend schools in cities, this group of students still experiences challenges in urban schools due to different school settings, classroom cultures, and evolution systems (Zhang et al., 2015). Before moving into their new prospective cities, the children of would-be migrants generally receive their education through rural schools, urban informal education institutions, or a mixture of the two (Zhang et al.). The hybrid education experience reduces the education performance of migrants' children which exacerbates the education inequality for Chinese low-SES students (Zhang et al.). It is often the case that schools from different regions have different curriculum and learning standards, adding the extra burden to migrant workers' children of having to adapt to different school settings and learning

cultures when moving around to different places (Zhang et al.). From the analysis of Zhang et al., education performance of migrant children was significantly lower than that of their urban counterparts, and the circumstances mentioned above were indicated to be significant factors regarding this low performance.

Low Socioeconomic Status□ Parents' Attitude towards Education

Traditionally, poor Chinese families would try to concentrate their resources on the one child who was identified as the one with the most hope of success in school performance (Wang & Cai, 2015; Xie & Postiglione, 2016). That attitude toward education reflects the Chinese belief that equates education to a social ladder to help people change and improve their economic and social class and status (Wang & Cai; Xie & Postiglione). This trend had not changed until the recent decade, because with the increasing competition in job placement, many university graduates are struggling to find a job with competitive salary (Luo, 2009). Such changes in the social reality sabotages low-income families' expectations for their children's education (Luo). Under these circumstances, more low-income parents tend to hold a view of education as useless and therefore lack the previous enthusiasm and high expectations for their children's education (Luo). A number of researchers pointed out that this phenomenon is related to the government's policy in recent decades of increasing the quantity of college educated young people (Chen & Xia, 2015; Yao, Fang, & Qian, 2014). Consequently, there has been a sudden increase of university graduates expecting to join the labor market (Chen & Xia; Yao et al.). However, as many of them have not received the type of education and training required to match the changing needs of the Chinese society, the

unemployment rate among college graduates has been increasing (Chen & Xia; Yao et al.).

The study from Zhao (2007) brought to light that 37.1% of parents from low-income families are inclined to enroll their children in technical secondary schools or vocational high schools rather than a university, which is 27.1% higher than their SES counterparts. This idea is understandable from the investment and return perspective, as the cost of attending technical secondary school or vocational high school is much lower than the cost of studying at a regular high school and then college (Qi & Wu, 2016; Zhao, 2007; Zhang, 2014). Moreover, choosing this educational pathway can shorten the length of education, allowing their children to find a job and begin to help support their family much faster (Qi & Wu; Zhao; Zhang). In this regard, it is easier for low-income families to pave the way for their children to secure a job, as this only requires fundamental job skills (Qi & Wu; Zhao; Zhang). The same study from Zhao (2007) indicated that an additional 20% of low-income families said they do not have specific expectations for their children's education, while higher SES families at least hope their children can obtain a bachelor's degree, and an increasing number of such families hope their children could obtain a master's degree or study abroad. The discrepancy between low-income parents and higher SES families illustrates the extent to which low-income families' educational expectations for their children are lower than that of their counterparts (Herman, Bi, Borden, & Reinke, 2012; Zhao, 2007; Zhang, 2014).

Education Equity in China

Promoting educational equity is one of the primary means for the Chinese government to secure low SES students' educational trajectory and school success which

eventually could lead to more successful career pathways and potentially greater economic prosperity for the nation (Chui, 2013; Wang, 2011). In the last few decades, the Chinese government has taken a number of measures such as *The Central Committee of the Communist Party of China on the Education Reform Decision* of 1985 and *China's Educational Reform and Development Outline* of 1993 (Lv, 2007). These two milestone documents in Chinese education also have had an enormous impact on the economic development of the country (Lv). Following the guidelines of these two documents, China promulgated and implemented the *Compulsory Education Law* (CEL) in the education system, and since then, the education equity in China has improved significantly (Lv). However, there is still a persistent problem of imbalanced development in China, which has had a significant impact on certain groups and aspects of overall education, especially among the low SES population (Lv). In addition, many migrant-workers and their families have been particularly affected, as they have moved either temporarily or permanently between urban centers in search of work and prosperity (Lv).

Compulsory Education Law and Supporting Policy for Low Socioeconomic Status Students

Since the founding of the People's Republic of China in 1949, the government has endeavored to secure the basic rights of all citizens and safeguard social equity, including education (Chui, 2013; Zeng et al., 2007). In order to achieve this goal, Chinese legislators proposed a bill to promote education equity and offer an equal education opportunity for every citizen. This bill was finally approved by the National People's Congress and evolved into the first educational law in China, widely known as the

Compulsory Education Law (CEL) which legislates that all Chinese citizens whose age is above 6 years must attend school and receive a free education from first grade through ninth grade (Zeng et al., 2007).

The CEL provides equal opportunities for the children of low SES families in China to attend school. According to the study conducted by Lv, from 1982 to 2005, the average years of education of the rural population above 15 years-old grew from 4.7 up to 7.3 (years) (Lv, 2007). This advancement in education equity in Chinese rural areas provided a substantial foundation for poverty alleviation amid the country's economic boom of the last 30 years which has granted China the epithet of being the "world's factory." It is understood that, without the foundation of the CEL, China could not have matched the need for a higher quality labor force (Lv).

Since the implementation of the CEL in the 1980s, Chinese education has made outstanding progress (Lv, 2007). As cited from Lv:

> In the early 1990s, the attendance rate of Chinese school age students was about 40%, while in 2005, after nine years of compulsory education, the rate had jumped to 91%. Illiteracy rates among school age students and adults were reduced from around 10% of the total population in the early 1990s down to less than 5% in 2005. During the same period, Chinese citizen's average years of education grew from less than 6 years up to more than eight years. (p. 18)

Under the ruling of the CEL, which was officially enacted in 1986 and revised in 2006, the Chinese government has purposefully allocated public educational resources to China's rural or impoverished areas, specifically Central and Western areas and ethnic minority areas (Wang, 2011; Chui, 2013). As She (2011) pointed out, additional financial and human resources and personnel were appointed to economically challenged areas and socially disadvantaged groups in order to reduce the discrepancies of education quality.

The fundamental goal of the CEL is to facilitate a balanced national development and help low SES students find equity in education (Wang, 2011; Chui, 2013).

Such progress has substantially abated the economic burden of low-SES families in rural areas and social disadvantaged groups in cities (Zeng et al., 2007). Meanwhile, the significant increase of the budgetary investment in rural compulsory education has also reduced the development gap of compulsory education between urban and rural areas (Zeng et al.). Under the administration of the CEL, most of the school-aged population in China has been offered compulsory education, and theoretically, all school-aged children's rights to basic education were guaranteed for the first time in Chinese history (Zeng et al.).

In addition to compulsory education (Grades 1-9), the central government has enacted a number of supplementary policies in order to support high school education and higher education, which were not covered by the CEL. In high school education, individual high schools appropriate a proportion of revenue from the school's tuition to award need-based and merit-based scholarships for enrolled low SES students (Shen, 2005). In addition, local governments provide education aid allocated on the number of low SES pupils in local high schools (Shen). The education aid enables low SES students to receive partially reduced or free tuition for their high school education according to their families' poverty level (Shen). As for higher education, the Chinese Ministry of Education has administered scholarships, student loans, student jobs, need-based financial aid, and tuition waivers for low SES students since end of the Cultural Revolution (Shen). All the endeavors mentioned above have been to promote education equity and help low SES student groups attain academic success. The following figure

(Figure 1) illustrates the target recipients and aid strategies aimed at poverty alleviation under the current Chinese education system (Wang, 2013).

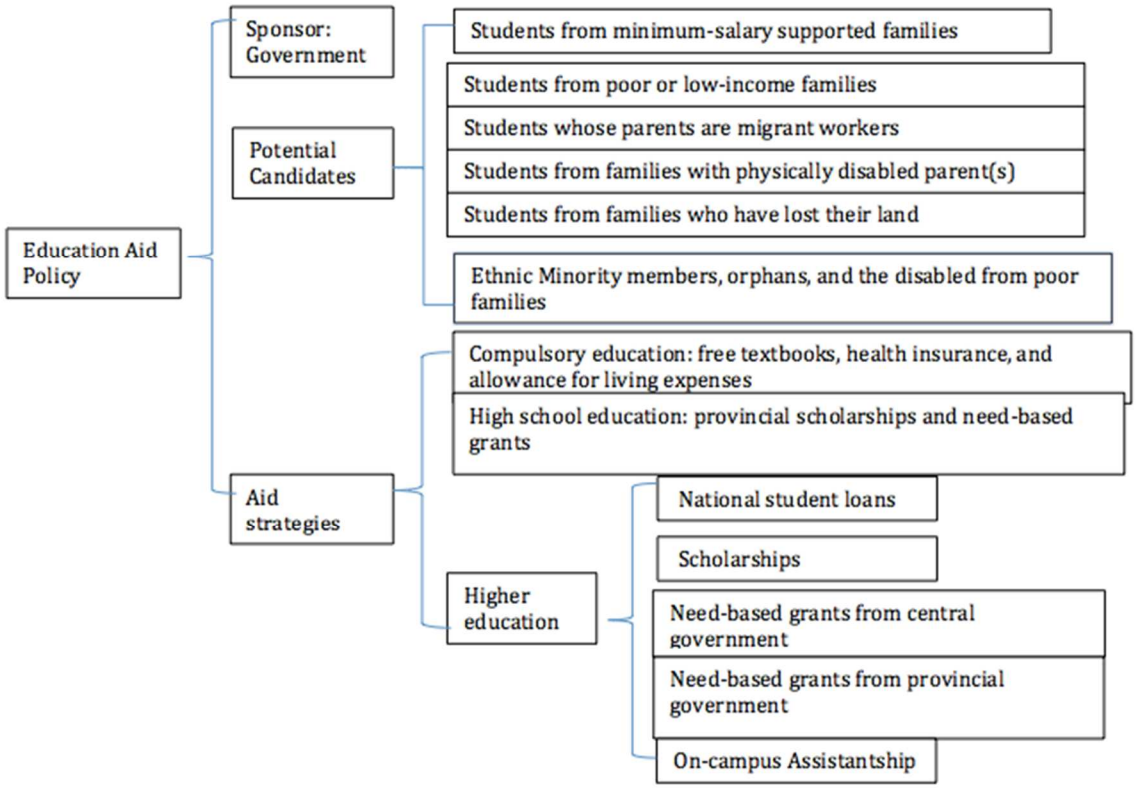

Figure 1. The poverty alleviation policy under the current Chinese education system.

Achievements in Chinese Education Equity

The biggest contribution of the CEL was to provide students from low-SES families, as well as all Chinese citizens, the legal right to attend first through ninth grades at no cost (Deng & Treiman, 1997; Law, 2014; Wang, 2012). Compulsory education has dramatically developed the quality of Chinese education in grades first through ninth and improved the education equity in China (Zeng et al, 2007). According to a report from the Ministry of Education, during the period of 1997–2005, the budgetary fund per capita in compulsory primary education increased from 333 to 1,327 Yuan (from 275 to 1,204

Yuan for rural primary schools). During the same period, the budgetary fund per capita in secondary education rose from 639 to 1,498 Yuan (from 508 to 1,314 Yuan in rural schools) (Development Planning Bureau under the Ministry of Education of PRC, 2005). Since the enactment of the CEL, the proportion of the national GDP allocated to the education budget has grown significantly (Xu, 2013).

In addition to budgetary increases, there have been other recognized developments since the implementation of the CEL. Longitudinal studies from Wang (2011) and Chui (2013) found that the existing gap of teachers with qualified schooling degrees between urban and rural areas has been greatly reduced. Based on Chui's findings, during the period of 2002–2012, the percentage of rural primary teachers with teaching licensure throughout the country increased from 96.7% to 97.8%. In this regard, the gap between urban and rural areas diminished from 2.2% to 1.5% (Chui). In the same period ending in 2012, the percentage of full-time junior high school teachers with qualified schooling degrees in urban and rural areas reached 95.98% and 91.31%, raising the percentages for urban and rural areas by 2.57% and 4.69% respectively (Chui). Based on the data, the education inequity pertaining to education human resources between urban and rural areas has been narrowed (Chui).

In addition, research has shown that the gap of the graduation rates of compulsory education among regions has gradually narrowed between the central and western regions (relatively underdeveloped in China) and the eastern regions (more developed areas) (Chui, 2013; Wang, 2011; Zeng et al, 2007). The annual growth rates of compulsory education between 1994 and 2013 in the eastern regions increased at an average of 20.63%, in the central regions at 25.59%, and the western regions saw an average growth

of 26.68% (Li, 2013). After nearly three decades of economic reform and expanded international trade activity, China's comprehensive national strength has been enhanced significantly (Lv, 2007). People's living standards have achieved an historic leap from basic needs to a financially secure level (Lv).

Imbalanced Development in Education

In spite of all the progress made and all the achievements mentioned above, the education system in China still faces severe challenges due in part to the imbalanced development of the different regions of China (Lv, 2007). The imbalanced development in China's education is clearly reflected in the difference in scope of the education budgets in the more affluent eastern developed areas of the country compared to the limited budgets in western provinces, especially in western rural areas (Lv, 2007; McMahon, 1998; Gustafsson, Li, & Sicular, 2008; Zhang et al., 2015).

The inadequate education funding is an enduring challenge to Chinese education quality and obstructs educational development in underdeveloped areas of the country (Wong, Wang, & Xu, 2015; Lv, 2007). Since the implementation of the tax system in the mid-1990s, fiscal revenue for the provincial governments, especially at the level of township government, has become increasingly restrictive (Lv, 2007). Against this backdrop, the education fund growth that relies on local finance disbursement is extremely slow in rural or less developed regions (Lv). In addition, education cost growth due to an increase in teachers' wages and the general economic inflation have created a considerable economic burden in many western provinces and added to the imbalance of education across China (Lv). Researchers have repeatedly reported that the total fiscal

revenue in some of the poor areas of China is not even sufficient to cover teachers' wages (Qi & Wu, 2016; Wong et al., 2015; Zhang et al., 2015).

The education funding allocated in China is calculated based on the enrollment number in schools (Lu, 2015; Lv, 2007; Zhang, 2014). This policy may be based on the erroneous premise that "one size fits all" (Lu; Lv; Zhang). Schools in some high-poverty areas may have a low enrollment rate resulting in the low allocation of funds for education, but nonetheless those schools may be in need of higher levels of investment in order to improve school facilities and hire teachers that are more qualified in order to improve education quality (Lu; Lv; Zhang). Consequently, under this system of funding, it is difficult to resolve and manage the difficulties faced by such schools and provide better education opportunities for low SES students (Lu; Lv; Zhang). Zhang (2006) pointed out that the average cost per pupil, as a main index to measure the level of investment in education, is a questionable policy in many aspects and that the gap of allocation of revenue per student for compulsory education (grade one to nine) in rural and urban areas remains a serious issue. The China Statistic Yearbook (2012) reported that education budgets in wealthy regions are normally two times higher than that of the underdeveloped regions, reflecting the imbalance of education investment in China.

Due to this imbalanced investment in education, rural and underdeveloped areas have a shortage of qualified staff (Li, 2012; Fan & Wu, 2014; Zhang et al., 2015). For instance, there are still many part-time educators in rural or high poverty urban schools, most of whom have not received systematic teachers' training (Li; Fan & Wu; Zhang et al.). This phenomenon compromises the education outcomes of students from schools with high poverty rates (Gustafsson et al., 2008). In addition, the urban and rural teachers'

income gap and working conditions have further aggravated the imbalance in education (Li, 2012; Lv, 2007; Zhang et al., 2015). The average income for an urban prestigious middle school teacher is thirty to fifty percent higher than that of teachers in rural areas (Li; Lv; Zhang et al.). Consequently, better remunerations and job opportunities in urban areas remain at the root of low teacher retention in rural areas. Similarly, educators' salaries vary significantly between prestigious schools, which typically server higher SES students, and struggling schools, which typically serve a greater number of students living in poverty (Li, 2012; Zhang et al., 2015).

The Long History of the Test-oriented Chinese Education System

Another area in which low SES students in particular face disadvantages is the present system of educational assessments, which in some ways seems to hinder education equality (Wong et al., 2015; Zhang, 2014). Since the birth of Chinese education, testing has been one of the key concepts in the schooling process. Even at the beginning of ancient Chinese education in the Eastern Zhou Dynasty (770-256 BC), slaveholders sorted their children to be the successor in charge based on evaluations of certain training subjects (Xie, 2012). This tradition has been inherited by each dynasty and became a significant component in the education process (Xie). Testing has successfully served the purpose of being a social ladder for people who wanted to express their voices in political and academic fields (Xie).

The Northern and Southern Dynasties (420-589) laid the foundation for the later Imperial Examination System (He, 2000). Many researchers agree that this was when the government replaced the old tradition of a succession system and started to select

government officers based on educators' evaluations of students (He, 2000; Li & Che, 2010; Shi, 1999). Then, when the Imperial Examination System was officially implemented under the Sui Dynasty (581-618), it became the tool to sort people seeking civil service jobs in the government, and it became the first documented standardized test in human history (He, 2000). Under the Imperial Examination System, any qualified individual could be directly assigned a government job and participate in the management of the country based on the individual's scores and test results (He). Thus, the Imperial Examination System served as an evaluation method to recruit government officers based on merit rather than social position or political nepotism (Liu, 2006). Hence, the ancient Chinese Imperial Examination System became a driving force to promote the development of education and a powerful external motivation for students to excel, especially for individuals from low SES families (He, 2000; Shi, 1999) who otherwise had no other means to improve their social and economic lot.

Although the Imperial Examination was officially discontinued in the twentieth century, the principle and method of selecting talent by means of testing has survived the dynastic era and a revised form of it is still being practiced in present Chinese society (Liu, 2006). The notion of evaluating education effectiveness and of selecting personnel from graduates of the educational system is deeply entrenched in the current National College Entrance Examination system (Liu). Outcomes from this examination determine the educational path opportunities and therefore, to a high degree, the job opportunities that individual students will enjoy in the future (Gu, 2016). For those reasons, the entrance examination test remains a crucial feature of Chinese education (Gu).

The National College Entrance Exam (NCEE), or "Gao Kao" as it is known in Chinese, is the most important test in China which lasts for nine hours over the span of two days (Zhao, 2007). Zhao (2007) suggested that the "Gao Kao" has placed intense pressure on students, parents, educators, school administrators, and even on local government leaders. As Hammond (2010) described:

> Streets near test sites are often closed to traffic. Nearby construction is halted. Parents rent hotel rooms for their children near the test site and stand vigil outside during the test to deliver food and offer encouragement. In the weeks and months prior to the test, students respond with almost super-human feats of studying endurance, many using virtually every waking minute to prepare. (p. 2)

The Current Testing in Chinese Education

China is the birthplace of examination systems (Huang, 2004) and the Imperial Examination System, which was practiced for about 13 centuries, still deeply influences Chinese education culture and pedagogical concepts (Li, 2011; Li & Long, 2008), as the current evaluation system in education is based on principle on the former practice (Huang, 2004; Li, 2011; Li & Long, 2008). After the Cultural Revolution, the Chinese education system underwent a series of reforms, however, many scholars suggest that these reforms have not changed the examination-oriented education system which overlooks the importance of practical skills and critical thinking abilities (Hammond, 2010; Zhang, Huan, & Li, 2007, Zhao, 2007). In Chinese society, parents and educators habitually stereotype the function of testing in education and believe that the examination is the most dependable and credible tool to determine students' education trajectories (Hammond, 2010; Zhang et al., 2007). Previous research shows that, since Chinese society generally considers testing as a fair competition to decide an individual's

education pathway, parents pay close attention to their children's test performance, especially the results of various entrance exams (Hammond, 2010; Zhang et al., 2007, Zhao, 2007). The effectiveness of teachers' teaching and students' learning are evaluated through all types of examinations (Zhao, 2007). As the societal factors mentioned earlier have supported the present test-oriented culture in Chinese education, the resulting idea of "scores rule all" has exerted great pressure on students and educators alike.

A number of scholars have claimed that students in China need to outperform their counterparts in order to obtain greater social resources (Huang, 2004; Li, 2011; Li & Long, 2008). Children from low-income families who want to rise out of poverty and change the fate of social disadvantage are especially motivated to have high scores on the National College Entrance Exam in order to gain an advantageous position for future job placement. In fact, through the NCEE and higher education, numerous young people from low-SES families have achieved success in education and career pathways and changed their socioeconomic status (Li, 2011). Under this social backdrop, high-stake examinations, like the National College Entrance Exam, have been given an almost sacred status in Chinese education.

A Sorting Tool in the Education Process

Although China has been trying to promote using multiple methods of assessments to evaluate students' school success, the current Chinese education system is still largely governed by the culture of testing (Huang, 2004; Li, 2011; Li & Long, 2008). In China's P-12 education system, there are two separate entrance exams, the high school entrance exam and the college entrance exam, which students have to take in order to "upgrade" their education (Cai, Liang, & Zhou, 2010). Cai et al. reported that failure in

those standardized tests could lead to less educational resources or even no education at all, because students need minimum scores to qualify for further education and they need outstanding scores to attend tier one schools. Hence, the claim could be made that the Chinese education process is a harsh sorting process. In addition, Chinese students may have a much larger number of benchmark tests in the P-12 system than any other counterparts globally (Niu, 2007). Chinese educators and education policy makers believe that a large number of benchmark tests can help students to better prepare for the crucial college entrance exam (Li, 2011).

In an ordinary Chinese high school setting, benchmark tests involve weekly testing, monthly testing for key subjects (those which will be tested in the college entrance exam), and mid-term and final exams for all subjects (which are offered in that semester) (Chen, 2007; Chen, 2006). After key subject tests, students' grades will be reported and ranked in order to evaluate their current performance and academic growth. The grade reports and ranks are both very valuable to students and educators. For educators, the more high-ranking students they can have in their classes, the more likely they are to be rewarded by their schools or even their school districts. For students, if they can have a consistently high rank, there might be more educational resources allocated to them, such as extra tutoring hours, more learning materials, and intense training during the summer and winter holiday breaks (Huang, 2004; Li, 2011; Li & Long, 2008). It is a cruel process of Chinese high school education, the epitome of Darwin's theory of survival of the fittest (Offer, 2014).

Many high achieving high schools in China have so called "elite classes" for each cohort, which is open to less than 10 % of the whole population of that cohort (Chen,

2007; Chen, 2006). The elite classes are better staffed and normally have more advanced textbooks and assignments (Chen; Chen). Qualification for these elite classes follow only one threshold - benchmark test scores (Chen; Chen). Chinese high schools use benchmark testing to add constantly high performing students to elite classes and to eliminate students with low performance (Chen; Chen). The entire dynamic for elite classes, which is a common feature in Chinese high school education, is based on Confucius' principle of teaching students in accordance with their aptitude. Chinese educators commonly believe that elite classes motivate students to engage in greater competition, encouraging high-achieving students to do even better (Li, 2011).

The National College Entrance Exams

Chinese students reach the climax of the sorting process in Chinese education when they reach the National College Entrance Exam ("Gao Kao") which is administered normally once every year in early June for graduating senior Chinese students. "Gao Kao," the most important test event in the Chinese education system, is an academic evaluation summary of the three years of Chinese high school education and the only tool for Chinese colleges to sort applicants (Chinese Ministry of Education, 2015). Chinese scholars assert that "Gao Kao" is a relatively fair and judicious method for Chinese universities to select talented freshman candidates, based on the test results. Ideally, students with different learning abilities can enter equivalent levels of universities. This test has a huge impact on Chinese society (Zeng et al., 2007, Zhao, 2007).

During the Cultural Revolution, Chinese education at all levels was fatally wounded and, as the consequence of the political movement, most schools were shut down (Zhao, 2004). The National College Entrance Exam was also abolished during

those turbulent years, until Deng Xiaoping reinstated the NCEE in 1977 while he was deputy prime minister in charge of education (Deng & Treiman, 1997). The restoration of the National College Entrance Exam changed the fate of millions of people by offering them opportunities to access higher education, and it is the sign that Chinese education resumed normal operation and started to recover from the political turmoil (Deng & Treiman). In 1985, the Ministry of Education reformed the National College Entrance Exam and reduced the amount of testing subjects. Since then, the subjects in the National College Entrance Exam have been further reduced from thirteen to five (Zhang, 2006). According to data from the Ministry of Education, the gross enrollment rate of higher education reached 25% of school-age youth in 2010 as higher numbers of students entered higher education by passing the National College Entrance Exam (Chinese Ministry of Education, 2015). In the short span of the two decades leading up to 2012, university enrollment expanded by nearly 10 times (Chinese Ministry of Education). There is a current trend in the college recruitment policy that allows a few authorized schools to use their own entrance exams to select students, while some big cities with large high school populations can administer the College Entrance Exam twice (Chinese Ministry of Education). However, the few higher institutions and places that have been granted these privileges have to undergo censorship from the central education administration (Chinese Ministry of Education).

Since the birth of "Gao Kao," there have been many controversial debates about the test's effectiveness and its efficiencies. The National College Entrance Exam decides the content of the national curriculum and others have very little influence in the selection, especially the students (You & Hu, 2013). A study by Feng (2001) found that the Chinese

College Entrance Exam had sabotaged the spirit of innovation and creativity by implementing the same curriculum, textbooks, test content, and fixed answer keys, and as a consequence, students have limited knowledge outside of the official curriculum and are expected to submit to education authority. Even after China reformed the National College Entrance Exam and gave more liberty to each province to design its own test content, the format of the test and its content continue to be under the control of the central Education Bureau (You & Hu, 2013). Further research has suggested that, due to the highly centralized college sorting process, Chinese colleges actually lack effective techniques to evaluate their own candidates (Liu, 2013; You & Hu, 2013). Some students' academic potential cannot be fully assessed under the "Gao Kao" system, such as in the fields of medicine, architecture, and astronomy. Hence, some majors and colleges should be given more autonomy in selecting and assessing their application candidates (Liu; You & Hu). Some researchers are concerned about whether the National College Entrance Exam and current education policy might actually increase education inequity (Gu, 2016; You & Hu, 2013; Zhao, 2007). They claim that, while the Chinese Ministry of Education keeps promoting quality education aimed at shortening school hours and reducing the learning burden, an increasing number of high school students seek after-school tutoring centers to prepare for the "Gao Kao" and improve their grades (Gu; You & Hu; Zhao). However, many students from low-income families cannot afford tuition for tutoring centers which puts them in a disadvantaged position. In this way, the cost for additional education resources to prepare for the exam might pose as a barrier to education equity (Gu; You & Hu; Zhao). The influence of this trend remains unknown.

Views on the Value of the National College Entrance Exam

The high esteem for tests in the Chinese education system was reflected in a speech by the Chinese president, Mr. Xi Jingpin, to a meeting of the Education Admission System Reform：

> The National College Entrance Exam is a significant tool in our education system to select elites from society. Hence, entrance exams and school admission are closely connected to the national development and individual career pathways. We need to examine constantly our education system in order to secure that the testing and soliciting processes are transparent, well organized, and impartial. Specifically, we need to increase the college admission rate in western provinces, rural areas, and among low-income urban families. (Wang, 2015, p. 4)

Based on the words of President Xi and considering the nature of centralized governing practice in China that gives the highest authority to the head of the nation for any decisions, it is legitimate to claim that the National College Entrance Exam is regarded as being of extremely high value to Chinese students. With a population of over 1.3 billion, the country can hardly provide equal education opportunities for all its citizens, and testing has become the primary tool for students to battle for the limited educational resources (Liu, Wagner, Sonnenberg, Wu, & Trautwein, 2014; Yan, 2015). To a great extent, high achieving high schools (in terms of proportion of students with high scores) in various regions in China are designated as key schools by the government and therefore receive priority investments (Liu et al.; Yan). Understandably, students in those high schools normally have advantages in educational support (Yan, 2015). Peng (2005) claimed that “the government has introduced an elitist system, including key schools and college entrance examinations, to ensure the quality of education for a small

group of students who have performed well on examinations throughout their school lives" (p. 1).

Performance on examinations largely determines educational opportunities and forms of education and training that are available to individual students in their futures (Larmer, 2015; Zhang, Chen, Yu, Wang, & Nurmi, 2015). Especially, the National College Entrance Exam, aside from determining students' education opportunities, also has a profound impact on students' future lives. Since scores for the National College Entrance Exam are the only indicator to determine the choice of major and school admission, the outcome of students' performance in testing will ultimately influence their job placement and salary range in the future (Gu, 2016). A large body of research has demonstrated that, with the decrease of Chinese economic growth, the job market will become more competitive for new college graduates (Gu, 2016; Tang, 2003; Wang, 2007; Zhu, 2012). Under the circumstances, being able to choose a major in high demand according to the job market is significant to secure a job position after graduation. Although the job market changes quickly, experts predict that language, information technology, and new types of energy will continue to be the most popular majors in response to the Chinese job market (He & Zhao, 2010; Zhu, 2012). To be admitted into these popular majors by a recognized higher institution requires very competitive scores on the National College Entrance Exam (Gu, 2016; Wang, 2010; He & Zhao, 2010).

In addition, previous studies have asserted that Chinese employers strongly consider the applicants' college ranking (Liu et al., 2014; Larmer, 2015; Zhang et al., 2015). Students who graduate from high-ranking institutions have an advantage in the job-hunting process in regards to job opportunity and salary negotiation (Li & Zhang,

2010). However, admission rates in high-ranking schools in China are extremely low and freshman enrollment is limited. Each year, high-ranking institutions normally receive a large number of applications but only a small proportion of the applicants are admitted, based on the scores that they have received from the National College Entrance Exam (Gu, 2016). Huang (2015) alleged that all these factors (market needs, high number of applications, and limited admissions) combine to make the admission process extremely competitive, especially for prestigious schools. The combination of scarce resources in education and available work force results in employers being highly selective in their hiring practices (Huang).

Due to the imbalanced economic development in China, another common phenomenon in Chinese education is that the admissions scores required by institutions from more developed coastal areas are frequently higher than those of their counterparts in less developed western provinces (Tang, 2003; Wang, 2007; Zhu, 2012). The coastal areas are the most industrialized in China and have more companies and industries that can recruit more college graduates (He & Zhao, 2010; Wang, 2010). Because of the higher availability of job vacancies and higher salaries, the institutions in coastal areas attract large numbers of applicants nationwide (He & Zhao; Wang). In this regard, the influx of students from other areas has lifted the admission requirements and standards of colleges located in the coastal areas of China (He & Zhao; Wang).

Education trajectories and career pathways are heated topics discussed by Chinese scholars. A large number of researchers have offered similar advice for new college applicants on how to choose their school and major. The advice offered boils down to the following: in order to find good positions in the job market, apply to a high-ranking

school; alternatively find a city in a developed area which has more industries and job vacancies (Chen, 2008; Chen, 2006; Wang, 2010). This advice embodies the covert prerequisite for high school graduates that they need competitive College Entrance Exam scores (Liu et al., 2014; Larmer, 2015; Zhang et al., 2015). Therefore, all the preconditions for securing a job with a competitive salary are determined by the test scores on the National College Entrance Exam (Liu et al.; Larmer; Zhang et al.). Zhao (2007), the distinguished researcher of the Chinese education system, claimed that, although Chinese education policy makers are eager to reform education and promote well-rounded assessments, school leaders and educators persist in resisting the changes, and therefore, test-oriented schooling and testing scores are still the only focus in Chinese schools because of the national exam's assumed high value to stakeholders.

Significance of the Problem

China still has a relatively large population of low SES families, and their children are facing different types of difficulties in education due to the impact of socioeconomic related factors. Considering the amount of low SES students, their fate could threaten the development of the Chinese society. Western scholars have stressed that the educational attainment and school success of low SES students should concern educational leaders at all levels, because students who fail school normally lack the knowledge and critical thinking skills needed to succeed in challenging 21st century environments (Wagner et al., 2006). If the educational system fails to address these potential problems, the entire society would have to share in the costs of this failure.

As mentioned previously, the Chinese education system has traditionally placed a high priority on testing to evaluate students' school success and determine students'

social and educational opportunities. For thousands of years, test scores have been the only indicators for students' school success. This test tradition has tremendous influence on contemporary Chinese education. Currently, the National College Entrance Exam is considered as the most important standardized test in the Chinese education system, because this exam will decide students' educational trajectories and their future job placement. Under the circumstances, helping students to obtain high scores on the NCEE is a primary responsibility of Chinese educators and school leaders.

Both low SES students' school success and students' performance on the NCEE are crucial issues in the Chinese education system. Hence, when a research agenda examines both the issues of low SES students and the NCEE, the study holds the possibility of contributing to the understanding of how better to create educational equity within the Chinese educational system. It is a paradox that, within the frame of the People's Republic of China's socialist regime, the societal structure has been designed and assumed not to have social classes, and consequently, research studies about low SES related issues are largely ignored in China. Although the Chinese government has developed many supporting policies to assist low SES Chinese students to achieve success in education, little is known about the experiences of high achieving Chinese students with a low SES background who have obtained high scores on the NCEE. New understanding and knowledge about low SES Chinese students who have obtained high scores on the NCEE is needed to help educational leaders create conditions to strengthen the learning of this student sub-group in order to increase their test scores on the NCEE and their life opportunities. Most importantly, this inquiry will identify the efforts and

sacrifices that Chinese low SES students make to seek academic success and conquer possible social disadvantages in order to become productive members of Chinese society.

Purpose of the Study

Considering that the knowledge of how low SES students achieve success in education is limited, studies were needed to explore this topic from new and different perspectives. The purpose of this study was to gain a deeper understanding of this process by attempting to identify the efforts and sacrifices that low SES Chinese students have made to seek academic success and conquer their social disadvantages through high NCEE rankings. The author aimed to find meaningful patterns in the experiences of students from low SES families who have achieved high rankings on the NCEE.

To explore the research problem, a qualitative study was conducted to address the following research question:

Q1 What are the experiences of low SES Chinese students who have achieved high scores on the NCEE?

This research study investigated both the difficulties that low SES students have experienced and the factors that helped them to overcome these difficulties in order to obtain academic success in their educational system, specifically high rankings on the NCEE. The findings of the study may be used by Chinese policy makers, school leaders, and educators to support students from low SES families. The findings of this study also provide research resources towards the creation of a Chinese version of AVID which has been proved effective in the American education system (AVID Center, 2016). Since urban schools have been hosting the majority of the student population in China, the study on high achieving students with low SES background focused on urban high school graduates. Participants were purposefully selected (Merriam, 1998; Patton, 2002)

according to their school performance, NCEE scores, family background, and place of origin.

Study Overview

A qualitative approach is the most suitable to address the research problem and to gain a deeper understanding of the phenomenon to be studied by extracting meaning out of individual interviews with high achieving Chinese students with low SES backgrounds. Using methodologies from phenomenology (Creswell, 1998, 2005; Merriam, 1998; Patton, 2002; Stake, 1995), data were collected over a three-month period from multiple sources including individual interviews, documents, and audio materials. To capture data that might have otherwise been missed and for transcription purposes, the interviews were digitally recorded. The author carefully prepared interview questions and encourage the low SES Chinese students interviewed to share their experiences of how they have achieved high rankings on the NCEE. The final report of the dissertation included all the participants' feedback in the form of a synthesis of common themes.

Limitations

Qualitative study puts the researcher and participants in close connection with each other in order to reveal the meanings relevant to the research problem and question, which places the researcher as the primary instrument of both data collection and data interpretation. Hence, it is imperative for the researcher to impartially "reflect on, deal with, and report potential sources of bias and error" (Patton, 2002, p. 51). To reach a trustworthy conclusion in the study, the researcher needs to keep an independent and neutral stance during the whole research process. Although absolute neutrality may be

difficult to achieve, credible strategies can be used to help qualitative researchers address the selective perceptions and potential biases (Patton).

An effective strategy of qualitative inquiry is one that "depends on, uses, and enhances the researcher's direct experiences in the world and the insights about those experiences" (Patton, 2002, p. 51). Patton recommended that empathic neutrality is a "middle ground between becoming too involved, which can cloud judgment, and remaining too distant, which can reduce understanding" (p. 50). For this study of the dissertation, the author required his performance to embrace Patton's concept of empathic neutrality to seek a reasonable research process and ultimately trustworthy outcomes.

Researcher's Stance

My Chinese upbringing and school years in China motivate me to choose this research topic. I grew up in a middle-class family in Chongqing, one of the largest Chinese cities. I remember my parents saying often, "If you can work hard and be grateful, you can be successful at whatever level you find yourself." My parents' good example guided me while growing up. My personal educational and career desires were not outstanding, but I knew there was always room for improvement, as long as I was diligent and forward thinking. So, I worked hard. With acceptable standardized test scores, I was accepted in the best secondary junior high and high school in my city. This paved the way toward enrollment in a top Chinese engineering university

Aside from my parents' diligent involvement in my education, some of my low SES friends from school have had a positive impact on my education, as they possessed great determination and ambitions that they were sure they could realize through education. As upright children of China, they were embedded with the belief that

education has the power to lift diligent people to a higher social status than the one they have been born with. Their earnest efforts and sacrifice to achieve educational success, ultimately aimed to better their lives, motivated my own career in education and my personal life. Some of those friends are currently senior executive officers in multinational companies or lead their own successful companies and seemed to have conjured successful lives out of thin air, although the reality is that they are a product of their own diligence and hard work. To say that their stories are inspiring would be an understatement.

After completing the first year of my doctoral program and having returned to China for the holidays, my advisor, Dr. Linda Vogel visited China. Linda was in the process of developing a comprehensive analysis of educational leadership preparation in America and China. I had the honor of assisting her in a country and society that I was more familiar with. One day, while driving her back to her hotel after a day's work, we started discussing my future potential dissertation topic. Linda thought I should write about the Chinese standardized testing system, which was a heated debate in American education fields. She also thought it would be very interesting to compare the two systems under a social justice lens. One of my views, based on my experiences and observation, was that in China, a considerable proportion of high-performing students in top Chinese high schools came from low SES families. Linda was surprised by these opinions, as her experience as a high school principal and a U.S.-based educational researcher led her to think otherwise. In the following days, we managed to visit a variety of representative Chinese schools to investigate my ideas and the findings confirmed my views to be mainly correct. In some schools, we found that there was a federal

sponsorship for classes with high achieving students from families living under the minimum wage level. Under this federally funded program, called "Hongzhi," meaning "high hopes" or "big aspirations," students are funded under the conditions that they perform to benchmarked testing expectations and maintain appropriate school discipline. School leaders explained that it is very rare that students fall out of line and lose their funding. In fact, the majority of the students in the program move on to enroll in top-ranking Chinese or prestigious universities abroad with additional federal education funding.

Some of these experiences and the ensuing discussions led me initially to compare the two cultures, and two questions were born in my mind. "Is there a way to share this information with researchers in the U.S.? Would this topic inspire the American interest?" Linda was of the view that, "Yes, it would be a very interesting topic for Americans to read and to find more about." That was the birth of this research idea!

Before China started charging tuition fees to college students, during the period between the late 70s and early 90s, China was extremely successful in bringing up people with low SES in the society (Chui, 2013; Wang, 2011). There was huge social mobility at that time. In fact, many people in China in important positions nowadays are first generations and from the countryside who received free college education during that period of time (Wen, 2005). Since the end of last century when China added so many higher institutes and started charging tuition, situation for students from SES has really changed (Yeung, 2013). The study is timely in a way that new and important issues pop up and need attention. What I aim to discover is the factors that compelled these low SES, high achieving students to strive for success and the sources of their inspiration and

determination. Clearly, through their diligence, efforts, and dedication to study, they attained the support of government sponsored programs and policy which opened doors to continue their successful trajectories. However, how low SES students conquered their low SES-related difficulties and barriers to achieve high education attainment remains unknown. The findings of this study can generate beneficial information for Chinese educators, school leaders, and educational policy makers to design better supportive strategies to help currently low SES students succeed on the NCEE and obtain a pathway conducive to collegial education in China.

Assumptions

Denzin and Lincoln (2008) suggested that all research is interpretive and is guided by the researcher's set of beliefs and objective judgment, as generally speaking, researchers hold assumptions and theoretical predispositions about the issues that they try to understand and study (Denzin & Lincoln). Beliefs about epistemology and theoretical framework decide a methodology that guides the questions researchers ask and the interpretations they bring to the research process (Denzin & Lincoln). Regarding this research inquiry, the author has had life experiences that have shaped two of the assumptions of this study related to power and experience. Each of the assumptions is explained in the following sections.

Power. The first assumption regarding the author's power is embedded in the dual roles he has experienced, presently as a researcher and throughout the years, as a participant, as he was born and grew up in the Chinese social and cultural context of the study. He enjoys considerable knowledge, privilege, and power based on his semi-insider status, which of course brings both advantages and disadvantages. One considerable

advantage is the value of having pre-established relationships with high school educators and building-level leaders who work in the area where this study was conducted. Because he has experienced the Chinese P-12 education, as well as three years of experience in the high school system where this inquiry took place, he already has well-placed sources to facilitate the collection of data and knows a number of potential participants who may agree to participate in this study. Having the advantages of knowing the culture and society is a gift and responsibility that the author vows not to take for granted.

According to Yin (2009), one disadvantage of being a semi-insider in research projects is that biases might cause the researcher to ignore the potential emerging insights. As Yin advised, to address this issue, the author continually reflected on the power of the role and remained aware to the possibility of unexpected and antithetic cases (Yin). Additionally, the author constantly communicated ethical issues and questions with the dissertation committee advisors. The author is aware that the perspectives and insights of these research demands should keep challenging him to remain alert about the strengths and limitations of the role, status, and power in this inquiry.

Experience. The second assumption, based in critical theory, is that the experience of low SES students is unique, which could differ from the experience of their mainstream counterparts. The author holds a belief that it is critically important to understand this difference. Recognizing and acknowledging low SES students as authorities on their own experiences, the author considers participants and himself as "equally knowing subjects" (Freire, 1972, p. 31) and identifies the research relationship as a partnership in which the author and participants could learn from each other. In sharing the assumptions, theoretical framework, and early interpretation of findings,

participants and the author worked together as partners, or co-researchers, in this study. Via critical dialogue, participants gave voice to their experiences and enable their perspectives to be broadly shared through this inquiry.

Definition of Terms

The following terms are defined relative to the context of this study:

Chinese Key University: the Chinese government selected a number of public universities in China and prioritized the educational findings to support the development of such universities. The goal of this campaign is to build an outstanding higher education system in China in the 21st century (Ministry of Education of the People's Republic of China, 2016ab). This campaign started in the mid-1990s and has continued for two decades. All the selected universities receive extra funding from the Central Government, and they also enjoy different types of support from the local governments where they are located (Ministry of Education of the People's Republic of China).

High scores on the NCEE: the scores that reach the threshold requirements of Chinese Key University's for admission qualification are considered high scores.

Hongzhi Program: the government sponsored education program that selects low SES students who are high achieving in middle school and provides high school tuition waiver and monthly stipend. All the selected students need to keep a good academic stand during the career in high school to secure the opportunity in the program.

Low SES students: students whose parents have an income below the local minimum wage level. In this study, this group of students was identified based on having qualified to receive need-based grants from the Chinese government.

The Compulsory Education Law: Since 1986, compulsory education in China includes primary and junior secondary school (Ministry of Education of the People's Republic of China, 2016c). The government pledged to provide completely free nine-year education for all Chinese citizens, including textbooks and fees (Ministry of Education of the People's Republic of China).

The Cultural Revolution: The sociopolitical movement that took place in the People's Republic of China from 1966 to 1976. Set into motion by Mao Zedong, then Chairman of the Communist Party of China, its stated goal was to preserve Communist ideology in the country by purging remnants of capitalist and traditional elements from Chinese society and to re-impose Maoist thought as the dominant ideology within the Party. The Cultural Revolution marked the return of Mao Zedong to a position of power after the Great Leap Forward. The movement paralyzed China politically and negatively affected the country's economy and society to a significant degree. During this period, all schools were shut down and the entire education system was paralyzed (Deng & Treiman, 1997).

The National College Entrance Exam (NCEE): A national government-sponsored exam usually taken by students in their last year of senior high school which is used as a basis for university admittance. Chinese Literature, Mathematics, and English language (in most provinces) are required for all students. In addition, students have to choose one of two academic orientations, either the social-sciences or the natural-sciences. The social-science-oriented area includes four exams: Chinese Literature, Mathematics, Foreign Language (usually English), and "combined social science subjects" which include History, Politics, and Geography. The natural-science-oriented area includes four

exams: Chinese Literature, Mathematics, Foreign Language (usually English), and "combined natural science subjects" which include Physics, Chemistry, and Biology.

Summary

Although the economy has been developing at a fast pace for the last few decades, there is still a relatively high low SES population within the Chinese society, which constitutes a contextual barrier to educational equity in Chinese education. Meanwhile, the Chinese government has been administering assistance policies in education to promote education equity, such as the milestone policy introduced by the *Compulsory Education Law* that requires all school-age children to attend grades one through nine for free (Zeng et al., 2007). This policy has brought immense prosperity to the majority of citizens. However, Chinese education still faces a large array of challenges pertaining to the imbalanced development, funding shortages, lack of qualified educators, household registration system, family mobility, and so forth (Gustafsson et al., 2008; Lv, 2007; McMahon, 1998; Zhang et al., 2015). These challenges compromise low SES students' educational attainment and performance on high-stake tests, such as the NCEE. Considering the high value of the NCEE, understanding what factors affect low SES students' performance on this test has a practical value to educational practices. School leaders and policy makers need to be informed and aware of these factors in order to more effectively support low SES students in the Chinese education system.

CHAPTER II

THE REVIEW OF RELEVANT LITERATURE

This chapter opens with a brief introduction to Chinese education. The analytic lens moves from the historical perspective to the current Chinese education system. Next, previous seminal studies on SES's impact on education are discussed which leads to a review of the dynamic of educators and school leaders' impact on students' school performance and academic success. Finally, the limited studies on low SES students in China are discussed in this literature review. Through the discussion of the literature review, the author identifies the knowledge gap in previous research failing to address the proposed issue and elaborates the rationales for identifying the problem which requires further research endeavors to explore.

Chinese Education System

The genesis of Chinese education can be traced back to China's primitive clan period (Before the 21st century BC) (Guo & Zhao, 2011; Wang, 1992). In order for new generations to acquire the needed skills for agriculture and to learn about the laws of nature, Chinese ancestors arranged family-based or clan-based vocational training (Guo & Zhao; Wang). The elderly in the family or clan played the role of instructors and taught young people helping them to learn and practice the known survival skills (Guo & Zhao; Wang). Although this type of training was not arranged by any special educational institution or by professional educators, it did play an important part in educating the new

generations of ancient China. Hence, this communal type of teaching practical life skills could be considered as one of the roots of Chinese education.

Official education in China originated in the late Shang Dynasty (17th -11th century BC) (Sun, 1996; Wang, 2003). In order to cultivate aristocrats' children and maintain the ruling regime, slaveholders during that period established different types of schools for teaching religious courtesy or military skills (Sun; Wang). The educators were assigned by the central government, and the students were exclusively from the noble caste (Sun; Wang). Education at that time was completely exclusive, and people from low SES families had no access to educational resources (Sun; Wang). As the Chinese society continued to develop, people during the Eastern Zhou Dynasty (770-256 BC) strived for equal education rights and for breaking the social barriers related to class regarding education (Deng, 2009; Xie, 2012). This gave birth to a number of distinguished educators and philosophers who promoted the prosperity of Chinese society and founded numerous schools of educational philosophies, including Confucianism, Taoism, Legalism, and so forth (Deng; Xie). The majority of those schools were private at that time, so educators in the Eastern Zhou Dynasty (770-256 BC) did not only accept students from the nobility but were free to receive pupils from the broader society (Deng; Xie). Confucius was the most outstanding representative of the education sector of that time, and he successfully promoted education equity and teaching effectiveness. His education philosophy was that "social class cannot limit the right to education," "learning continues throughout life," and "teaching students in accordance with their aptitude," won the support and agreement of educators throughout the centuries (Deng; Xie). The educational legacy from that era built a firm foundation for the future of Chinese

education whose setting and fashion have been evolving under the same philosophy for more than two thousand years and still has an impact on current Chinese education (Deng, 2009; Zhao, 2004).

The Chinese education traditions and culture were disrupted in the late Qing Dynasty after China lost the first Anglo-Chinese War in 1840-1842 to the British-led multinational forces (Sun, 1996). During that period, the Chinese society underwent unprecedented turbulence under the invasion of foreign forces armed with more advanced industrialized weaponry (Deng, 2009). Deng claimed that the Qing government was urged to break the shackles of traditional ideas and advocate Westernization. Thus, the Chinese society set out on the path of accepting Western science and technology and trying to catch up with Western industrialization (Deng). Under the circumstances, a wealth of Western scientific and technological knowledge was introduced into China. Meanwhile, a large number of Western missionary organizations and missionaries built churches, schools, and libraries in China (Deng). Many of the missionaries played a crucial role in disseminating the ideas of Western education (Deng). This period can be considered as a landmark of China's first turn to globalization through the process of local and global negotiation as Chinese traditional education and Western pedagogical philosophy intertwined and co-founded modern Chinese education (Deng).

Chinese P-12 Education System Since 1949

When Mao founded the People's Republic of China in 1949, he placed a higher educational priority on low SES groups (workers and peasants) in order to promote socialism because 90% of the population was from these two social classes at the time (Zhao, 2004). As Kwong (1988) claimed, the Chinese education system aim was to

develop a population that was both "red and expert." The expert quality was meant to be the epitome of knowledge and professional skills, while redness embodied the characteristics of the communist outlook. The education system was a vehicle to impart political awareness on the young through ideological and political propaganda (Zhao, 2004).

After 1949, China's Department of Education designed a system of education, which included a six-year primary school, six-year secondary school, and four-year university, with secondary education divided into academic and vocational tracks (Unger, 1982). The Chinese education system started to operate in a highly centralized manner from that period on (Shirk, 1982; Unger, 1982). All schools from the same level adopted the same textbooks, followed similar course progress, and joined the same benchmark and standardized tests according to teaching plans regulated by the national Department of Education (Shirk; Unger). At this time, Chinese education turned to relying heavily on a sorting process for the entire education procedure. A number of admission entrance examinations were introduced for the promotion process to each higher level, starting with junior high school, then senior high school, followed by college (Deng & Treiman, 1997).

From 1949 to 1966, three criteria determined educational advancement in the Chinese education system: students' academic performance assessed by the entrance examinations, students' family class origin, and the student's own political loyalty (Shirk, 1982; Unger, 1982). Among the three crucial criteria, the entrance exams were still at the center of Chinese education and shaped society. However, during the Cultural Revolution, the Chinese Communist Party persistently argued that employing entrance examinations

to select students would unduly favor students whose families who had middle and high SES (Deng & Treiman, 1997). Based on the communist party's ideology, capital discrepancy breeds social stratification, so children from low-income families would become vulnerable to examination discrimination (Munro, 1972; Montaperto, 1979). In order to promote education equity, the Central Government used students' family class origin as a main admissions' criterion which privileged to the children of workers and peasants, namely the low SES families (Deng & Treiman, 1997).

Education During the Cultural Revolution

In May of 1966, Chairman Mao initiated a purge among Communist Party officials known as the Cultural Revolution (Bernstein, 1977). The momentum of mass support from the youth propelled the political campaign (Bernstein). While the purpose of the purge was to attack Mao's political opposition, the Cultural Revolution was labeled as a revival of communism orthodoxy (Vogel, 1969). As Bernstein (1977) claimed in his research:

> Mao saw a threat to the socialist revolution not only from the remnants of the old upper classes but even more so from 'newly engendered bourgeois elements' in the political superstructure, who might become a 'privileged stratum' and take the capitalist road, as allegedly has happened in the Soviet Union. (p.5)

The Cultural Revolution was originally intended as a political movement. However, it became a catastrophe for Chinese education as many young people were involved in the struggle (Bernstein, 1977). As the Cultural Revolution unleashed anger from low SES groups in the Chinese society, chaos spread and all high SES groups became targets of attacks (Deng & Treiman, 1997). Particularly, Mao's distrust towards the intelligentsia deteriorated the condition of contemporary education. During the

Cultural Revolution, the Chinese intelligentsias were treated as social rebels (Bernstein, 1977; Deng & Treiman, 1997). The study from Deng and Treiman, (1997) claimed that:

> The intelligentsia was in the difficult position of being perceived as the embodiment of bourgeois ideology—while lacking political power with which to protect themselves. Cadres under attack might be able to use their political leverage to protect themselves and their families, but this generally was not possible for the intelligentsia. Because of this, it is likely that the "cost" of the Cultural Revolution to those from high status origins was not borne equally but was particularly heavy for the children of the intelligentsia. (p.5)

By suppressing the Chinese intelligentsia, the Cultural Revolution caused massive turmoil in the education system in China. Although most primary schools continued to enroll students as usual, nearly all the secondary and tertiary institutions were closed down during 1966 to 1968 (Vogel, 1969), and the majority of tertiary level institutions remained closed until 1972 (Bernstein, 1977). After the secondary schools re-opened in 1968, school leaders faced a tough problem of having two cohorts of students in the same grade as students' schooling had been disrupted or delayed during the previous two years when schools had been shut down (Deng & Treiman, 1997). Moreover, most schools had a severe shortage of qualified teachers, since many educators had been purged (Unger, 1982). Under the backdrop of dishonoring education, the Central Government's solution to the problem was to send the older cohorts to work as farmers or workers in underdeveloped areas (Unger). However, this did not solve the problem of the lack of educators for the vast numbers of students in the 1970s, since, in addition, schools were not allowed to recruit new teachers under the premise that the intelligentsia could compromise the roots and credentials of communism (Deng & Treiman, 1997; Unger, 1982). In the same vein, when higher education resumed in 1972, many colleges faced a similar dilemma (Shirk, 1982). Entrance examinations were abolished (Shirk). The

primary sorting criteria for college focused on social class background and loyalty to the Communist Party rather than academic achievements (Shirk). As Shirk suggested, some common phenomena in Chinese education system in this period were that:

> The only eligible applicants were workers, peasants, and soldiers with two or more years of working experience, having knowledge equivalent to junior middle school graduates or more. The first and most important criterion for admission was political performance. Small quotas (not exceeding 5%) were established for students from undesirable class origins, who were identified as educable children of class enemies. (Shirk, p. 11)

The Cultural Revolution was probably one of the most drastic attempts in human history to reduce social hierarchy and change political-economic status. At the cost of enormous human suffering, the Cultural Revolution managed to promote temporarily educational equity for students from low SES families at the expense of deprivation of certain social group's education rights. However, this political movement caused great harm to the Chinese society and its education system. In retrospect, it was a policy which entitled one social group over another and ultimately greatly impaired education equity in China (Deng & Treiman, 1997).

Education Reform after 1976

The Cultural Revolution officially ended in 1976. After the Cultural Revolution, the urgent need for socioeconomic reform and a growing demand for competitive and constructive elites propelled the educational reforms of the early 1980s (Zhao, 2004). In 1977, China's higher education institutions reinstated the national unified examination, which admitted college applicants based on their academic grades rather than their political and family backgrounds (Pu, 2013). The unified test was the National College Entrance Exam (Gao-Kao), which remains the only admission test for Chinese higher

education. Since then, the scores students achieve on the National College Entrance Exam became of utmost importance in determining students' educational attainment and pathway (Lei, Huang, & Schnell, 2013; Pu, 2013). In most places in China, high schools are ranked by their students' average Gao-Kao scores, and teachers are rewarded according to their students' performance on this test (Lei et al., 2013).

In addition to reinstating the Gao-Kao in order to revive Chinese higher education, a series of reforms in the curriculum of Chinese K-12 education have been launched since the early 1980s (Wang, 2012). At beginning of the 1990s, more social science courses were added, including Social Studies and Moral Education for primary schools; Political Ideology, Citizenship Education, World History for secondary schools; and Western Politics and Philosophy, and Western Culture and Society for higher education (Wang). These added courses were motivated by the changing Chinese social and economic systems, as well as by the change of the educational focus toward the outside world under the influence of globalization (Law, 2014). These courses kept the emphasis that students should be obedient to the given rules and regulations, should maintain traditional social norms, and should hold attitudes aligned with changes in the political system (Law). However, Chinese education policy makers started to propose an education concept that focused on the healthy development of individual students and that cultivated and prepared students for the challenges ahead in the changing Chinese society in the middle of 1990s (Law, 2014; Wang, 2012). As Zhao (2004) suggested, the educational goals needed to focus more on producing citizens that were able to contribute to the nation's scientific and economic prosperity:

> We must conduct education in personal attributes consistent with the development of the times, with social progress, and with the new requirements and urgent

> needs that have merged during the establishment of the socialist market economy. We must attend to cultivating students in the spirit of initiative, self-reliance, and painstaking pioneering. (p. 3)

In contrast with the previous strong political propaganda tone that focused on social class struggle and devout worship of supreme political images during the Cultural Revolution (CR), the post CR's curriculum discarded the ideology of interclass conflicts, including its myriad articles praising the working class, and began to develop an environment of respect for the intelligentsia (Law, 2014). The emphasis was on respecting hard-working scientists and educators who sacrifice themselves for the good of the country under unfavorable circumstances (Law). This drastic turn from the opposite policy of the Cultural Revolution era promoted the development of Chinese education and substantially helped it to recover from the previous damage (Law). One of the most promoted education slogans of the 1980s was "knowledge is power," which entitled intellectuals disgraced and persecuted during the Cultural Revolution to a brand-new positive and respectful reputation and image in the textbooks of the 1980s (Law). The reforms and changes that took place in education, as well as the general social climate of the 1980s, was steered by the eagerness to heal the wounds left by the ten-year turmoil of the Cultural Revolution and to revitalize China's economic system through scientific knowledge (Law).

Another milestone event in Chinese education also took place in the 1980s - the Compulsory Education Law (CEL). Along with the implementation of the CEL in 1986, the State Education Committee enacted a pilot teaching plan for compulsory education and promulgated a new version of the teaching plan in 1988 (Law, 2014). Previous studies held that the biggest contribution of CEL was to benefit students from low SES

families (Deng & Treiman, 1997; Law, 2014; Wang, 2012). In addition, CEL reduced the number of subjects for primary schools to nine (Law, 2014; Wang, 2012). Primary schools needed to provide students with a supplemental activity curriculum including morning meetings, class activities, and physical exercise. Junior middle school curriculums kept the previous thirteen subjects (Law; Wang). This framework was extended to the *Curriculum Plan for Full-Time Primary and Junior Middle Schools Under the Nine-Year Compulsory Education System,* published in 1992 (Law; Wang).

Starting in the late 20th century, globalization triggered educational reform of institutions and curricula in China (Yates & Young, 2010). In June of 2001, the Ministry of Education issued the *Outline of Basic Education Reform*, which was the most comprehensive and attention-attracting reform since 1978 (Yates & Young). Not only did this contemporary reform maintain the progress made by previous education reforms but also employed some innovative approaches in school curriculum design (Ministry of Education, 2011). For instance, more practical activities were integrated into the curriculum in order to offer the students more opportunities for practice-related learning and inquiry (Wang, 2012). In addition, new teaching content was introduced in classrooms such as teaching life skills along with academic knowledge and in cultivating students' emotions, attitudes, and values (Wang). Much research held that this education reform promoted the well-rounded development of students rather than mastery of information (Huang, 2004; Law, 2014; Wang, 2012). A new student-centered approach in the classroom with a focus on skills and daily life knowledge, a constructive teacher–learner interaction, and an experience-based learning was strongly advocated (Huang; Law; Wang).

With the change of curriculum, increasing demands from scholars have called for reform of the National College Exam as the test is based solely on knowledge of the Chinese K-12 National Curriculum (Liu, 2013; Pu, 2013; Sun, 2010; Wang, 2013; You & Hu, 2013). The claim is that, while the Chinese higher education admissions process still overly emphasizes single test scores, most Western education systems are shifting focus to incorporating test scores into a larger picture of college enrollment evaluation. Therefore, some Chinese researchers suggested that the trend of the NCEE reform should be to grant colleges and universities proper autonomy pertaining to freshman admissions similar to Western university admission practices (Liu, 2013; Pu, 2013). For instance, the admission process for higher education in the U.S. is conducted by admission committees who examine, review, and make decisions based on the collective wisdom of the whole college admissions committee. However, a number of Chinese researchers still claim that the NCEE may be the most effective and fair method to screen students for college admission because using Western admission strategies may unwittingly favor higher SES families due to potential corruption in the admission process, thus causing partiality towards low SES students (Liu; Pu).

The focuses of the reforms that have been implemented already in the National College Entrance Exam have been to promote testing accuracy and assessment effectiveness (Liu, 2013; Pu, 2013; Sun, 2010; Wang, 2013). In addition, reforms have removed some subjects from the NCEE test plan and focused on the "3+X" format (Wang, 2013). The "3" represents three mandatory subjects for all high school students, namely Chinese, Mathematics, and Foreign Languages, (Wang). The "X" represents the subjects tested according to two different pathways that students can choose: either the

Social-Sciences pathway or the Natural-Sciences pathway (Wang). Chinese policy makers believe that using the "3+X" format in the NCEE is best suited to determine the students' college skills and preparation for their future major preferences because of the specific subjects tested (Liu, 2013; Pu, 2013; Sun, 2010; Wang, 2013).

In addition, Chinese educational authorities have utilized the NCEE reform to promote social equity (Liu, 2013; You & Hu, 2013). The Chinese Ministry of Education has purposefully decreased admission requirements of the NCEE scores for students of ethnic minorities to increase ethnic minority students' college enrollment (Liu; You & Hu). However, no educational policies related to college admission and the NCEE have been legislated or enacted to promote the rights of low SES students, although students from higher SES in China tend to possess more and better K-12 educational resources than under-privileged students (Baird, 2012; Kieffer, 2010; Suppes, Liang, Macken, & Flickinger, 2014). In this context, an array of studies suggested that the Chinese Ministry of Education should and may consider SES factors such as the applicants' family background and school district to regulate the higher education admission process in order to reduce education inequalities and encourage more upward social mobility in China (Liu, 2013; Liu; 2013; Sun, 2010; You & Hu, 2013).

The development of Chinese education and the reforms of its curriculum after the Cultural Revolution have centered on China's key strategy of countering manpower-related global challenges and empowering the country in the 21st century. Following this path, China gradually moved its centralized educational administration to a model that provided more autonomy at the provincial levels. The trends of education reform also reflect the increasing tension between the negotiation of globalism and nationalism.

While preparing students to be more competitive globally, China also cultivates the pride of the nation's achievements and its cultural identity (Law, 2014). However, many scholars have pointed out the problems hindering the development of Chinese education during this period such as that it continues to be burdened with long school days, time-consuming repetitive homework, and school-oriented extracurricular activities (Zhao, 2007). In addition, the education system overemphasizes a reliance on rote memorization and mechanical drills and a tendency among educators to narrowly focus on the few high achievers to the neglect of low achieving students who might largely come from low SES families (Law, 2014). Most importantly, the Chinese education system still relies heavily on entrance exams to evaluate and determine students' educational pathways (Wang, 2015; Zhao, 2007) which place low SES students in a relatively disadvantaged situation as low SES families generally lack social and educational resources (Gu, 2007; Wang, Li, & Li, 2014; Wen, 2005). Of all the tests administered in the Chinese education system, the National College Entrance Exam is the most critical for students, educators, school leaders, and educational leaders. For students, the test is critical because the NCEE scores are the only criterion for college admissions in Chinese universities; and, for school leaders and educators, the test is critical because their evaluation largely depends on the scores their students obtain on the NCEE (Liu, Xu, & Stronge, 2016; Liu & Onwuegbuzie, 2014).

Socioeconomic Status Factors' Impact on Education

In this section, the author will discuss previous seminal studies on low SES students and their academic success in Western nations. As China is a socialist country and political propaganda is centered on social equity and advanced social system, scholar

stances and academic work about social inequity have been influenced severely by government censorship. In this context, the research of Chinese social inequity issues is largely underdeveloped. Learning about seminal studies from Western scholars can offer valuable insights for this dissertation. The author believes that comparing the results from this dissertation with findings from other scholars' research could benefit the discussion and produce constructive recommendations for Chinese education practitioners to improve education in China.

For decades, Western researchers have utilized students' socioeconomic background to evaluate educational process and predict academic achievement (Bornstein& Bradley, 2003; Brooks-Gunn& Duncan, 1997; Coleman, 1988; McLoyd, 1998). Sirin (2005) suggested that students' achievements at school are associated with school, home, and societal factors, most of which are rooted in socioeconomic forces. Prior research suggests that low SES family circumstances could have an impact on their children's education. In contrast, students from high socioeconomic status families often are high achieving in education, because they can receive proper support and nurturing from their parents for their development (Jeynes, 2007; Lauen & Gaddis, 2013; Perry & McConney, 2010; Stewart, 2008).

High SES parents are often able to provide high quality childcare, to control their children's developmental factors, and to find information that prepares their children better for their education (Jeynes, 2007; Lauen & Gaddis, 2013; Perry & McConney, 2010; Stewart, 2008). On the other hand, lower SES students often lack the same rich opportunities for intellectual stimulation (Lauen & Gaddis; Jeynes; Perry & McConney; Stewart). In this regard, children from low SES families may experience malnutrition and

poor educational support at home and face other environmental toxins associated with poor neighborhoods, and home and school environments. Previous research has repeatedly demonstrated that these factors sabotage the intelligence and academic development of children (Lauen & Gaddis, 2013). Comparative samples of families' impact on children's lives show how parents' SES increases or decreases academic opportunities and achievements. There is a common belief held by a number of researchers that a child's accomplishments pertaining to later attainment and aspirations are closely associated with parents' prospects (Jeynes, 2007; Perry & McConney, 2010; Stewart, 2008).

Individual and Family Poverty

A family's SES is based on income, occupation, education, and social prestige. This status can profoundly impact a student's perception toward education, motivation, school readiness, and academic achievement (Thoron & Myers, 2011). Fan (2012) found that students from SES families appeared to have significant achievement gaps in different grades. Although the differences in families' income cannot fully explain the achievement gap, the relationship between poverty and low achievement has become a widely accepted stance in research. For instance, Dixon-Roman, Everson, and McArdle (2013) suggested that children who are not poor generally outperform their counterparts who live in poverty throughout their school careers.

Various studies have suggested that low SES students are more likely to maintain a lower grade point average, to be retained in a grade due to low achievement on benchmark tests, or to be placed on academic tracks less conducive to academic achievement (Baird, 2012; Nichols, 2003). Specifically, previous research found that

student SES is a significant indicator of scores on mathematics and reading tests (Baird, 2012; Kieffer, 2010; Suppes, Liang, Macken, & Flickinger, 2014). Nichols (2003) found that low SES students constituted more than two-thirds of students who failed to meet both mathematics and English state requirements. The study from Baker et al. (2008) also revealed that individual and school poverty can compromise student achievement and that students who attended schools with a higher poverty rate performed worse in benchmark tests.

Moreover, Kober (2001) found that children from low-income families are likely to experience health problems, malnutrition, violence, substance abuse, and other factors that depress academic achievement. Nichols (2003) claimed that the problems mentioned in Kober's study are contributing factors that lead to low-income students to experiencing more school absences than high-income students. He found that low-income students have an average of three to four more absences per year than that of high-income students (Nichols). This pattern of poor school attendance for low-income students evolves from the beginning of their educational careers to an average of 18-20 absences per year by the tenth grade (Nichols).

Congruently, a large body of research revealed that students who are eligible for the Federal Free and Reduced Price Lunch Program are at risk of low-test performance and academic failure (Ellinger, Wright, & Hirlinger, 1995; Malecki & Demaray, 2006; Sun, 2014). The Free and Reduced Price Lunch Program is offered by Aid to Families with Dependent Children (AFDC) and benefits families whose incomes are below a certain poverty level (Caldas, 1999; Kain & Singleton, 1996). A large body of research findings has demonstrated that there is a negative correlation between student

achievement and family poverty status as measured by students' participation in the Federal Free and Reduced Price Lunch (Malecki & Demaray, 2006; Okpala, Okpala, & Smith, 2001; Okpala, Smith, Jones, & Ellis, 2000; Sun, 2014). For instance, the increasing percentage of students on free and reduced lunch is consistent with decreasing scores in reading at a level of high statistical significance (Ransdell, 2012). In addition, the relationship between free and reduced lunch program and students' math scores is also palpable: average mathematics scores in a school correspondingly decreased by .06 points with every 1% increase in the percentage of students receiving free and reduced school lunch (Roscigno, 1998). Roscigno also found that average test scores for a given school decreased by .04 points if the amount of the student body that receives free lunches climbs one percent. Similarly, Dixon-Roman et al., (2013) used structural equation modeling (SEM) to investigate the impact of family economic dynamic on high school students' standardized test scores. A sample of 781,437 was included in this study to evaluate the family SES effects and high school achievement. The findings from this study aligned with previous research and indicated that Caucasian students, who generally came from higher SES families than their African American counterparts, were more likely to achieve academic success (Dixon-Roman et al.).

In conclusion, the school achievement gaps of students from different family backgrounds are well documented in past Western studies. Family SES has a significant effect on the educational process and attainment as children from high-income families are more likely to receive academic support within their home environments than children from low-income families do (Conger, Conger, & Martin, 2010; Miller & Taylor, 2012; Okpala et al., 2001). Low-income or working class families experience stress

when helping children complete home assignments, finding suitable communication patterns for education, and setting up education expectations (Jeynes, 2007; Stewart, 2008). Conger, Conger, and Martin (2010) claimed that the economic dynamic has placed significant pressures on many low SES families in terms of financial distress and constrained needed social resources to help their children pursue their educational goals. In contrast, when children from middle or high-income classes received appropriate home support, their academic achievement scores normally improved (Okpala et al., 2001).

Family Structure and Family Socioeconomic Status

Two meta-analyses from Jeynes (2007) and Sirin (2005) revealed that there is little doubt among previous research findings that poverty, minority race, and family structure are closely linked to lower performance in schools in the United States. The prediction of education outcomes based on the knowledge of the racial and socioeconomic composition of schools and the family background of students can be fairly accurate (Jeynes, Sirin). Fetler (1989) found that social class characteristics could be a strong overall predictor of educational performance. The strong association between educational performance and family income, parental education, and the availability of educational resources within the home were presented as solid indicators of students' performance at school (Fetler). Bankston and Caldas (1998) claimed that students' academic success is largely influenced more by individual family factors than the economic status of the school itself. According to Bankston and Caldas, family structure is a powerful indicator to predict student achievement in school.

Much of the difference in achievement between students from two-parent and single parent families is palpable. The discrepancy between the two groups is due to the

impact of the lower income of single parent families, typically headed by a female earning less than males and with only one paycheck (Heard, 2007). In the study from O'Malley, Voight, Renshaw, and Eklund (2015), based on longitudinal data, findings indicated that living in a single parent family could compromise the educational attainment of students. The study revealed that students were inclined to complete fewer years of education even if they spent a small period as children of a single parent home compared to their counterparts who grew up in two-parent homes (O'Malley et al.). In the United States, the family poverty rate in families headed by single women is six times higher than that of other family types (Bankston & Caldas, 1998). Specifically, research has shown that students who were raised in single mother families were less likely to obtain academic success in general (Bankston & Caldas). Moreover, it is statistically significant that such children have a higher risk than their counterparts of achieving lower levels of education, dropping out of school, experiencing psychological problems, becoming addicted to drugs or alcohol, or taking part in aggressive and disruptive delinquency (Bankston & Caldas). However, the impact of family structure on low SES students' education in China is largely unknown and is a subject open to meaningful research.

In addition, Caldas (1999) argued that family socioeconomic status and parental composition are highly correlated, and both of those factors were strong indicators of students' school performance and education potential, as some combinations of family patterns and family social class may allow some students to have greater access to educational resources at home. Some of those family factors conducive to having more educational resources at home are parents with higher levels of education, families with

more income, and families with fewer siblings in the house. The research findings from Eun Koh, Stauss, Coustaut, and Forrest (2015) reaffirmed Caldas's arguments that these family variables might affect students' educational performance and attainment. Both studies stressed the relationship between the number of siblings in a family and student achievement. The same pattern was mentioned in a previous study by Roscigno (1998) in which the researcher articulated that the educational performance of students could have a negative correlation with the number of siblings. The study results showed that, for every additional sibling, reading test scores decreased by .5 points and that the influence on reading was stronger than on mathematics (Roscigno). These phenomena could be explained by factors such as parental attention, family resources, and educational supervision (Roscigno). The more children a family has, the less educational resources each child has access to as the resources available have to be shared among them (Roscigno).

School Poverty and Academic Success

George Stern, a rigorous Social psychologist, published his prize-winning book, entitled *People in Context,* in 1970. The book was a summary of his studies on measuring person-environment congruence. Stern said that the environmental setting is significant to cultivate people's perception towards the environment and society (Stern, 1970). Along these lines, according to Perry and McConney (2010) and Boyd, Lankford, Loeb, Rockoff, and Wyckoff (2008), the overall school SES is an influencing factor of academic achievement, because the school environment can influence the students' motivation in learning and shape their perceptions about education. In the U.S., the percentage of students in a school who are eligible for the Federal Free and Reduced

Price Lunch Program is used to determine the average poverty rate of the school (Hough & Schmitt, 2011; Kurz, Kettler, & Reddy, 2015; Rumberger, 2007). The implication is that high levels of poverty rate at a school tend to be correlated with lower achievement for all the students enrolled in that school, regardless of whether the individual may or may not come from a low SES family (Kincheloe & Steinberg, 2007; Kober, 2001; Sirin, 2005; Willie, 2001). A large array of studies demonstrated that high poverty schools encountered higher rate of student absenteeism and a lower percentage of students holding a "positive" perception toward academic achievement than those of higher SES schools (Hough & Schmitt, 2011; Kurz, Kettler, & Reddy, 2015; Rumberger, 2007; Willie, Alicea, Alves, & Mitchell, 1998).

In a study conducted in New York City, a strong relationship was observed between the economic status of a school and students' performance on tests (Kurz et al., 2015). This relationship was also found in another study in Maine which found that the high-achieving schools in that state had a lower low-income student population in contrast to low-scoring schools that had a higher population of low-income students on average (Coladarci, 2006). These two examples provide evidence of a correlation between overall academic success and overall school poverty. Some researchers believe the occurrences of these phenomena are because high achieving schools generally have a positive learning environment influencing their students' perception towards education and motivating them to compete in tests to obtain high academic success (Anyon & Greene, 2010; Chiu, 2007; Nonoyama-Tarumi, 2008; Wang, Li, & Li, 2014; Wojtkiewicz & Katharine, 1995). Subsequently, high achieving schools have been becoming increasingly more homogenous with respect to high SES (Battistich, Solomon, Kim,

Watson, & Schaps, 1995; Reeves, 2003; Zhang, Chen, & Wang, 2014). The trend that high achieving schools have higher SES students has also been reported repeatedly in recent Chinese research (Lei et al., 2013; Tsegay & Ashraf, 2015; Zhang et al., 2014).

Teachers' Influences on Student Academic Success

According to research conducted by both Western and Chinese scholars, teachers play a significant role in students' academic success (Kurnianingsih et al., 2012; Martins & Veiga, 2010; Tsegay & Ashraf, 2014). The quality of teachers decides the quality of the teaching-learning process in classrooms, which will have an impact on the students' learning effectiveness and their learning outcomes (Kurnianingsih et al.; Martins & Veiga). To help students obtain academic success, teachers play various roles including facilitating student engagement (Toshalis & Nakkula, 2012), guidance and evaluation (Stanulis & Ames, 2009; Xu & Mei, 2009), and motivation of students (Cole, Feild, & Harris, 2004).

Van Uden, Ritzen, and Pieters (2013) stated that student engagement is important for learning, which is directly related to student academic achievement. Hu, Hung, and Ching (2014) also explained that one of the primary responsibilities of teachers is to facilitate the student's engagement in the classroom. A number of scholars also stressed the importance of keeping students engaged in the learning process, because it can help students have a better grasp of the learning material by making the material simpler and clearer to understand (Daschmann, Goetz, & Stupnisky, 2013; Freire, 2010; Toshalis & Nakkula, 2012; Van Uden, et al., 2013). Facilitating students' participation in the classroom can make learning interesting and positively impact student academic achievement (Daschmann et al.; Freire; Toshalis & Nakkula; Van Uden, et al.). In China

specifically, Chinese students think that their teachers, who utilized different activities and pedagogical principles to make their class participatory, eventually helped them to be well prepared for the NCEE (Hooks, 2010; Tsegay & Ashraf, 2015).

In China, the Teachers Law mandates that Chinese teachers should not only educate but also offer guidance and evaluation to students in their studies and development (Xu & Mei, 2009). Guidance in daily teaching and learning involves awareness, attitude, body language, and actions that reflect love and caring for the students (Tsegay & Ashraf, 2015). In the process of test preparation for the NCEE, students generally appreciate when teachers utilize the described guidance to evaluate their performance at school and provide constructive feedback (Tsegay & Ashraf). Based on the interviews of students' experience and perception in preparation for the NCEE, Tsegay and Ashraf found that the teachers' dedicated guidance and evaluation in NCEE preparation can contribute to their students' achievement of higher test scores.

Finally, many researchers suggested that motivation is an important factor that influences students' academic success (Shih & Gamon, 2001; Tella, 2007; Williams & Williams, 2011). Cole et al. (2004) claimed motivation to learn influences the decision-making processes, which determines the direction, focus, and level of efforts that students apply to a learning activity. In this context, motivation is an effective indicator to predict students' achievement (Pangeni, 2013). Past research has demonstrated that the teacher's role is a significant factor that influences students' motivation (Tella, 2007; Tsegay & Ashraf, 2015; Williams & Williams, 2011). The study from Tsegay and Ashraf (2015) based on Chinese students' perceptions revealed that teachers in high school cultivated the students' learning habits and responsibility and motivated students to achieve high

scores on the NCEE. As Tsegay and Ashraf claimed, “The students emphasized that their teachers gave them moral support and confidence that they could prepare well for the examination, which became a driving force behind their NCEE achievements” (p. 73).

Impact of Educational Leadership on Students' Academic Success

Similar to the insufficiency of research of low SES student issues in Chinese education, the studies on educational leadership are also lacking in the nation. Chinese scholars have placed less priority on this topic of leadership, because the processes of preparation of school leaders and educational officers in China are strongly influenced by political factors and government control. The author hopes that applying the findings of educational leadership studies from Western scholars can provide implications for this research in terms of the discussion of findings and implications for future practice and policy.

In the U.S., it is a general belief that school administrators are accountable for student performance on standardized measures of academic achievement (Ward, 2013). Troubling inequities in educational processes and outcomes demand greater effort from educational leaders to create socially just learning environments for all students (Marshall, 2004; Murphy, 2002). School leaders play critical roles in affecting meaningful and sustained advancement at the building level (Fullan, 2001; Leithwood & Riehl, 2003), but the challenges in education are complex, multifaceted, and interconnected. Hence, many scholars have argued that schools and school leaders cannot achieve the goal of educating all students alone (Anyon, 1995; Noguera, 2003; Warren, 2005).

Specifically, the findings from Henderson and Mapp (2002) demonstrated that strong parent-school connections are vital to improve student achievement and teaching

effectiveness. The connection refers to various forms of family engagement in children's education which are strongly linked to improved student education outcomes, from higher test scores to increased student engagement, motivation, and graduation (Dika & Singh, 2002; Epstein, 2001; Henderson & Mapp, 2002; Morgan & Sørensen, 1999). In addition, scholars have found educator–parent relationships can serve as significant social resources for improving school cultures and students' learning (Bryk & Schneider, 2002).

The findings discussed above regarding the impact of educational leadership on students' academic success have important implications for improving low SES students' school performance. Specifically, principals play a critical role in shaping strong relationships between parents and educators (Bryk & Schneider, 2002; Riehl, 2000). Although most principals have a desire to collaborate with parents, they are often inadequately trained or prepared to work effectively together with low-income parents (Brown, 2004; Cambron-McCabe & McCarthy, 2005; Epstein & Sanders, 2006; Evans, 2007). Much research has indicated that many low-income parents' relationships with educators may be characterized by distrust, misunderstanding, and lack of communication, and as a result, low SES parents feel unwelcome and powerless in their children's schools (Delgado-Gaitan, 2001; Lawrence-Lightfoot, 2003; Olivos, 2006).

Hence, many scholars called for collaboration between schools and families, concentrating on building the capacity of low-income parents to engage collectively in the education process, collaborate with educators, and hold them accountable (Gold et al., 2002; Mediratta, Shah, & McAlister, 2009; Schutz, 2006). As researchers stressed, educational goals cannot be achieved only by the endeavors of schools (Anyon, 1995; Noguera, 2003; Warren, 2005), but parent engagement in students' learning, as a

supplement to school education, could also contribute to students' learning and attainment (Henig & Stone, 2008; Warren, 2010). School leaders, especially principals, are a key to maintain the relationship between parents and schools and play buffering roles to bridge the gap between families and schools' daily operation (Auerbach, 2007; Cooper, 2009; Crowson & Boyd, 2001; Warren, Hong, Rubin, & Uy, 2009). Principals need to connect low-income parents with schools and enact shared leadership practices in the context of collaboration demand (Fullan, 2001; Sanders & Harvey, 2002; Sergiovanni, 2006; Shirley, 2009). Such understanding is essential because parents' involvement and families' engagement have become powerful partners and have great potential in improving schools and supporting student success (Gold et al., 2002; Mediratta, Shah, & McAlister, 2009; Schutz, 2006). However, there is a dearth of literature focusing on the school leaders in relation to improve low SES students' academic success in China. Learning about school leadership studies from Western scholars can offer valuable cross-cultural insights for this dissertation and benefit the discussion by producing comparative recommendations for Chinese education practitioners to improve education in China.

Low Socioeconomic Status Influences on Chinese Education

As the above research demonstrates, the relationship between socioeconomic status and student academic success has been a focus of study in the Western world for a long time. A large body of research articles and books were published as early as the 1960s and 70s with research continuing up through the current time (Bernstein, 1977; Bordua, 1960; Stern, 1970). American researchers have successfully developed theories and implications for a myriad of subcategorized fields under the major theme, such as family structure, parental education, gender, race, location, and school poverty in relation

to low SES and student academic outcomes (Sirin, 2005). Previous Western studies in these areas have provided valuable information to guide educational reforms by Western educators and policymakers.

However, the research on socioeconomic status and educational achievement correlation is new in China. Because of the political regime, China ideally should not encounter an education achievement gap caused by social disadvantages, as previously mentioned, because of the assumption that a socialist society does not have a hierarchical class system. Although during the Cultural Revolution China was eager to promote education equity and abate the influences of socioeconomic status on education by compromising middle and upper classes' right to education (Deng & Treiman, 1997; Wang, 2012; Zhao, 2004), today's Chinese society has disadvantaged SES groups. Chinese researchers started to pay attention to the impact of SES on educational outcomes in the 1990s, but there were a limited number of articles published at the time. The research spotlight began to focus on this issue in the twenty-first century, when the Chinese economy stratified the Chinese society and the wealth gap increased, creating an issue for educators working for the academic success of all students (Herman, et al., 2012; Li, 2012; Qi & Wu, 2016; Zhang, 2006).

Inadequate Education Investment

Based on previous educational research, Chinese low-income families relied on multiple sources to pay off their children's education bills (Qi & Wu, 2016; Wong et al., 2015; Zhang, 2012). Most low-income families' expenditures related to their children's education were primarily subsidized by government financial aid, while the second largest source of education financial support was provided by relatives and friends, and,

the financial support from families' part-time job incomes served as the third largest source of financial support for the education of low SES students (Zhao, 2007). However, only a small percentage of the low-income families' income accounted for their children's education (Qi & Wu, 2016; Wong et al., 2015; Zhang, 2012). In contrast, studies found that middle to high SES Chinese families' education investment for their children mainly depended on their working income with a larger percent of income spent on educational support as income increased (Zhang, 2012; Zhang, 2014). This reflects both that Chinese low-income families were struggling with financing their children's education and that there is a need for more reliable financial sources to support low-income families with their children's education expenses (Qi & Wu, 2016; Tsang, Ding, & Shen, 2010; Wong et al., 2015).

The low SES families' meager investment substantially deprives their children of educational resources, which can have an impact on education outcomes. One example of this is after-school education or private tutoring (Bray & Lykins, 2012; Tsang et al., 2010; Wong et al., 2015; Xue & Ding, 2009) which are not provided for free by the government education system and require extra financial support from families. In China, an increasing number of families have utilized this method to improve their children's competitiveness in the National College Entrance Exam (Bray & Lykins; Tsang et al.; Wong et al.; Xue & Ding). Zhang (2013) suggested that, considering the large proportion of students receiving private tutoring and after-school classes, this additional form of learning should be considered as a significant part of the Chinese educational system. It has been documented by research that private tutoring has positive effects on students' education outcomes, specifically for students with lower achievement (Zhang). However,

low-income families generally do not have the ability to invest in their children's private tutoring or in tutoring courses of good quality (Zhang, 2013; Zhao, 2007). The study from Zhao (2007) showed that 43.3% of higher SES families spent more than 200 Yuan ($30 USD) and that 23.3% of the families invested more than 500 Yuan ($70 USD) for their children's after-school education and tutoring monthly; in contrast, low-income families did not make any investments in this respect. Regarding extra-curricular book expenses, he found that 62.9% of low-income families did not invest in extra-curricular book expenses, 11.4% of low-income families spent 50 Yuan ($8 USD) on extra-curricular books every semester, and that the highest investment of this group's spending on extra-curricular books was 150 Yuan ($20 USD) every semester, accounting for only 2.9% of the total of low SES families (Zhao). Compared with low-income families, the average expenditure of higher SES families for extra-curricular textbooks was significantly higher, with 53.3% of them spending more than 100 Yuan ($15 USD) for their children every semester (Zhao).

Evidently, there is a huge gap in the financial capacity of Chinese families for educational investments (Lu, 2015; Wong et al., 2015; Zhang, 2014). Low-income families encounter various disadvantages in supporting their children in financial terms (Lu; Wong et al.; Zhang), as even paying for basic educational fees requires multiple sources of financial aid (Zhang, 2012). In comparison to higher SES families, low-income families struggle to provide the same-level of learning conditions for their children (Lu, 2015; Tsang et al., 2010; Wong et al., 2015; Zhang, 2014).

Low Socioeconomic Status
Barriers in Education

Due to the economic burden of education, many Chinese children from low SES families have been deprived of schooling and illegally have become laborers (Gu, 2007). Consequently, as China has enacted a number of laws to prevent the use of child labor, most of these dropouts can only find work in the informal sector, often with poor working conditions and high work intensity which causes great harm to children's physical and mental health (Gu)**.** This phenomenon is a common occurrence in Chinese low-income families (Zhang et al., 2015). Many school-age children from low SES families who have enrolled in school on time drop out of school shortly after school starts (Zhang et al.), and often do not stay at home, instead becoming child workers (Gu, 2007).

Traditionally, Chinese parents have a high degree of involvement in their children's education (Wang et al., 2014), and this tradition unwittingly connects the relationship between SES and students' achievements. During the last three decades of fast economic growth in China, according to research from Wang, Li, and Li (2014), the gap of household income between low SES families and their more wealthy counterparts has been widened significantly. Wang et al. believe that, regarding parental involvement in education, the unbalanced economic development might have magnified the impact of SES on the education process and outcomes in China as educational resource distribution has unduly favored higher SES families in general. There is no better example than the "school-selection" process practiced in recent years (Wang et al.). This process is the epitome of family SES's impact on education, which placed Chinese low SES families in disadvantaged positions compared to their middle and upper class counterparts (Wang et al.). In early 2005, Wen (2005) noted that, "It can be seen that parents choose primary

schools and middle schools for their children not based on the national educational policy, which states that children should put the school located near their home as the first choice" (p. 7). This trend is very common for middle and upper class Chinese families (Wang et al., 2014; Wen, 2005). Wealthy families are normally inclined to utilize extra capital or social resources to choose prestigious schools for their children (Wang et al.; Wen). In addition, Wang et al. (2014) suggested that:

> Many schools (at compulsory education level, especially middle schools) recruit students based on the results of some special examinations such as the Mathematical Olympiad, the content of which is usually not included in the public school curriculum. Since the children of more well-off parents receive considerably more tutoring or outside-school education (including private tutors), their chances of having a high social status are much greater than those of poor children. Social authority and class should not be ignored in considering the factors of SES. (p. 4)

This basic mechanism embedded in Chinese education explains the relation between SES and students' achievements: powerful parents can assist children in receiving instruction outside of the regular school day, getting higher scores, and being admitted to higher quality high schools (Qi & Wu, 2016; Wong et al., 2015; Zhang, 2014). Thus, the unbalanced distribution of educational resources caused by the difference in SES plays an important role in the students' educational opportunities and academic success (Herman, et al., 2012; Wang et al., 2014).

Similarly, Western researchers have also documented the perils of students who attend lower quality school environments (Spencer, Steele, & Quinn, 1999; Steele, 1999; Steele & Aronson, 1995). The concept of Stereotype Threat Theory could explain the achievement gap between disadvantaged students and their counterparts (Spencer et al.; Steele; Steele & Aronson). Students in the lower tracks are stereotyped as academically

inferior, which could threaten students' self-esteem and perception to value education (Zhang et al., 2014). This social and psychological predicament can lower students' engagement and motivation in school and make it more difficult for them to improve academically (Zhang et al.). In addition, high achieving schools normally have more high performing teachers who can enhance the quality of the teaching-learning process and class interaction, and eventually influence the quality of student learning outcomes (Hu, Hung, & Ching 2014; Kurnianingsih, Yuniarti, & Kim, 2012; Van Uden, Ritzen, & Pieters, 2013). At a high performing school, teachers can offer more challenging instruction and increased levels of exposure to more challenging course materials to motivate the students to learn (Tsegay & Ashraf, 2015; Zhang et al., 2014). Also, fellow students in higher performing environments tend to be better achievement models (Tsegay & Ashraf; Zhang et al.).

Based on limited studies in China, low SES factors may trigger other issues in education. Filial piety, obedience, and reverence towards parents are core values of Chinese families, thus Chinese children tend to perceive more parental pressure than that of their counterparts from Western countries (Chan, 1995; Crystal et al, 1994; Herman, et al., 2012; Lin & Fu, 1990). Under these circumstances, low SES parental expectations for children to obtain high academic achievement in school may cause more test anxiety for students (Chen, 2012; Zhang et al., 2011). Chen (2012) suggested that the ambition to obtain prestige for their own families, along with material affluence, through education is the major source for mental health problems among low SES students in China. The pressure from parents, the test anxiety, and the potential mental illnesses can produce many types of disorders in the learning process and sabotage Chinese low SES students'

education outcomes (Chen, 2012; Herman, et al., 2012; Zhang, Chang, Zhang, Greenberge, & Chen, 2011).

When it comes to the National College Entrance Exam, higher SES students tend to possess more abundant and better K-12 educational resources than their lower SES counterparts, and thus the former usually outperforms the latter in the NCEE (Lei et al., 2013; You & Hu, 2013; Xie & Wang, 2006). Specifically, some researchers overtly claimed that low SES students' English achievements are significantly lower than that of higher SES students in the NCEE (Lei et al., 2013; Perry & McConney, 2010). Considering the above, it is not a surprise that students from higher SES households have greatly outnumbered their counterparts from low SES families in achieving academic success in the Chinese education system (Lei et al., 2013; You & Hu, 2013; Xie & Wang, 2006).

Low Socioeconomic Status

Challenges

Many Chinese families traditionally consider education as the sole way to improve their current living conditions (Hammond, 2010; Zhao, 2007). As Wang et al. (2014) cited in the study:

> Chinese parents believe that if their children have education that leads to qualifications or professional status, they will have many more chances of getting good jobs and will have a high social status. Middle and upper class families share the same belief, while they enjoy the benefits from this education. (p. 3)

A number of past studies reiterated the importance of education in the role of poverty alleviation (Lu, 2015; Wong et al., 2015; Zhang, 2014) and that one of the primary goals of education is to help low SES families by breaking the vicious cycle of poverty (Lu; Wong et al.; Zhang).

Guo and Zhou (2006) investigated the relationship between rural education and farmers' income in China. The findings demonstrated that education could substantially help Chinese rural and low-income families' children to increase their families' income (Guo & Zhou). The education return is palpable to some extent, but, compared with developed countries, the present education return in China is not statistically significant (Guo & Zhou), due to the relatively high costs in Chinese education (Lu, 2015; Wong et al., 2015; Zhang, 2014).

With the increasing education costs for extra-curricular books, after-school education, and private tutoring in China, K-12 education has become less affordable to low-income families (Lu, 2015; Wong et al., 2015; Yang & Wang, 2016; Zhang, 2014). According to the 2015 Chinese Residents' Quality of Life Index Research Report (National Center for Education Statistics, 2015), the cost of education has caused financial burdens for low SES families in China who want to support their children in extra-curricular books, after-school education, and private tutoring. Specifically, Chinese high school education, which is not included by CEL, requires individual family's effort to finance the schooling (Law, 2014). For low-income families who support their children's education in the way of their higher SES counterparts, education expenditures are ranked as the chief household expense that can easily exceed their financial capacities (Lu, 2015; Wong et al., 2015; Zhang, 2014). Moreover, a study a about Chinese higher education suggested that, unexpectedly, some low SES students are afraid to enter a university because their families cannot afford the burden of college tuition (Lu, 2015). Among high school graduates from low SES families, most of them think that the education expenditure is unbearable for their parents, so they do not consider college

education and instead start to work (Lu). It can be said that the education costs have caused a serious economic burden for Chinese low SES families.

Under these circumstances, supporting their children's education has become less appealing in general, and this idea has gained popularity among low-income families (Zhang et al., 2015; Zhang, 2014). Wang et al. (2014) stressed that, since the adoption of the policy of universities to expand and increase their enrollment was enacted in 1999, students have had more access to attend higher education. The policy resulted in more than seven million graduates swarming into the job market in 2013 (Wang et al.). However, inconsistent with the growing number of college graduates, the job opportunities became constrictive due to the downturn of the Chinese economy, which now struggles to satisfy the need for employment (Lu, 2015; Wong et al., 2015; Zhang, 2014). Consequently, the resulting fierce competition renders a number of graduates unemployed which means that many low-income families' investment in the education of their children cannot be reclaimed (Lu; Wong et al.; Zhang,). Wang et al. (2014) averred:

> As a result, more and more low-income families do not support their children to continue their study, because of low family income and possible low economic return after their children's graduation. This view does not conflict with traditional Chinese culture, because of the practical and even utilitarian purpose of education. (P.5)

The problem of low educational attainment is even more severe for rural low-income families (Sicular, Yue, Gustafsson, & Li, 2007; Zhang et al., 2015). The Chinese Ministry of Education (China Education Statistical Yearbook, 2014) reported that, among rural low-income families' children, only 88% completed primary education and entered junior high school, while the missing 12% dropped out at the primary school stage. Only 70% of those who continued onto junior high completed their studies (China Education

Statistical Yearbook). In contrast, children who come from higher SES families have higher enrollment rates and graduation rates in all the stages of education (China Education Statistical Yearbook). These findings are consistent with estimates from other researchers that found that children from low-income families are more vulnerable in securing education opportunities as compared to their higher SES counterparts (Wang et al., 2014; Wong et al., 2015; Zhang et al., 2015).

Moreover, some studies indicated that the incidence of adolescent delinquency is higher among low SES families due to lack of parental care and involvement (Herman, et al., 2012; Qi & Wu, 2016). Students from low SES families have a higher absence rate than their peers at school, and absence from school can cause bigger issues of misbehavior (Huang, 2006). As mentioned earlier, a considerable proportion of low SES families have high mobility, because parents move in search of job opportunities. Their financial survival, rather than their children's education, is the main concern for most of low SES families (Sicular et al., 2007; Zhang et al., 2015). Understandably, children who come from low SES families generally miss the proper parental attention, discipline, and support for their education (Sicular et al.; Zhang et al.). In addition, much research has demonstrated that family mobility in China, especially for low SES families, can impede children's school performance because of the difficulty for children to adapt to different school settings, classroom cultures, teaching manners, and evaluation methods (Herman, et al., 2012; Huang, 2006; Tsang et al., 2010). Children from high mobility low SES families generally lag behind their counterparts in academic achievement, experience high school anxiety (Chen, 2012; Herman, et al., 2012; Zhang et al., 2011), and have a higher risk of dropping out from school (Huang, 2006). In general, researchers believed

that low SES students encounter numerous barriers in Chinese education, which could increase their social disadvantage and thus cause a further wealth gap in the Chinese society (Huang, 2006; Lv, Yang, & Wang, 2015; Wong et al., 2015).

Summary

Since China has a large overall population, the low SES population also reaches considerable proportions. Low SES students compared to their counterparts from middle or high SES families have been documented to be more vulnerable to experience difficulties in school (Jeynes, 2007; Kober, 2001; Sirin, 2005). These difficulties could compromise their educational and vocational development (Bornstein & Bradley, 2003; Conger et al., 2010; McLoyd, 1998) and lead to social and economic disadvantage in their adulthood (Wang et al., 2014; Wong et al., 2015). Like many Western counterparts, a number of Chinese researchers reiterate the significant correlation between students' family SES and academic performance at all levels of school. It is a repeated research finding that family SES can have an impact on students' education at multiple levels in relationship to learning attitudes, school performance, mental health, dropout rate, delinquency and so forth (Chen, 2012; Chui, 2013; Herman, et al., 2012; Luo, 2009; Tsang et al., 2010).

Nonetheless, the influences of SES on test scores, especially the Chinese NCEE, remain largely unexplored in existing literature. Considering the high value of test scores in Chinese education, the author believes that the findings of the proposed study may inform Chinese policy makers, building-level leaders, and educators as to how to better support students from low SES families and eventually improve social justice and education equity in China. You and Hu (2013) suggested that, regardless of the adverse

situation, quite a number of low SES Chinese students still seized college education opportunities by excelling on the NCEE due to their extraordinary diligence and work ethics. In this context, the successful examples of low SES students on the NCEE is worthy of research to reveal what factors influenced their success on the NCEE.

The author believes that studying the successful stories of students with low SES backgrounds who have achieved high scores on the NCEE can reveal valuable information that could be instrumental in helping other low SES students. Moreover, the findings of the proposed study could generate implications for practice for Chinese educators, school leaders, and educational policy makers to design better support strategies to help current low SES students to succeed in the NCEE, obtain collegiate educational opportunities, and achieve economic success in China which would benefit the entire society.

CHAPTER III

METHODOLOGY

This chapter opens with the statement of the research question. In order to answer the research question, the author elaborates the rationales for the epistemology, theoretical framework, methodology, and qualitative methods in this study. In addition, the trustworthiness of the study pertaining to sample selection criteria, data collection process, and data analysis procedures will be discussed towards the end of this chapter. To address the research problem discussed in chapters one and two, the author raises the research question: What are the experiences of low SES Chinese students who have achieved high scores on the NCEE? This research question will help the author guide the conceptualization of inquiry design and the research procedures, as well as the potential outcomes.

Qualitative Tradition

Qualitative research has been defined as "an inquiry process of understanding, based on distinct methodological traditions of inquiry that explore a social or human problem" (Creswell, 1998, p. 15). Denzin and Lincoln (2005) suggested that studying qualitative data could offer a powerful insight to understand phenomena, consisting of a set of interpretive, material practices that make the world visible. In this study, qualitative inquiries are adopted over a quantitative design in order to develop an in-depth

understanding of the influences of contributing factors on low SES students' NCEE scores.

Previous studies have demonstrated that low SES could impact students' academic performance and educational attainment in many aspects (Jeynes, 2007; Lauen & Gaddis, 2013; Perry & McConney, 2010; Stewart, 2008). For this study, the author specifically wants to collect qualitative data to investigate the challenges that low SES students experienced in preparing for the National College Entrance Exam and the factors that helped them to achieve high scores on this exam that is so critical to prestigious university admittance and future job placement. Specifically, the author was interested in learning what were the contributing factors that help low SES students obtain academic success defined in this study as the achievement of high scores in the National College Entrance Exam (NCEE).

The knowledge of low SES related issues in education embedded in family, societal, and school contexts, has rarely been discussed in previous research in China. Since qualitative research inquiries center on an understanding of meaning in context, words, pictures, and artifacts, this research approach can build on inductive exploration and generate descriptive findings (Merriam, 1998). Hence, the author holds that qualitative research is an effective tool to answer the research question.

To summarize, qualitative researchers study research problems by looking into the meaning that individuals or groups ascribe to a social or human problem (Creswell, 2006). The author chose a qualitative approach because this inquiry offered the best approach to reveal the meanings behind the phenomena and contexts explored by the research question. To articulate the research approach in this inquiry, the following

sections detail the epistemology, theoretical perspectives, methodology, and methods used.

Epistemology: Constructionism

Epistemology connects with the nature of human knowledge and imparts how people know what they know (Crotty, 1998). The epistemological stance in this inquiry is centered on constructionism. According to Crotty, the definition of constructionism is that all knowledge and meaningful reality embedded in a social context is constructed, developed, and transmitted by individuals' contingent interaction between human beings and their world. Because meaning is born out of the interplay between humans and the true world, constructionists believe that knowledge cannot be discovered or explored, but it can only be constructed by humans through the process of their engagement with the world (Crotty).

From the constructionism perspective, the world needs to be assigned meaning to make sense of reality. Although people engage with the same phenomenon, it is the researchers' subjective judgment to construct meaning and knowledge in order to interpret phenomena in the society (Crotty, 1998). Relevant to this study, low SES Chinese students encounter diverse social and cultural factors because of their families' SES (Lu, 2015; Wong et al., 2015; Zhang, 2014). Under the circumstances, Chinese low SES students have their own unique interactions and experiences with the world and might construct meaning in education differently than their counterparts who do not share the same experiences. Diverse school culture, family environment, government intervention, and self-motivation could cultivate a unique life context that might influence students' education processes and final outcomes. The dynamics of these

differences need scrutiny under the constructionism lens in order to construct the unique meaning of individual experiences. As Crotty (1998) suggested, "different people may well inhabit quite different worlds. Their different worlds constitute for them diverse ways of knowing, distinguishable sets of meanings, separate realities" (p. 64).

Constructionism is viewed through social and cultural contexts (Crotty, 1998). In this study, the author examined low SES students' performance on the National College Entrance Exam in relation to social (school and family) contexts. Constructionism offers the best fit for this study, because the author needs to consider social and cultural influences on low SES Chinese students in order to fully examine and answer the proposed research question. As Crotty asserted, social constructionism emphasizes the impact of the culture and social context on humans and how this influence shapes the way in which people see things in the world (Crotty). Consequently, the philosophy behind constructionism can guide the author to try to include all the contributing factors in participants' experiences to reach a trustworthy conclusion for the findings. Based on these rationales, constructionism provides the epistemological foundation upon which the study's inquiry rests.

Methodology

Phenomenology was used in this study because the epistemological stance and theoretical framework inform this type of methodology. Based on Creswell (2006), a phenomenological study aims to describe the meaning for individuals' lived experiences. The outcomes of a phenomenological study are able to depict a thick description of the commonality of participants' experience of a phenomenon (Creswell). Similarly, Van Manen (1990) contended that phenomenologists should focus on describing

commonalities that all participants have experienced in a particular phenomenon. The fundamental purpose of phenomenology is to focus less on individual experiences within a phenomenon and to emphasize the universal essence.

In this study, the author used the phenomenology approach because the potential participants shared their similar experiences in Chinese education, as well as similar cultural and social backgrounds. The phenomenon, which is the focus of this study, is low SES Chinese students' who have achieved high scores on the National College Entrance Exam. As a Chinese educator, the author needs to acknowledge the challenges and supports that low SES students who have achieved high scores on the NCEE experienced in preparing for and taking the NCEE. In order to do so, the author addressed the phenomenon from the students' perspectives.

Additionally, phenomenological description consists of "what" individuals experienced and "how" they experienced it (Moustakas, 1994). A large array of studies demonstrated that low SES students have a high risk of attending a high poverty school where they experience academically inferior curriculum, negative peer pressure, and poor teacher quality (Hough & Schmitt, 2011; Kurz, et al., 2015; Rumberger, 2007). All these factors could easily compromise low SES students' educational achievement (Hough & Schmitt; Kurz, et al.; Rumberger). In the context of this study, the accounts of the experiences of high achieving Chinese students from low SES backgrounds are worthy of research in order to reveal their unique perception of their successful experiences. Guided by phenomenology, the author tried to transcend past findings and present knowledge to further the understanding of low SES Chinese students' experiences in achievement of high scores on the NCEE at a deeper level.

Method and Research Context

Techniques, procedures, and activities used to collect and analyze data constitute the research methods. Within qualitative research, inquiry methods are highly personal and interpersonal (Patton, 2002). In this study, the primary technique to collect data is individual interviews. All the interview procedures strictly followed the rules of Institutional Review Board (IRB) protocol pertaining to contacting potential participants, sending research invitations, recording interviews, and saving interview records. A description of the methods to be used in this study follows.

Research Context

In qualitative inquiry, context is a rich resource for examining, documenting, interpreting, and understanding human experiences (Patton, 2002). This research centers on the question of inquiring about students' experiences, so the knowledge of contexts is significant. Lawrence-Lightfoot and Davis (1997) articulated the importance of context in research:

> Context becomes the framework, the reference point, the map, the ecological sphere; it is used to place people and action in time and space and as a resource for understanding what they say and do. The context is rich in clues for interpreting the experience of the actors in the setting. We have no idea how to decipher or decode an action, a gesture, a conversation, or an exclamation unless we see it embedded in context. (p. 41)

This study aims to give voice to under-represented youth by focusing on the students' perspective of challenges in Chinese education contexts, as well as the contributing factors that helped them to overcome the difficulties. Therefore, it is essential for the author to describe the contextual settings in which data was collected.

When conducting qualitative research, the researcher must select sites and individuals, which will purposely inform and enhance the understanding of the central phenomenon of the study (Creswell, 2006). Guided by this research principle, the author purposefully selected the location and schools for this qualitative study. The following paragraphs provide the rationale and criteria that was used by the author to select the research setting.

The author chose urban schools instead of rural schools, because urban schools serve the majority of the Chinese education school population and receive a high priority regarding Chinese educational resources. In addition, Chinese education mainly focuses on urban schools instead of suburban and rural schools, so nearly all the prestigious P-12 schools are located in urban areas and urban schools have more resources in terms of educational funding, qualified educators, educational information, high achieving students and etc. Specifically, the author chose Chongqing, a middle-income city with the fourth biggest population in China (National Bureau of Statistics of China, 2017c) to conduct this research. A middle-income city can reflect the general settings and contexts of the Chinese society, especially in terms of the quality of education. Another reason for the author to choose Chongqing is that the author used to work for a high school and university in the city and, in the course of that previous working experience, has established various networks in the local education system that can be used for the data collection process and benefit the progress of the study.

Selection of Participants

Qualitative inquirers are reluctant to generalize from one case to another because cases differ in the nature of contexts, so to generalize effectively, researchers should

carefully select representative participants for inclusion in the qualitative study (Yin, 2003). The selection process for this dissertation followed two significant standards: 1. The participants had received need-based grants in high school; and 2. The participants' NCEE scores were higher than the admission requirements of Chinese Key Universities. The first standard determined the participants' family SES, which would be a standard below that of families with the average minimum income in Chongqing, while the second standard confirmed the high scores described in the research question. In this context, the author ensured that the selected participants could provide valuable information to fulfill the purpose of the inquiry and answer the research question (Merriam, 1998; Patton, 2002).

In order identify low SES students with high academic achievements, the author purposefully focused on the "Hongzhi" program[1], because students who were in the "Hongzhi" program all came from low SES families and had outstanding performance in high school. The "Hongzhi" program admit 100 students into high schools every year, and this program randomly chooses two key high schools in Chongqing to host the program (Chongqing Education Bureau, 2016). For the cohort of 2016, the two schools in Chongqing are Vogel High and Cohen High[2]. Based on Creswell (2005), researchers need to select participants that demonstrate different perspectives on the problem. Informed by this research principle, the author contacted both of the two schools that

[1] "Hongzhi" program is the government sponsored education program that selects low SES students who are high achieving in middle school and provides high school tuition waiver and monthly stipend. All the selected students need to keep a good academic stand during the career in high school to secure the opportunity in the program. This program is operated in many cities in China.

[2] Vogel High and Cohen High are pseudonym for the two selected schools in the study.

have “Hongzhi” graduates in 2016 and sought permission to visit the schools and contact the “Hongzhi” graduates.

For a phenomenology study, the sampling pool ranges from five to twenty-five participants (Creswell, 2006). This dissertation aimed to interview 20 participants who met the selection criteria. Based on the information provided by school officials, 88 graduates from the cohort of 2016 met the standard of high scores on the NCEE. Among the 88 gradates, 40 students came from Vogel High and 48 graduated from Cohen High. The author distributed the invitations based on the proportion of high achieving students of each school and randomly sent invitations to 25 potential participants[3].

Data Collection

Data collection in qualitative research is typically extensive and seeks multiple sources of information (Yin, 2003). After receiving approval from the university’s Institutional Review Board, the author visited the selected high schools in Chongqing China and studied academic reports pertaining to the Hongzhi program and its graduates in the year of 2016. The author recorded information from the reports regarding to students’ name, NCEE scores, college admissions to fulfill the purposes of multiple sources of information. All the reports were public information and broadcast on the school billboards. With the assistance of school officials, the author sent invitations to some of the Hongzhi graduates in 2016. The invitations included an explanation of the study, what participation would entail, measures taken to ensure confidentiality, a consent

[3] The author sent out 25 invitations instead of 20 with the consideration of that the participation rate barely meets 100%. In order to ensure that the actually number of participation can reach 20, the author purposefully increased the number of invitations.

form, and a copy of the interview questions. After the qualified participants accepted the invitation, the author scheduled a one-on-one interview with each participant.

Questions are at the essence of interviews. By asking well-conceived open-ended questions, participants have an opportunity to respond in their own words and to offer their own genuine perspectives (Patton, 2002). In-depth interviewing "opens up what is inside people" (Patton, p. 407). In this study, the author used open-ended questions to identify the challenges and supports experienced by low SES students in achieving high scores on the NCEE. Interviews were designed to be approximately 30-45 minutes in length and digitally recorded for later review and transcription. The interview language was Chinese. Before each interview, the author asked permission to record the conversation for future transcription purposes and then read the consent form to each participant to inform them of all their rights in the interview process. All participants were provided with the interview questions ahead of time. Specifically, the participant interview questions include the following:

1. What scores did you receive from the exam?
2. What is your cohort ranking for your NCEE scores?
3. Are you currently enrolled in college?
4. What is the ranking of your college?
5. Would you please explain how you prepared for the NCEE?
6. Would you please describe any challenges you experienced in preparing for the NCEE?
7. Would you please identify what supports helped you to do well on the NCEE?

8. Do you have any suggestions for students who come from similar family backgrounds and want to obtain good scores on the NCEE?

After each interview, all of the responses were transcribed from Chinese and translated verbatim into English. Every attempt was made to share participants' original ideas to increase the trustworthiness of the data. The data collection lasted for two months. The author distributed 25 invitations to potential participants, who met the selection criteria in the study, and eventually interviewed 18 participants. Ten participants came from the cohort of Vogel High, while eight participants came from the cohort of Cohen High. All the participants took the natural-sciences test for the NCEE.

Data Analysis

After collecting the data, the author translated all the interviews from Chinese into English verbatim. Then, the author transferred the data from the interviews and field notes into a spreadsheet and started to code the information. The transcribed interviews have undergone open and axial coding. In the open coding process, the author read written transcripts several times to obtain an overall understanding of them. From each transcript, significant phrases or sentences directly related to students' challenges and supports regarding their experiences in preparing for and taking the NCEE were underlined and identified. Then in the axial coding, the author formulated the recognized statements and phrases into more clear and condensed sentences or topics. Finally, themes were identified by collapsing the axial codes in order to depict an in-depth description of the phenomenon. The process of analysis was iterative and involved both deductive and inductive strategies. Once preliminary descriptions and themes are

constructed, the researcher contacted participants to validate whether the themes reflect their original ideas.

Table 1

Example of Coding Process

Open Coding	Axial Coding	Theme Creation
"My teachers always guided me not only in my studies, but also encouraged me to have high goals in life…"	Teachers' support in study and life	
"My advisor shared her personal time to discuss my personal issues as well as my college choice…"	Personal touching from teachers in education and personal life.	Teachers' mentorship
"My teachers were like my lighthouse in high school study and my high school life…"	Teachers as role model in high school life.	

Trustworthiness

"Qualitative researchers strive for understanding, (reaching) that deep structure of knowledge that comes from visiting personally with participants, spending extensive time in the field, and probing to obtain detailed meanings" (Creswell, 2006, p. 201). As Stake (1995) pointed out, to attain that understanding, during and after a study, qualitative researchers need to constantly contemplate the question, "Did we get it right?" Answering this question is the foundation of the trustworthiness of a study. Creswell and Miller (2000) focused on seven strategies that are frequently used by qualitative researchers to maximize the trustworthiness of the study. At a risk of repeating some of the information provided above and for the sake of offering an accurate picture of the

safeguards of the study's trustworthiness, the author translated the strategies from Creswell and Miller into the following practices:

1. For sample selecting, the author carefully selected representative participants for inclusion in the qualitative study. The selection process was guided by the following two significant criteria: (1) The participants had received need-based grant in high school; and (2) The participants' NCEE scores are higher than the admission requirements of the Chinese Key Universities. The author utilized the criteria because the need-based grant is an effective indication of the participants' family SES, while high scores on the NCEE is the second condition described in the research question. By using the two criteria, the author believes that all the chosen participants offered valuable information to fulfill the purpose of the inquiry and answer the research question.

2. For the data collection process, the author strictly followed the IRB protocol, which mandates the researcher to hold a high research ethics and use all appropriate measures to protect participants' confidentiality. Consent forms were read aloud in Chinese and explained to participants and the author also requested the permission for recording the interviews before the interview started.

3. The author had his dissertation committee members review his work as an external check of the research process. In order to do that, the author constantly communicated with the members regarding all the details of the research progress and to ensure that this dissertation project was conducted in a manner worthy of a high quality research study and its related findings.

4. When confronting negative or disconfirming evidence, the author revised the initial and previous understandings until all cases are thoroughly discussed in the data

analysis. Specifically, the author paid close attention to exceptional cases that are antithetical to the knowledge from former literature and tried to develop proper conclusions out of the divergent findings.

5. In order to ensure clarification of researcher stance, the author commented on biases, prejudices, past experiences, and orientations that may compromise the interpretation and approach of the study. The author realizes that minimizing researcher bias from the outset of the study is significant so that readers are able to learn from the research outcomes without biases or assumptions that could have an impact on the inquiry. In order to achieve neutrality during the research process, the author respected the culture and protected the dignity of the participants. The author also created safe, welcoming environments to facilitate participants sharing their experiences, wisdom, and expertise as research partners from whom much can be learned.

6. The author had the members check the transcribed information. In order to fulfill this goal, the author re-approached the participants and invite them to review the interview transcription to verify that it correctly reflects what they said and all the information is correctly translated.

7. The author worked to provide a rich and thick description of the research cases and the details of the participants and settings that were part the study that would allow readers to make decisions regarding transferability. Thus, the author aims to enable readers to transfer information and determine whether the findings could be transferred to other settings “because of shared characteristics” (Erlandson, Harris, Skipper, & Allen, 1993, p. 32).

Summary

In this chapter, the author presented the research question that guided this study. In order to answer the research question, the author articulated the choice of the epistemology, theoretical framework, methodology, and qualitative methods that were used in this study. The selection of participants for this study included the key stakeholders, low SES students who have achieved high scores on the NCEE, as the primary informants. Utilizing the voices directly from students yielded a richness of data. The insights from high achieving students' perspectives sheded light on what has and can be done to support Chinese low SES student success on the National College Entrance Exam in the future. Finally, the trustworthiness of the study has been discussed. Trustworthiness of the study was attained through strategies from Creswell and Miller (2000). Trustworthiness of the study was established by selecting representative participants, correct data collection process, committee review, analysis of negative cases, member checking, comments on bias, and a rich and thick description of the research cases.

Lawrence-Lightfoot (2003) stated that, while the expectations that society had placed on public schools had barely been met, the literature in education had gloomily focused on describing what was wrong instead of what was right. Students are significant stakeholders in education whose successful experiences have valuable implications to educational practice but were often missing from the previous literature. To guide this study, the author wants to listen to high achieving students from low SES backgrounds and empower them to speak with their own voices to construct meaning of their

experiences. A profile of each participant will be provided in chapter four of this dissertation. Hopefully, the results from this dissertation will add knowledge to the existing literature and help to inform Chinese policy makers and educators as to how low SES students can be better supported to ensure greater equity in Chinese educational opportunities in the future.

CHAPTER IV

FINDINGS

This chapter opens with a brief introduction of the two high schools from Chongqing, China, selected for the study. This is followed by the participants' relevant background information, which leads to the descriptions of two participants' accounts that embody the findings of the study at large. The author spent extensive individual time with those participants, while they shared personal anecdotes regarding the topic of inquiry. Finally, all of the transcribed interview data are reported in the form of identified themes that directly address the research question.

Schools in Context

Based on Lawrence-Lightfoot and Davis (1997), qualitative researchers "…document and illuminate the complexity and detail of a unique experience or place, hoping that the audience will see themselves reflected in it, trusting that the readers will feel identified" (p. 14). Aiming to promote resonance for the reader, the author will describe the two selected high schools in this section to help the reader "feel as if he or she (were) there ... feel placed in it, transported into the setting (pp. 44-45). By describing the settings, the author hopes "to create a picture into which the reader will feel drawn ... to see, feel, smell, and touch the scene" (p. 59)

Vogel High School[4]

Vogel High was founded in 1913 and has a high academic reputation nationwide. Entering and walking in Vogel High's garden-styled campus was a pleasant experience. Although the author visited the school during the winter season, there was a vibrant and lively feel, enhanced by seasonal chrysanthemums all the way from the main gate to every corner of the education halls, which infused an atmosphere with a vitality carefully and quietly nurtured by unseen hands. In the hallways and buildings, as students and educators passed each other, they greeted each other in a friendly manner. They all seemed to have a clear purpose for their actions and attitudes, still there was an obvious openness to communication, which revealed both a high level of individual awareness and a sense of teamwork in the air.

The purpose for the school visit was to collect reported information about the Hongzhi cohort of 2016. The program is embedded in the larger school, and it is aimed to provide a high quality education experience to promising and successful low SES students. Outside the main administration building there was a billboard documenting activity details of the Hongzhi cohort. Unlike American schools, Chinese administration buildings are typically placed in the center of a campus, and all high value and important information is displayed on billboards in front of it. Typically, the boards include many details of individual students, their photographs, and activities in which they have participated. The Hongzhi cohort's billboard included the names, gender, NCEE scores, and college admission for the students, highlighting the outstanding "stars" from the cohort of 50 students. Two of the students have won National Olympiad Gold Medals,

[4] Vogel High School is a pseudonym for the visited school.

one for Math and the other for Biology, while another one had achieved the third highest score for NCEE in the Chongqing region for the year of 2016. (The total population of Chongqing exceeds 30 million, and the urban population is above 15 million.) The billboard presented the biography of each star, each of whom came from low SES families in the city or rural areas nearby, praising the diligence and hard work of each one of them, and encouraging all the current students to learn from their motivated stories. In addition, and most importantly, Vogel High reported the efforts and investment of school leaders, educators, and advisors to help the cohort to succeed academically and to achieve higher success in National Academic Olympiads and the NCEE. The report included the living stipend, extended learning hours, test preparation training, free learning materials, free tutoring, and all the hard work behind the success of the program. The billboard reflected, in the opinion of the author, the ambitions of each cohort member and the determined endeavor of the school to empower the cohort to obtain high academic achievements.

Cohen High School[5]

Compared to Vogel High, Cohen High is a younger institution, as it was founded in 1949, the year the People's Republic of China was founded. The size of the school is smaller than Vogel High. However, what defines Cohen High is the academic excellence it has achieved in recent years. Based on the school's billboard, Cohen High reached the highest rate of students admitted to a Key University in Chongqing for the previous three years. All the buildings on campus were glass-structured and sparkling clean which conveyed the feeling of being a very modern and up-to-date institution. It was quite a

[5] Cohen High School is a pseudonym for the visited school.

sight to see the Cohen's students, all wearing their mandatory stylish uniforms, moving through the bright and modern education halls. The school radiated an active and energetic spirit and atmosphere.

Cohen High also purposefully arranged a Hongzhi Report, which in their case was displayed beside the front gate of the school, instead of outside the main administration building. The Hongzhi billboard was about five-meters long, and the contents revealed the school's pride of the Hongzhi cohort achievements, displayed not only for people inside the campus but also to passersby and for the public. All the names, NCEE scores, and college admissions for the 2016 cohort were listed on the billboard. The report provided many details about the educational development that the Hongzhi cohort had experienced during the three years it has operated at Cohen High. The report, instead of being focused on individual talent or stars emphasized and promoted an inclusive education, aimed at helping every single cohort member to succeed. There were many pictures of the school-arranged activities (Parents' meetings, NCEE preparation seminars, meetings of the college's admission officers, and so forth) to ensure that the cohort was provided with adequate resources to achieve academic success. In fact, each one of the cohort members were treated as stars with nice portraits and a detailed description of individual achievements. The author was impressed to learn that all the cohort graduates have received further government support to attend higher education, based upon their academic excellence on the NCEE and high school. In addition, the billboard reported that 99 percent of the students of the cohort have reached the Key University's admission scores, and they could attend top universities in China by means of their NCEE scores.

Participants in Context

The data collection lasted for three months. The author sent 25 invitations to potential participants meeting the selection criteria in the study, which eventually resulted in 18 of them taking part in the interviews. Ten of the participants came from the cohort of Vogel High, while eight participants from the cohort of Cohen High. All of the participants took the natural-sciences test in the NCEE. The average NCEE score for the participants was 632, which is 107 higher than the minimum admission score to be admitted to a Key Chinese University[6]. All of the participants have been admitted to Key Chinese Universities and are currently enrolled in higher education. (Please refer to Table 1 for more information). To enhance the reader's understanding of this inquiry and help build a connection with the participants, parts of the interviews of two archetypal participants who spent extensive time with the author are presented in this section. Selected excerpts of the verbatim translations of those two interviews also foreshadow major themes from this inquiry, highlighted by their personal anecdotes.

Table 2

Participants' Academic Information

Participant's ID	School Affiliation	NCEE Scores	College's Ranking
15	Vogel High	702	1
18	Vogel High	678	2
1	Vogel High	670	2
4	Vogel High	664	5
14	Cohen High	662	5
17	Cohen High	648	7

Table 2

[6] The admission scores for Key Chinese Universities in 2016 was 525/750

Participants' Academic Information (continued)

Participant's ID	School Affiliation	NCEE Scores	College's Ranking
13	Cohen High	645	11
5	Cohen High	641	8
8	Vogel High	639	8
10	Vogel High	628	11
9	Vogel High	626	12
16	Cohen High	621	12
6	Cohen High	610	15
7	Vogel High	600	12
12	Cohen High	590	26
3	Vogel High	578	25
11	Cohen High	569	28
2	Vogel High	563	23

Lee[7]

The interview with Lee was arranged via QQ, a Chinese version of Skype, because he is currently enrolled in a university in Beijing, the capital of China. Lee was accepted by Tsinghua University last fall due to the very high score he obtained in the NCEE which was 702 and the highest among the participants in the study. Although the conversation took place online (vis-à-vis the face-to-face interviews of the rest of the participants), the author appreciates the distinctive quality that Lee brought to the study. Lee had carefully prepared his notes, and he remarked at the beginning of the interview, "I am wearing my best clothes for the occasion." The author noticed that Lee is highly organized and pays attention to the smallest detail. He smiled throughout the whole interview and responded to the questions confidently. The author barely could identify any impact of family poverty or low SES on Lee as he exudes optimism, and resembles

[7] Lee is a pseudonym used for the participant.

someone who has received an excellent education, not only at school but also at home.

The following are excerpts of core sections of the interview with Lee.

> A[8]: What scores did you receive on the NCEE exam?
> Lee: I got 702, but I thought I could have done a little bit better. You know, we all could do a little bit better.
> A: Right, right. That's the spirit. But this score is super good. I could tell you what I got for my NCEE. Do you wanna take a guess?
> Lee: 703. Ha!
> A: No, Lee. My score was 580, but that's like 12 years ago. Your score makes me jealous.
> Lee: No, I just had good luck. Ha!
> A: You don't think you just had luck. You earned it. So, do you know what your ranking in Chongqing was, according to the NCEE scores?
> Lee: I heard it was the third highest score in 2016 in Chongqing. But I am not sure. I believe this ranking is not very useful.
> A: Wow! That is an awesome ranking! You don't like it!
> Lee: No, I mean. I think it is fine, but I do not want my high school experience to define who I am. Now, that's all in the past. I want to focus on my present life. I am aware that I attend a top university not only in China but globally, so I need to start all over again. I want to keep my scholarship, but I want to accomplish more than just getting high scores in the future.
> A: I like your humble approach, as well as your aims. Can you please define your statement further?
> Lee: Well, I think after four years, people will no longer judge me by scores, but by what I can accomplish in my work. I think I should do a little better than what I did, because people need to do better every single day. I keep telling myself, everyday wake up with a purpose. And my purpose is to do better than yesterday.
> A: I wish my previous students had the same life motto as yours, because many were happy about everyday being the same. Anyway, I think we could cross the questions, "Are you currently enrolled in college?" and "What is the ranking of your college?" as they have been answered already.
> Lee: Well, I think I still can answer them anyway. I'm a college student. Ha! And Tsinghua is a quite all right university.
> A: Tsinghua is a great one! I really enjoy our conversation so far. You are truly an out-spoken person. Have you always been so optimistic when you have issues in your studies or life?
> Lee: My dad passed away when I was ten. I was basically raised by my mom. She never complained a thing about the loss in front of me, and always, always was saying, "If you smile to your life, your life will smile back to you." I guess I just really listened to my mom. Ha! Oh, by the way, my mother also emphasized continually that people "need to work hard and plan smart."

[8] A stands for the author.

A: So, you think your mom provided a lot of support for your life and school.
Lee: Of course, my mom not only supported me financially, but also paid close attention to my school, when I was younger. For instance, she checked my homework every day, although often she couldn't really check the contents, but she did review the grades given by my teachers. And in high school, she visited my advisor[9] every month and checked my progress. I must say my mom was the strength behind my doing well in school.
A: That's very touching. I definitely want to share your stories with more people. So, tell me more about the NCEE. I want to learn how you prepared for the NCEE.
Lee: I guess I just did what my mom had taught me: "work hard and plan smart." I never stayed up late as most did to study until two or three in the morning. I had a very organized schedule. I normally got up around 5:30 AM and started by reviewing some of my Chinese and English materials, then the rest of my day was pretty much routine, and the day strictly ended at 10:00 PM. I think people need to have a good rest in order to perform well the following day. In addition, I made plans for my studies, for instance, I have weekly goals, monthly goals, and goals for the semester. Moreover, I constantly adjusted my goals, if I encountered new problems or I made unexpected progress. My planning helped and guided me to achieve my little successes in high school and the NCEE.
A: Ok, so let me write these down. Organized, regular schedule, and planning. Then, were there any challenges you experienced in preparing for the NCEE?
Lee: Well, I cannot think of any in particular in my high school, because my school has many good teachers and facilities, which made it easy for me to succeed. In addition, although I am from a rural area, two hours away from the school, I did not experience any homesickness at all. I could call my mom every day, if I wanted to. But, I normally called her during the weekend, because, and please don't tell my mom, she was so nagging. Ha! But, she is a great mom. If there was a challenge worth mentioning, I think it would be my English. Before Vogel High, I attended only local schools in my hometown, and we did not have many English resources, such as English tapes to listen to, Internet access, not even tape players. So, when I went to Vogel, I was a little stressful to find that most of my friends in my grade, especially, those who have studied in the city, had much better English language skills than I did. My vocabulary was insufficient, I couldn't understand when my English teacher spoke a little faster, and my pronunciation was poor.
A: Wow, it must have been so hard for you.
Lee: Yes, it was a little hard, but the challenge made me very eager to learn English. I borrowed my friends' tape players when they were not using them. Well, I guess you could say this was a challenge too, because I couldn't afford to buy a tape player, therefore I needed to wait until people were not using theirs, to

[9] High school advisors are similar to American head teachers in school, but they normally have large responsibilities pertaining to supervising a specific class of students for their learning progress for all the subjects and help all the students from the class maximize the their academic potential and attain academic success.

borrow a player in order to practice listening and learn the language. This situation lasted for about two semesters, until my cohort advisor found the problem and bought four tape recorders for my cohort, because many of my other classmates from Hongzhi did not have a tape recorder either. Eventually, I had improved my English considerably. I think I got 135[10] for the NCEE, and I have just passed the National English Test Band 4[11].

A: It is good to find that you and your cohort received proper help from your school. So, talking about support, would you please identify what kinds of support helped you to do well on the NCEE?

Lee: Definitely, I must thank a long list of people who made it possible for me to achieve academic success in my high school. First, I have already mentioned my mom, who not only helped me so much education-wise, but she also played the role of both of my parents, and thanks to her, I have never felt that my life was any less than my peers' lives. Although our life was simple, my mom always provided all my needs for school and out of school. Her example is my role model to follow. She also encouraged me when I felt I couldn't make it and when I lacked self-confidence. For instance, when I was struggling with my English during the 10th grade, she kept encouraging me that I could improve my English saying that if I have been able to learn Chinese well, I could master another language too. This type of exchange of ideas inspired me a lot, that I could do it.

A: Ok, what else? I know your mom's sample must have meant so much for you and in your life. Who else helped you? Can you think of any other contributing factors that helped you?

Lee: Yeah, definitely. I was about to mention my teachers and advisors in high school. Also, I need to thank the Hongzhi program. Our teachers really loved us, I mean, all of us students, not just me. My cohort had 50 people. We all came from poverty families or from families facing great financial difficulties. Our teachers educated us wholeheartedly. I still can remember how, during those three years in high school every day, no matter it was during the hot summer or the freezing winter, our teachers educated us in class, and mentored us outside the classroom. They help us to set up our goals and guide us on how to achieve them. If it were not for our teachers, our goals would have remained merely a daydream. In our cohort, most of the teachers have had at least 10-year teaching experience their subjects. What's more important, our teachers made me feel that they did care about us, and not only our scores. Their support surpassed the definition of being a good classroom teacher, just teaching us their subjects, but more like parents who wanted us to flourish academically and to stay on the right track, to go to college, and to make our lives, and our families' lives better. It is beyond words to describe their efforts. I will consider them to be like my own family members forever. Actually, I still talk with them now and then.

[10] In the NCEE, the highest possible score for English is 150.

[11] The National English Band 4 is a standardized test for English skills in China. Historically, Chinese higher education requires all the students to pass this test in order to graduate.

A: I can speak for you too, because I went to the same high school.
Lee: You must have been very good too. I'm very proud to have attended Vogel High.
A: Then, was there anything else you think it's helpful.
Lee: Well, yes. Last but not least, my dear classmates in my class. They were also fantastic. We helped each other out all the time, and if one of us knew something better than others, we always offered to tutor each other, and that's very, very helpful. Because as students, we sometimes could understand better the struggles in the learning process, and we could easily explain that to each other easier. We had a secret agreement, you may think it's funny and laughable, that "we will either all make it to college or none of us should go to college." So, if we found any problem in the cohort, we would address the problem openly and we tried to keep a good learning vibe for the whole cohort. In reminiscing, I think I was really lucky to attend the Hongzhi cohort. Without the experience in the cohort, I don't think I would have made it to study in Tsinghua.
A: Good! So, to sum it up, mother, teachers, peers all have had a big impact on your education.
Lee: Yes and the Hongzhi program, of course. I think I need to thank the government too. I think they would feel happy to read these comments. Ha!
A: Ha! They always do. So, the last question, do you have any suggestions for students who come from a similar family background and who want to obtain good scores on the NCEE?
Lee: I would recommend everybody to work hard, focus on school, and be positive and active in everything at school. I think all of the factors, you know, my family, my teachers, my school, and my peers were very important, but at the end of the day, it is each of us that have to take advantage of all those resources to learn. You know, you are the only one who can help yourself focus in class, finish assignments after class, and prepare for the tests. I admit that I did receive a lot of help from others, but I also need to admit that without my own effort things wouldn't have happened. And, I think it's the same for everybody else. I was lucky that although my family was not doing very well financially, we still could make ends meet and that my mom helped me to focus on school. I know of students who come from a similar background that have to face many additional challenges because of poverty. I have friends that needed to work every day to help their parents, and that meant that they have less time to study and prepare tests, but they still managed their time and did pretty well on the tests and now they are all in college. I guess I want to say, life may be harder for us, but if we work double-hard, plan smartly, and use time well, we still have the chance to do well at school. It may sound unfair or sometimes frustrating that we need to make that extra effort to succeed, but thinking about your family and a future better life, it's all worth the pains. Those disadvantages don't have to kill you, but could make you stronger, so be thankful to life.
A: Wow, that's very inspiring. I hope more people can hear you views, especially other low SES students. Your words can definitely motivate them.
Lee: Then, please help me spread the word.
A: Is there anything else you want to add and share.

Lee: I think that's pretty much it.

Meimei[12]

Meimei is a female participant from Cohen High. Her NCEE score was 662, which opened the door to be admitted to Fudan University in Shanghai, one of the top universities in the country and in Asia. The author was able to meet her in person during the Chinese winter school break. The venue for the interview was a little bookstore which also served hot and cold drinks to customers. For the interview, Meimei brought many pictures of her cohort and of her personal life which deepened the dimension of the collected data. The author was able to learn about life in her cohort, as Meimei passionately introduced the pictures and the stories behind them. She had chosen pictures that focused on different types of events, such as Open Course Evaluations[13], night-study classes[14], NCEE seminars, and extra curriculum activities. One common denominator the author found from the pictures was the obvious high level of engagement of the individuals, as they actively took part in different events. Still, those partaking in the activities were like a flock of migrating wild geese, moving harmoniously, all going in the same direction, and with a clear common goal. The flock of geese analogy embodies the cohort's organized, inclusive, active, and purposeful interactions. The author selected some key questions and comments from the interview with Meimei.

A[15]: Would you please explain how you prepared for the NCEE? [16]

[12] Meimei is a pseudonym for the participant.

[13] Chinese school administrators evaluate teachers' teaching on regular basis by arranging class observations, which are known as Open Class Evaluations in China.

[14] Chinese high school students normally stay on campus to finish assignments until 9 PM or later.

[15] A stands for the author.

Meimei: I think these pictures can help explain this question. In the cohort, we had a high level of solidarity among ourselves. We always did things together. We shared everything. We had a buddy system, a type of paired partner thing, which I think it's super helpful. It was like, if I was good at math, while I was not so good at Chinese or English, I would pair with a friend in the cohort who was good at Chinese or English, but needed help with math, and in that way, we helped each other. In addition, we had a lot of preparation tests for the NCEE in the last year of high school. Then, we held discussions together after each test to evaluate any problems, to discuss plans of how each person could improve scores that needed improvement, and to determine what progress we should expect for each individual member. This way, everybody knew all the time that we, as a team, were moving forward together and no one was been left behind. Also, we had awesome teachers who knew how to deliver the classes and how to help us to prepare for the NCEE. In the past, some of our teachers even have been selected and tasked with designing NCEE questions, so we had our secret weapons in our team.

A: Would you please describe any challenges you experienced in preparing for the NCEE?

Meimei: I think students like me are confronted with more barriers and challenges in school or life than other students. Each of us at the Hongzhi cohort had their own sorrows in life, but we faced and swallowed them and kept moving towards the goal. I don't know all the stories of my cohort members, because we rarely came together to complain about difficulties. We mostly worked together to overcome our difficulties and barriers in learning. So, I mostly speak for myself. The first challenge for me was that I needed to spend considerable time to help my parents during weekends. My parents have a small shop selling tofu products, and they needed extra help during the weekends when it's normally a busy time. So, on weekends I helped my parents sell tofu during the day and sometimes helped them prepare some stuff at night. And, because of the work, I had less time to study during the weekend…I also have friends in my Hongzhi cohort who needed to help their families, for instance, baby setting a younger sibling, or taking care of grandparents… A challenge I had in the past, in my pre-high school years, was that, from to time-to-time, I had to move with my parents. Before my parents started their tofu business, they often needed to change jobs and find new jobs to support the family. And, whenever they moved to a new place, I had to move to a new school and adapt to the new environment. This process was time-consuming, and, because different schools used different textbooks, I had to buy new ones which caused some extra financial burden to my parents. I didn't want to put more pressure on my parents, so sometimes I just borrowed books from my friends. I don't know how I managed to study while having to borrow books, but in the end, my GPA was pretty good… then, the biggest challenge in my studies was that my English was very poor. Seriously, very, very bad, and I felt even more stressful in Cohen High because my friends outside of the Hongzhi program

---

[16] Greetings and irrelevant dialogues were omitted.

had a much better performance in English than mine or I can say than most of us at the Hongzhi program. At Cohen, almost every high school student outside the program, had a tape player or Walkman to practice English, but we normally couldn't afford it. Thankfully, our school bought us a stereo player to solve the problem and that helped a lot…
A: Would you please identify what type of support helped and encouraged you to do well on the NCEE?
Meimei: I think I need to say my parents first. They were always telling me that I needed to go to college, and not just to any college, but that I needed to go to the best one in China. They used to tell me often, "We will do whatever we can to support you, and you just focus on the NCEE and do well on it." So, all along I felt the responsibility that I needed to do well for me and for my family. Another support invaluable to me was the Hongzhi program. Through being admitted to the program, I had the chance to attend the best high school in the city, to work with many goal-driven friends who faced similar difficulties in life, and to be taught by the best teachers in town. Without all those factors and resources, I don't think I would have done so well in the NCEE, and perhaps wouldn't even have gotten okay scores for college… If I would have to name the influences and support in order of importance, I would say it was the Hongzhi program, my parents, and some of my friends from the cohort…
A: Do you have any suggestions for students who come from similar family backgrounds and want to obtain good scores on the NCEE?
Meimei: My suggestion is to focus on school. That's my rule of thumb. I know low SES students can easily get distracted when they start to attend high SES schools, like Cohen High. Most students in Cohen have fancy cell phones, fancy clothes, fancy this, and fancy that. And, those things, when you are coming from a much lower SES school, can make you go astray and lose focus. Especially, if you start asking yourself why I cannot have those fancy things that other students at the school have. But, the purpose for being in school is to get educated and to learn. It is not to compare lives or to live in a world of daydreaming. So my first suggestion is focus on school and on your own work…The second suggestion is to be active in the learning process. I was very shy when I started school in Cohen High, but I later found it was useless to feel shy. If you cannot communicate with your teachers and classmates, how can you make any progress and how can you get any positive input for you? If you have any problem that you cannot solve by yourself, turn to your peers and your teachers and seek their help. People appreciate that spirit of engagement and active participation. I think being active and outgoing builds your confidence and this is beneficial not only for school performance, but to your life…Finally, I think everyone needs to have hope, a hope for the future. Having hope had a tremendous impact on me, and I do want to share my belief with other low SES students. I know how people feel living in poverty. You wake up in the morning seeing little food on the table, and your parents have already been working for hours without having much breakfast. Then, when you go to sleep at night, you parents are still working for a minimum wage to support the family. You wonder when all this is going to end. But if you keep working hard, being active, and having hope and the vision that "if I can do

> well in school and if I go to a good college, then I can improve my family's life," then you will have the strength to conquer all the challenges and head on the right direction…

The excerpts from these two interviews reflect candidly many of the main views expressed by most of the participants in the study, although Lee and Meimei were among the students of the Hongzhi in Chongqing who have received the highest scores in the NCEE in 2016 in that city. Their views will be presented and discussed below along with all of the interview results. As an introduction to this part of the study, the author wants to share some preliminary observations. In the interviews, all of the participants commented that, upon joining the Hongzhi, they have found that they were insufficiently prepared and that they had not been taught adequately advanced Chinese and especially English language during their middle school education. However, it is worthy to note that they were all "natural science" students, and it should be considered in future research or in policy proposals that low SES students who took part in "social sciences" courses could still have had a better language instruction, including better facilities and resources. Another consideration is that, in spite of their low SES background, families, and schools; the participants have had a considerably solid academic foundation in the "natural sciences" during their pre-high school years which facilitated not only their being chosen to the Hongzhi program, but later, their being able to attain high scores in the NCEE. On the test, most of them achieved scores well above the one required to attend Key National Universities. It is important to remember that, in the NCEE, the participants competed with millions of students of higher SES from across China for limited college vacancies. Obviously, the higher SES students had the inherent higher SES advantages, access to resources, and support from their families. Therefore, it is reasonable to assume that the

pre-high school teachers and schools of the participants, although with considerable low SES limitations, played an important part and should receive credit for facilitating and providing a good enough pre-high school foundation for the participants to eventually succeed in such a nationwide environment. The comments by Lee and Meimei regarding the important role played by their parents could also be a possible indication that their families' support was a key factor in triggering the participants' individual motivation and determination to succeed. Finally, the author feels that the combination of the factors from support at home and at school could have been the key and determining factor that unlocked the participants' resolve and the door to their academic success by attaining such high scores in the nationwide competition set by the NCEE.

Interview Findings

The research problem addressed in this qualitative study centered on the need for a deeper understanding of what challenges low SES Chinese students encounter in school and what factors helped them to overcome those challenges and to obtain high scores on the NCEE. The data collection and analysis process were continuous and simultaneous (Merriam, 1998) and considered participants and the researcher as "equally knowing subjects" (Freire, 1972, p. 31). Through interview dialogue, the author acquired the preliminary data from the participants to understand the experiences of low SES Chinese students in their high school lives. After transcribed and coded the interview transcripts, the author re-approached all the participants through phone and email communications to validate the primary findings from the interviews. The process of data analysis, participants and the author had active interactions and worked together as research partners to co-construct the findings.

The final findings in the study are presented to answer the following research question:

Q1 What are the experiences of low SES Chinese students who have achieved high scores on the NCEE?

To answer the research question, the author presented two major themes: (1) supportive factors for obtaining high NCEE scores and academic success, and (2) challenges to NCEE and academic success. Embedded within both of the themes were three subthemes that focused on the influences of school, home, and the individual's motivation on low SES students' education process and outcomes. To help fully address the research question with greater details, the author summarized the major themes and all the subthemes for low SES students' educational experiences, as presented in Table 3. Findings were purposefully introduced in a specific order to demonstrate how the reported themes overlap and build upon each other. To help the readers construe the findings and to improve trustworthiness, extensive quotes were presented to support the two major themes and all the following subthemes. Since all communication with participants was conducted in Chinese, all quotes are directly translated from Chinese into English. All translations were completed by the author and were reviewed for accuracy by three bilingual professionals of Chinese origin. The following section concludes with interpretive comments highlighting the salient points discussed.

Table 3

Themes for Low SES Students Educational Experiences

Category	Supportive Factors for High NCEE Scores and Academic Success	Challenges in the NCEE and Academic Success
School Factors	• Supportive Policy for Low SES Students: 1. Hongzhi program 2. Scholarships 3. Other monetary support • Good Teachers: 1. Mentorship 2. Personalized care and support 3. Expertise of the teachers • Positive Peer Pressure: 1. Collaboration 2. Competition 3. Friendship	• Substandard Pre-high School Education: 1. Lack of qualified teachers 2. Lack of academic facilities 3. Lack of rigorous textbooks and curriculum
Family Factors	• Parental Engagement at School： 1. Communication with teachers 2. Visits to school • Parents' Effort at Home ： 1. Progress monitoring 2. Emotional support and life mentorship • Role Models • Parental willingness to Support Financially	• Time-consuming household responsibilities • Family mobility • Lack of educational resources • Parents unable to offer academic support • Gender preference
Individual Factors	• Diligence • Motivation • Confidence • Hope	• Distractions • Lack of communication skills at school • Learning stress and test anxiety

Supportive Factors for Achieving High National College Entrance Exam Scores and Academic Success

School Factors. All participants in the study agreed that they had received meaningful support from their high school that helped them to achieve academic success and high scores on the NCEE. Based on the interview data, the author identified three

contributing factors suggested by the participants embedded in the school environment: (1) supportive policy for low SES students, (2) good teachers, and (3) positive peer pressure. For the factor of the supportive policy for low SES students, all participants identified the Hongzhi program, different types of scholarships, and other monetary support which substantially helped them in their high school career. There were many comments similar to the following: "I think I need to thank the Hongzhi program that brought me to a prestigious school, prepared me to do well on the NCEE, and made me ready for college." "I think the Hongzhi program is so awesome, and I really hope more schools can have this program so more students like me can do well in the NCEE and can go to college." "Definitely, I want to give credit to the Hongzhi, because it gave me a chance to dream big." In addition, eight participants mentioned the assistance of different types of scholarship that provided monetary support towards their education and living expenses in high school. The scholarship and monetary support was not directly connected to their performance on the NCEE, but this group of participants believed that the support did benefit their education process and in turn impacted their education outcomes, such as the NCEE. One participant described:

> I received a lot of scholarships in my high school. Scholarship awards were granted on a semester basis. If you did well, the school would recognize you, and every award in my school involved a monetary prize which helped my education. First, it motivated me to study hard and do well in my tests. Second, I felt less financial stress from my family, because with the help of those awards, I did not need any money support from my parents and even I was able to help them (the parents) a little bit with my academic awards. I was very proud of that, and my parents were very happy about my school performance, too. So, to answer your question, I think that aside from the Hongzhi program, the scholarships also helped me a lot, and you can say they (scholarship) indirectly helped my NCEE success too…

In addition to supportive policies, all the participants gave credit to the help offered by their high school teachers in different aspects. First, participants indicated that their high school teachers were mentors for their academic and their personal life. Responses from participants, such as, “My teachers always guided me not only in my studies, but also encouraged me to have high goals in life,” “My advisor shared her personal time to discuss my personal issues as well as my college choice,” and “My teachers were like my lighthouse in high school” were repeatedly reported. Second, most of the participants stressed that their high school teachers played a role as an educator but also as a paternal figure. For instance, a female participant from Cohen High noted:

> My class advisor was like my mother. She cared about my classroom performance and test scores but also about my life at school. And, I must say her love for she really kept me motivated, because I was afraid to let her down. Even when I did not do well in tests sometimes, she never gave me a cold shoulder but helped me to reflect on the problems. In addition, she worried whether we (the Hongzhi cohort) had enough healthy food while living on campus, so from time to time she bought us fruit and milk with her own money. I didn't know how I could pay her back, other than to do well in all my tests and to receive high scores in NCEE to make her happy and proud.

Another participant reported a similar view:

> The entire cohort lived on campus, and the program basically paid for everything. But there were still some items we had to pay for ourselves, for instance the beddings and clothes. During the three years in high school, every winter, my advisor would check that everyone in the cohort had enough bedding and big coats to wear. If she found anyone needed anything, she reported that to the school for help, and sometimes she just bought the needed things from her own pocket. She was our mother. We love her… and we could not fail our mother.

Evidently, the participants’ high school teachers contributed to their academic success by showing them love and care inside and outside of the classroom. Another outstanding sub-theme regarding their teachers is that all participants held the opinion

that their course teachers were experts of the subjects they taught. For instance, one comment from a participant revealed:

> I received incredible help from my teachers, because they are experts of the subject they are teaching. Like my math and Chinese teachers, they were NCEE test designers a number of times, and I think that was very helpful for my preparation, because they knew the trends of the NCEE and they knew all the points that the NCEE may raise questions about. I think I was very lucky to have had teachers like them. Few students can have access to NCEE experts as I had in high school.

Similarly, another participant reported:

> All my core course teachers in the senior year have taught the subjects for more than ten years. They knew how to deliver the content in class, and they knew what assignments we needed to prepare for the NCEE. I remember my chemistry teacher often told us, "if you follow all my instructions in class, take notes, and finish my assignment, you will get good scores. If you did all that and did not do well in the test, come back to see me, and I will wake you up, because that will not happen." And, it was true. I didn't have any difficulties solving the questions of the chemistry part in the NCEE. My teachers were fantastic.

Finally, in addition to thanking the supportive policies and good teachers, the most participants in the study also indicated the importance of the positive peer pressure in their cohort for their achievement in schools and on the NCEE. Eleven participants said that their peers in the Hongzhi program offered them a lot of support and help for their education and ultimately assisted them in obtaining high success in education. In the Hongzhi program, the cohort provided a collaborative environment in which each member was ready to assist other peers that had difficulties learning a subject. This collaborative force among cohort members played a role in keeping individual students on the right track which was conducive to a successful pathway in education. Twelve participants, like Lee and Meimei, echoed the idea that the collaborative learning in the

cohort helped their success on the NCEE. For instance, one participant with a relatively lower score (compared to other participants in this study) on NCEE reported:

> My cohort had tutoring groups that paired classmates with different strengths and weaknesses in different subjects. Compared to my other classmates, I received tremendous help from the tutoring group because I was one of the low achievers in my cohort. But, my classmates offered me selfless help during those three years. Especially during the senior year, when we were having a huge load of homework, assignments, and test prep, I had many questions that I couldn't solve by myself and my teachers were not available 24 hours, but my classmates helped me after class, helped me in our dormitory, and literally any place and any time. I really appreciate that I had such a great cohort. Without them, I don't think I could have gotten the score that I had achieved in my NCEE.

In addition to collaboration, ten participants raised a point that competition within the cohort also motivated them to achieve success in education, because the competition drove them to stay ambitious in the education process and surpass the previous achievements in school. In Chinese high schools, each of the cohort members is ranked based on the scores for each subject and ranked for their overall scores. Because of that, individual students can compare their own achievements and rankings with those of their classmates. Hence, participants held that the competition within the cohort helped them to push themselves to make progress. As one participant suggested:

> We helped each other in class, but we also competed with each other on tests. I mean, everyone cared about everyone's rankings after each test. Did I make any progress in the test relative to the cohort's ranking? Did I reach the goal for my ranking in the test? How did the other "competitors" do in this test? We cared about this and we always compared our scores and rankings with each other…

Another example was:

> I was among the few persons who barely made it to the Hongzhi Cohort. So, for my 10th grade, I made a plan which was that I wanted to make progress in every subject by improving my test rankings. My desk-mate [17] was the highest achiever in my cohort. Everyone believed he was "Beijing or Tsinghua University" material, so I was secretly trying to catch up with him and, in fact, to surpass him in achievements. Although, I didn't reach my secret goal, compared to my 10th grade, my NCEE scores justified the effort, because I made a huge progress in my education.

Finally, the all interviewed participants reported another subtheme in addition to positive peer pressure which was friendship. All the participants mentioned that, aside from the cooperation and competition in school, they had close friends in the cohort with whom they actively engaged in the learning activities. More importantly, the role of friendship offered them support and assistance not only in the classroom but also outside of it. Comments in this subtheme included the following: "Having friends, I felt less stressful while being away from home and preparing for the NCEE;" "My friend and I shared our personal and school issues, and we tried to help each other resolve any problems. I felt secure with my friends, because they gave me a lot of strength to move forward;" and "Senior year made me feel like a robot, because we kept struggling to complete assignments day and night. Being with my friends after class helped me relax and to feel stress-free, which was helpful to do better in school and to prepare for the NCEE." Based on the interview responses, the author could conclude that, not only did friends help the participants in the learning process, but also propped up the participants' lives while in high school which eventually improved their school performance and promoted their academic success including on the NCEE.

[17] Desk-mate refers to two students who share a double-desk in a classroom.

Family Factors. The second major theme that emerged from the interviews focused on family factors that helped the participants to achieve academic success and obtain high scores on the NCEE. The family factors included clusters of subthemes which are as follows: (1) parental engagement at school, (2) parents' efforts at home, (3) role models, and (4) parental willingness to support the students financially. Each subtheme will be explained in the following paragraphs.

To begin with, 17 participants identified the parental engagement in their school education by parents having regular communication with their course teachers, taking part in school-family activities initiated by the school, and personal visits to the school. Fifteen participants said that they really appreciated that their parents would inquire about their school performance by talking to their course teachers regularly, because the parents' engagement would make them feel that their school performance was important and would motivate them to work hard. One participant commented:

> My parents visited the school nearly on a weekly basis, because they (parents) wanted to know whether I was doing well in school. And, I guess one reason they wanted to talk with my teachers was that they couldn't check or understand my homework and test rankings, so they wanted to get that information, but I was in favor of their engagement with my school. I know many high school students hate when their parents visit the school, because they worry that their parents would find out if they haven't done well in school or have had a bad performance in class and tests. I didn't feel this way. On the contrary, I wanted my parents to talk to my teachers so that they could find out that their son was not wasting their time and money, and that I could succeed in school, go to college, and help them to have a better life.

In the interviews, participants who expressed this idea generally held that their parents' communication with teachers had a positive impact on their performance at school, because they wanted to be recognized for their academic performance and to make their parents proud. In addition, nine participants reported that their parents were

actively involved in their education by attending school sponsored school-family activities, such as parent-teacher meeting, academic award events, NCEE seminars, and so forth. Those parents who would take time to attend those school events made the participants feel the importance of their studies and, again, would motivate the participants to surpass their previous achievements. One example was:

> My parents were busy. You know, they needed to support my family and they literally could not afford to take a break, because when they did, they were not paid at work. But, whenever my school had events that invited parents, they would come and I really, really appreciated that, because I felt I was their whole world. So, I worked hard to make them proud to have a daughter like me, and they were proud.

The positive impact of parental engagement on education was also revealed by another participant:

> Both of my parents didn't receive a high school education but that did not prevent them from supporting me to go to high school. And, what I really appreciated was that they actively attended all my school events, and they just wanted to know every little thing about my school and me. I remember in my senior year, the school held NCEE seminars for parents and students from time to time, and my parents were always trying to get a front seat in the seminar and worried about missing any important information offered by the NCEE "experts." When I saw my parents working so hard towards my education, how could I not give 100% to my studies, get good scores, and make them proud of it?

In addition to the engagement at school, ten participants also gave credit to their parents' efforts at home to check their studies. Eight of the participants mentioned that their parents spent time at home, whether on a daily or weekly basis, to monitor their academic progress by checking on their assignment grades, teachers' comments, test ranking reports, and so forth. For example, "My mother wanted me to show her the teachers' comments every week;" "They (the parents) couldn't review my homework, but

they could read the grades and read the remarks that teachers gave about my work;" "My parents kept track on my test rankings from the first test that I had in high school, and they always expected me to make progress on rankings for the next test…" and other similar comments echoed this subtheme.

Parents' efforts at home also included emotional support, especially in the case of participants whose parents had little education. A participant who received a 678[18] on the NCEE told the author:

> Many of my friends' parents [referring to his friends from the Hongzhi cohort] were not knowledgeable to help them with their assignments from school and test preparation, but they could at least read the teachers' comments to find out what was going on with their children. My parents could not even do that, because they were not capable to read teachers' comments or know what ranking was. They were very ashamed to talk to strangers, including my high school teachers, but they still went to the parent-teacher meetings. The support I received from my parents amounted to them telling me in their simple words things such as, "you can do it," "you are the best," and "you will be the only one in the family who will go to college" to encourage me. I always heard their encouraging comments when I went home or when they visited me at school. I am so thankful for my parents' efforts and sacrifices to support my education.

Another participant expressed a similar idea:

> My parents didn't understand much about my school stuff, but they offered me tremendous help by verbally encouraging me. Sometimes, I did not do so well in my tests and my rankings in the cohort dropped a little bit, and these things made me very frustrated, because I did work hard and wanted in return to see my test scores and rankings going up. My parents always comforted me and encouraged me to shake off any discouragement, start over again, and keep aiming for the ultimate challenge, you know, the NCEE. I think they (the parents) gave me a lot of emotional support that carried me through many difficult times in high school, so that I could eventually get a good score on the NCEE.

[18] The tier one university admission scores, considering as high scores, were 545 in 2016.

Finally, the two subthemes “role models” and “parental willingness to support students financially” are also connected with family factors. Although the author documented those two subthemes separately, 16 participants indicated the two subthemes intertwined in the interviews. When participants expressed their gratitude towards their parents’ hard work to support financially their education and school, the participants generally mentioned that their parents built a responsible image for them to follow in their education and future life. Comments from the participants that frequently were expressed during the interviews were as follows: “My parents are my heroes! They already supported my sibling in school, and without their sacrifices, I could not have made it, either;” “My parents worked very hard and sacrificed a lot for the whole family. They are my role models. Thinking about them strengthens my desire to learn;” “I hope I can be a responsible person as my parents are when I have kids. But I have been trying to be a responsible person in my own level, to do well in my school to make them proud;” and “My parents cannot help with my homework, but they tried to support me in other aspects. They told me not to worry about money and only worry about school and test scores and to go to college. They are my heroes.”

Individual Factors. In addition to the factors related to school and the home environment, most participants also stressed the significance of their individual efforts in education. Their most highly rated characteristic for a successful school career is diligence. Seventeen out of the 18 participants reported that working hard is the first step

towards success. For instance, the participant who is attending Fudan University[19] claimed:

> I think I am not smart, but I am just a hard working person. For all my pre-college education, I was very diligent with my schoolwork, and I barely wanted to devote any time to do anything else, because I knew that if I didn't work hard, other people could easily surpass me on the NCEE. Their families can provide for them plenty of resources like tutoring, test prep materials, and so forth. I needed to work double and harder to offset their advantages.

This idea of diligence is not an isolated belief. Sixteen participants overtly talked about their diligence in school and education during the interview. Ten of the 16 participants even believed that they received high scores on the NCEE, not only because they worked hard in high school, but also for their entire P-12 education. They tried to be more engaged than what their counterparts were in order to achieve a greater success in the different types of standardized tests. An example of this idea from a participant is as follows:

> You have to work hard all the way. I mean all the time, not only in high school, because the NCEE will evaluate your learning not only from high school materials but also from the whole P-12. You need to work hard to build a solid frontline, so when you are finally about to charge, you can have a chance to win the long battle, a 12-year long battle.

Moreover, interview dialogues with participants indicated that low SES students who achieved high scores had strong motivation to obtain academic success in school. Fourteen participants wanted to show their drive and determination by achieving high test

[19] Fudan University is the best social sciences university in China.

scores and high rankings in school. For instance, a strong motivation to obtain academic success is made clear in this participant's comment:

> I wanted to prove myself and I wanted to justify my existence, so I questioned myself how to do it. For students, the only way to evaluate their performance is through their schoolwork, tests, and the NCEE. So, I was motivated to do well in all my schoolwork from course assignments to any of the tests. And, all my efforts paved the way to receive a high score on the NCEE.

Another example echoing the subtheme of "motivation" is:

> My family had lived in poverty since I can remember, and my parents were treated unfairly by others repeatedly. I wanted to show people that I am capable to change my family's fate, by being always one of the best students in class. My teachers, my principal, and my classmates respected me because of my academic performance, and everybody congratulated my parents when they visited me in school which really made them proud.

"Confidence" is another subtheme for the individual's factors. This is a prevailing characteristic the author identified in the participants' responses. Although the participants' way of conducing and expressing themselves were very polite and humble, their comments in the interviews showed their confidence. The author found that all the participants repeatedly utilized the phrase, such as "I can," "I believe," "I will prove," and "I have demonstrated" in their responses. One example is shared below:

> I have kept a good stand throughout my school life before high school. The support we received at the Hongzhi program made [me] more confident that I could succeed in my high school, get high scores on the NCEE, and go to a good college, but in retrospect, I never actually worried about my performance at school, no matter whether it was about homework, quizzes, or tests. Some people did appear to be paranoid when we had a big test coming up. I didn't feel that way, because I knew, if I kept concentrating as I usually did, I could do well in anything, including the NCEE. I felt that, if I looked to the NCEE as a too big deal, my performance could be compromised. I treated every test as the NCEE, so when I really took the NCEE, it was just another test that I needed to complete. So, I always thought "the NCEE is not a big deal to me and I knew I could do well on

> it." Right now, I'm studying at the best college in China. With the help of education, I can pursue any dream I want.

Finally, "hope" is the last subtheme embedded in individual factors. Seventeen out of the 18 participants implied that they had hope that they will have a better life or improve their family SES with their efforts in education. Specifically, participants who reported this subtheme were eager to keep a high performance in academic activities in school and applied all possible efforts to secure a competitive score on the NCEE because of the hope of attending a high-ranking university or college in China. For instance, a female participant stated:

> I worked hard every day and aspired to have a good score for my NCEE, because I really wanted to go to a good college and find a good job eventually, so I can give my family a good life in the future. My parents willingly sacrificed a lot for my education. I couldn't fail them and their hope, so I had to get a high score on the NCEE. This hope gave me a lot of strength to conquer the difficulties in my studies and life in high school. I kept telling myself in high school that I did not need to succeed for my own, but for my whole family's sake.

Similarly, another participant echoed the stance by telling the author that:

> I didn't want to live in poverty in the future, and I do want to have my kids live in a stress-free family environment, and I want to give my parents a better life too. To accomplish these goals, I had to study hard and do well on all my tests, so eventually I could pass the NCEE and go to college. Whenever I met barriers in my life and learning in high school, thinking of my goals for my family and for me gave me the strength to face the problems and to find a way to solve them. I think I succeeded in the NCEE and overcame other barriers in high school because of that strong will to attain a better life in the future.

In sum, the participants in the study identified different positive factors from schools and families to help them succeed academically and achieve high scores on NCEE. At school, low SES participants had responsible and qualified educators to mentor their study and

life in high schools; low SES participants formed a goal-driven cohort to cultivate the learning motivation to flourish academically; At home, low SES participants gave credits to their parents for engaging in their education in different forms such as communicating with their teachers, monitoring their learning progress, offering emotional support, and financing their education. Eventually, the school and family factors collaboratively drove participants work diligently in study and strive for high success in high school education.

Challenges on the National College Entrance Exam and Academic Success

School Factors. Many of the challenges related to school that the participants reported regarding their NCEE preparation and academic success centered on the poor quality of their pre-high school education. While all the participants praised their Hongzhi program and the support that they received from their high schools, most of the participants claimed that their P-9 education was of a much lower quality that had compromised their academic potential and achievement in the early phases of their high school careers. The participants who reported this subtheme defined the poor education quality in three aspects: (1) lack of qualified teachers, (2) lack of academic facilities, and (3) lack of rigorous textbooks and curriculum.

First, 15 participants reported that their poor P-9 education was caused by the dilemma that low SES participants could not attend national policy regulated P-9 schools. Schools that don't reach those national standards often have a high poverty rate and lack qualified teachers. As one participant recalled:

> I spent a lot of time to catch up with my cohort (at the Hongzhi Program), because my previous schools were poorly staffed, for instance, the English teachers. When I entered high school, our English teachers expected that we have leaned lots of

> vocabulary and grammar before we started high school. But, my English was very poor, and I realized that my previous English teachers barely delivered the content that was required as a minimum for a good high school.

The author noticed that all participants were admitted into the Hongzhi program because they have had high achievements in Chinese, Math, Physics, or Chemistry, but there was an achievement gap in English among the participants due to a lack of qualified teachers. As mentioned before, this seems to indicate that their science teachers, as well as the books the students had access to, were better than those used by the English teachers. The author frequently heard comments such as, "My high school friends had learnt English since primary school, but I didn't even have an English teacher in my primary school" or "I couldn't understand my English high school teachers when they spoke, because my previous teachers' pronunciation was so poor." Based on the interview conversations, the author could identify the participants' struggle in high school especially in learning English, because their pre-high school education failed to provide for them a solid and quality foundation to be ready for high school in that subject. Out of the 18 participants, 11 overtly stated that they have been struggling academically with English language in high school and that their English score on the NCEE compromised their overall scores on the test. This group of participants believed that, if they would have had good English teachers before high school, they could have done much better in the subject on the test and could have gotten a higher total score on the NCEE.

In addition to the lack of qualified teachers in some subjects, most participants reported that their P-9 schools were poorly equipped with academic facilities. One comment that typifies this is:

> I did not have lab class before high school. Thankfully, the entrance test did not require students to conduct any experiments in real facilities. However, although the NCEE does not include lab work, my high school did require all the students to conduct experiments and physics, chemistry, and biology teachers graded our overall performance by including the lab scores into our final grade. Although my teachers were very patient and offered me a lot of help, I was struggling with that at the beginning, because I had never entered a lab before high school.

The problem of lacking academic facilities here mainly refer to the science subjects, but in high school, they were able to catch up fast once those facilities or labs were provided to them, unlike the learning of English. That is, participants unanimously agreed that, with the assistance of their high school teachers, they were able to learn to use the lab resources and do experiments during the transitional phase. However, regarding the lack of facilities or equipment to learn English during their pre-high school education, it took them much more effort and time to catch up, and as mentioned earlier, many reported that their scores for English on the NCEE were much lower than the scores they achieved in the science subjects. One participant claimed:

> I didn't practice my English listening before high school, because I couldn't afford buying a tape player to listen to English language tapes. This was not my problem only, as I think most of the other Hongzhi cohort members haven't had a tape player either. My high school advisor finally bought a little stereo player for the whole class to use. But, you know, we all had different levels in listening and we all have made different levels of progress in English, so it was still hard with only one tape recorder. However, I was still very thankful because, before high school, I did not practice any listening skills in school at all. My previous schools did not have facilities that would have allowed me to practice English, and I can speak for my Hongzhi classmates on this too. I don't think their previous schools provided them much support in terms of English learning tools.

This subtheme underscores that there was a learning and achievement gap in English language among the participants. Clearly, education is a sequential process, and academic achievement is largely based and dependent on previous experience and

learning. Specifically, language learning may need more educational resources at an earlier stage in order to obtain academic success later.

Finally, participants also identified the lack of rigorous textbooks and curriculum as challenges in their education compromising their academic achievements in high school and on the NCEE. Specifically, many of the participants believed that they had not had access to high quality textbooks and curriculums on the English language. Therefore, they expressed they have not attained the learning level required and expected when they entered high school. One participant shared an idea common among the participants:

> After I started my high school, I just realized there were many things that I needed for my English learning. Before (high school), I had only done assignments from the available textbooks, but I did not even know there were different textbooks focused on different components of English learning, such as, speaking, listening, reading, and writing. Before high school, I only learned about English reading and writing. So, when I started my high school, I felt like I needed to start to learn two more subjects on my schedule and that was very stressful for me to adapt at the beginning. Moreover, I struggled with my English for the whole time in high school, because I could not spend time on only one subject, as the NCEE has four tests that include seven subjects and I had to divide my time and attention between all of them. Eventually, I did not do well in my English on the NCEE, but I still think that, if I would have had good textbooks and curriculum earlier than high school, the results could have been much better.

Similarly, another response supporting this sub-theme was:

> The high school English textbooks and curriculum were so advanced for me, compared to my previous experience in previous English courses in middle school. Before high school, my teachers mainly required me to remember vocabulary and read conversational paragraphs, but in high school, my English teachers expected me not only to have a much wider vocabulary that mere conversational English, but in addition, expected me to be able to use English regarding math, science, literature, and so forth. While I started to practice my English listening and speaking skills in high school, many of the other classmates had started practicing that in earlier grades. I was lagging way behind my peers, even behind those who were part of the Hongzhi program, and my English had a lower score on the NCEE compared to the other testing subjects.

Family Factors. In the study, when addressing the influence of their families on their education, all the participants focused on gratitude to their parents' support and sacrifices made towards their education. None of the participants directly commented on any factor related to their home and parents that had a negative impact on their academic success on the NCEE and education in high school. However, based on the facts depicted in their dialogues, the author still identified a number of subthemes that could be considered as challenges to their education originating from their families.

Firstly, it was a common phenomenon that the participants needed to help with some time-consuming household responsibilities. Many of the participants had invested time to help with their parents' affairs or work or had to attend to the needs of family members, such as a younger sibling or helping to care for sick elderly relatives, since a very young age. Some examples are, "I needed to help in my parents' shop;" "I needed to babysit my younger brother;" and "I took care of my sick grandpa, who needed a lot of attention and care." Even in high school while having a heavy load of homework and test preparation for the NCEE, some of the participants still had to fulfill their duties at home. Consequently, the participants reported that "I had less time for my studies because I needed to help my parents" or "sometimes I needed to stay up late and sleep less hours, because I needed to help my family during the day, so that I needed make time at night to study." There was no direct evidence that the household responsibilities per se had a negative impact on the participants' academic success and test performance, but participants did imply that they have less time for their studies because of their contribution to home duties.

The second challenge that emerged from the interviews was family mobility. Six of the 18 participants reported that, before high school, they moved frequently because their parents needed to find work to support the family. Although the entire Hongzhi cohort had high academic achievements regarding test scores before high school, those six participants reported that they were struggling academically after entering the Hongzhi program. The author heard similar comments from the six participants, such as, "I was a low achiever in my cohort in the first year in high school;" "All my cohort members were faster learners than me;" and "They (classmates) just adapted to the high school environment very well, but I was trying to figure out the new settings for a couple of semesters." The six participants shared that their family mobility had an impact on their studies, in addition to the other mentioned disadvantages common to most of the participants of having a pre-high school substandard education. Under the circumstance, they needed a longer time to assimilate into the high school environment and to meet the higher academic requirements in schools like Cohen High and Vogel High. The author found that the NCEE scores for these six participants fell into the lower bracket scores in the sample pool. Hence, home mobility may have a greater negative impact on academic success and NCEE than some of the other challenges identified in the study.

In addition, the participants also reported the same lack of educational resources and academic support at home and from their parents during the educational process. Still, none of the participants believed that this lack of educational resources and academic support from their parents significantly influenced them. However, they did indicate that those two challenges commonly existed in low SES students at large and that they believed that the lack of resources at home had greater impact on other low SES peers'

education attainment and test scores than on their attainment or test scores. The lack of educational resources mentioned includes, “private tutoring;” “extra test preparation materials;” and “school selection.” Lack of academic support from parents refers to the fact that low SES students’ parents “couldn’t help them review course assignments or homework” and “couldn’t offer help if the students encountered difficulties to solve questions in their learning” because of the parents own lack of education. On the contrary, the participants reported that their higher SES counterparts have advantages in those two discussed aspects. One typical comment from a participant could prove the above:

> If I must name barriers caused by my family’s SES, I may say I had less resources because my parents couldn't afford things like tutoring or fancy test preparation textbooks and, of course, there was no way that my parents could help me to be admitted to a good primary school or middle school. My parents have been working extremely hard to feed the whole family, so I was very happy for whatever I got. Also, I think rich kids’ parents may help them with homework or course projects and stuff, but my parents couldn’t, not only because they didn't have the time, but also they were not academically capable to do so. But none of those barriers really affected me regarding my school or test performance. I may be a little of a social outcast, but while all of my richer friends took those advantages for granted, I never thought these things got into my way to academic success. However, I do think the lack of family support and resources are a very common phenomena in low SES student groups, and many friends of mine who come from low SES families were struggling in school because of these reasons. Most of my classmates from poor families in middle schools didn’t go to college, not even to a college with low ranking, because of their low NCEE scores. Admittedly, not all the low SES students were lucky enough like me who could join the Hongzhi program and receive good education to offset those barriers...

Finally, the last subtheme in family factors is gender preference which indicated that the female students sometimes had less priority in receiving education opportunities. This was not commonly reported by the participants, as there were only two females among them, but both explicitly addressed this issue in the interviews. In spite of the small sampling pool, the author wanted to include this finding in the results, because it

matters to social justice and educational equity in a larger social spectrum. The phenomena of gender preference in education were thoroughly delineated by the following two participants. The first female student reported that:

> I always wanted to go to school, pass the NCEE, and then go to college. But, I have a younger cousin in my father's side of the family, and my grandparents always hoped that he could go to school instead of me, because my family could only afford for one kid to go to high school. And, as I am a girl and traditional Chinese families place high priority on boys, I nearly gave up on school in ninth grade, because I thought I couldn't go to high school. But the Hongzhi program saved me, and when Cohen High's principal found me in my middle school after my advisor and middle school principal recommended me, I knew I finally have a chance to pursue my college dream.

The second participant said:

> Girls in my hometown normally don't go to college or even go to high school. My grandparents thought I should consider go to Canton Province (Guangdong Province) and find a job after ninth grade, as some of the other girls did in my town did. All the girls came back home during the Spring Festival holiday wearing nice clothes and bringing back nice things for their families. I cannot say I didn't think of this option, but unlike other parents, mine insisted that I should go to high school. My grandparents however, disagreed and resented the decision of my parents. I'm really thankful for my parents' support.

Individual Factors. At the individual level, participants reported a number of challenges in their high school lives that compromised their academic performance and stressed the importance of overcoming those challenges in order to achieve high scores on the NCEE. The author analyzed the participants' comments on the different individual challenges and summarized them into the following four subthemes: (1) distractions, (2) lack of communication skills at school, (3) learning stress, and (4) test anxiety. The first two subthemes, "distractions" and "lack of communication skills at school," focused on the participants' transitional phase from middle school to high school. Eight participants

struggled to adapt to the new life and academic environment in high school, and this group of participants unanimously stressed the importance to overcome these challenges in order to obtain high scores on the NCEE. For instance, in the distractions category, male participants frequently reported, "I became addicted to playing video games when I started high school, because I have never gotten the chance to play before," or "My classmates from my hometown invited me to play video games with them and I got distracted from school for a while." Female participants, on the other hand, were distracted by the fancy clothes and accessories that other higher SES students had in school. This was expressed in statements such as "I found myself sometimes dreaming of wearing famous brand-name clothes to class" or "the Hongzhi program offered me a generous stipend monthly and I saved my stipend to buy a beautiful ring." Fortunately, all the participants who reported those distractions eventually recognized the issues by themselves or with the assistance of their advisors and overcame the problem. One male participant claimed:

> My test scores dropped significantly in the mid-term exam of my first semester, and I realized that I had been spending too much time playing video games after school. It [playing video games] was time consuming and wasted my living stipend. My advisor also noted the problem, and he communicated with me about this issue. I realized how irresponsible my behavior had been, so I quit my habit of playing games and focused on my study and test prep. I cannot imagine how bad my NCEE score would have been if I would have played video games for my three years in high school.

In addition, a female participant told the author:

> I was so into the fancy outfits that my richer classmates wore. I remember I bought many fashion magazines in my first semester and tried to figure out how to save money to buy fancy clothes. I mean, I think it is right to try to look beautiful, but I went too far as in order to buy clothes. I saved my stipend by only having two meals a day. My test performance was very, very bad at that time. I

> know some of the girls from Hongzhi also had this problem, so when my advisor found out this problem, she was furious and warned us that if we did not take advantage of the good education available, we could be replaced by other high achievers who were not selected by Hongzhi at the beginning. I was so scared and also felt ashamed of my attitude, so I tossed all my fashion magazines and made a promise to myself that I would not pursue those things until I'm financially independent. And my test scores went up again.

Aside from the challenge of distractions, participants in the study also expressed that they lacked communication skills at school in the course of the first two terms at Hongzhi. Thirteen participants told the author that they felt shy to talk to their teachers, felt embarrassed to ask questions, or felt embarrassed to admit that the curriculum content was too hard for them to follow. The challenge of lacking communication skills mainly centered on the subject of English. As one participant stated:

> High school English became very hard for me because my teacher expected me to speak and write well. My vocabulary was limited, so I couldn't contribute too much either speaking or writing. What was worse is that I was reluctant to seek help from my teacher, because I felt embarrassed to do that. I was always the best student in middle school, but then I encountered a seemingly unsolvable problem. Plus, those times when we talked to our English teacher after class, she still expected us to use English for communication. That scared me away.

To solve this challenge, participants gave credit to their course teachers and cohort advisor, because they motivated the students to improve their performance in class and created a welcoming environment during office hours to help participants after class. For instance, a participant praised his high school educators for helping his academic success by saying:

> I was good at math and natural science subjects, but I was pretty bad with Chinese and English… and I didn't communicate with my teachers about my problem. Especially in English, my pronunciation was terrible. I remember once some classmates from other cohorts laughed at me when I was reading out-loud in the hall. I was worried that my teachers may think less of me, so I tried to avoid

> engaging in my class or talking with my teachers after class. But my English teacher and my cohort advisor noticed my problem, and they came to me and talked to me about my English learning. My English teacher required me to answer her questions in class at least twice each class, and I started attending office hours for extra tutoring once a week. We kept the arrangement for two semesters, and my test scores in English improved a lot. Thanks to my teacher's mentoring, finally I also received a good score for my English on the NCEE.

Finally, the last subtheme regarding individual challenges focused on learning stress and test anxiety in high school. Fourteen participants reported that the pressure of high performance in class and on tests caused them to feel stressed and burdened them during their educational process in high school. They explained that, to try to combat the learning stress they felt about not being able to achieve a high performance, they allowed themselves little or no leisure time activities. The learning stress and lack of relaxation triggered a vicious cycle for them. Eventually, those factors cumulatively caused test anxiety and compromised their test scores. As one participant explained:

> I didn't want to waste any time so I used all my time to study, but this brought on the side effect of feeling burn out. Therefore, my learning was relative slow, because I barely rested enough. At night, when I finally went to bed, my mind was racing and I couldn't fall to sleep, and I often dreamed that I had failed the NCEE and that everyone felt disappointed at me. This also compromised my test performance sometimes, because I wanted so much to do well that I focused on the test outcomes instead of the test process. For example, some questions that I failed to answer on a test sometimes were questions that would have been very easy for me to answer if they were just part of a homework or course assignment.

This was not an isolated case. As mentioned, based on the interview comments, learning stress and test anxiety were expressed by 14 individuals out of the 18 participants. Participants generally reported, "I stayed up late for learning extra materials, and I felt tired most days;" "I worked in a 24/7 mode. I wanted to stop and have a break but I could not stop my mind;" "I lost sleep because I worried that I could not get a good

score on my tests;" and "I have tremendous pressure about the tests, because I couldn't afford to fail my parents and my teachers." The participants explained that their teachers helped them and taught them how to cope and avoid stress and anxiety. Their comments included the following: "My cohort advisor offered me a lot of help in how to deal with my negative attitudes;" "My teacher mentored me in how to handle pressure;" and "I didn't want to make my parents worried, so I chose to talk to my advisor. My advisor comforted me and patiently guided me throughout my whole high school. I must thank him for contributing to my high NCEE scores." Another participant's comment connected their teachers' help to their academic success:

> My math teacher noticed my problem, because she caught me falling to sleep several times in her class. So we talked about the situation. She told me that feeling stressed about work shows that people take their work seriously, and this could be good and could motivate them to perform better at work. But too much pressure is definitely not necessary. She told me to make a very detailed plan for my work and stick to the plan. So, if I finished my planned work on schedule, I shouldn't jump into more work. And, if I would finish my work beforehand, I should reward myself by having a good break and letting my mind rest a little. I must say the planning tip from my math teacher was very useful to relieve my anxiety that I wasn't working hard enough. I cannot imagine what would have happened if I would have kept on pushing my brain excessively, as I had been doing before. What my NCEE score would have been like!

Summary

In order to help readers place themselves in the context of the study, this chapter opened with a brief description of the two selected high schools for the study, both located in Chongqing, China. Then, the participants' background information related to their NCEE scores and college rankings was presented. In addition, two archetypal interviews of the participants were introduced to help readers build a connection with the participants' lives. Finally, all the transcribed interviews were reported in the form of identified themes that directly address the research question.

The findings from this inquiry reflect two major themes: (1) supportive factors to low SES students, who have received high NCEE scores and have attained academic success, and (2) challenges encountered on the NCEE and academic success faced by the same group of students. Embedded within both of the themes, there were three sub-themes that focused on the influences of school, family, and the individual on low SES students' education processes and outcomes. To help the readers construe the findings and to improve trustworthiness, extensive quotes are presented to support the two major themes and all the sub-themes. Based on the findings of this inquiry, discussions regarding implications for Chinese educational practices and supportive policies to increase the academic opportunities and success of low SES students will be articulated in the next chapter.

CHAPTER V

DISCUSSION

This chapter opens with identified specific patterns in the experiences of the low SES students who participated in this study related to challenges they encountered, as well as distinctive patterns of the factors that helped them to overcome some of the disadvantages they identified and attain high scores in the NCEE even when compared to students of high SES. The participants described the disadvantages as well as their successful academic experiences which revealed definite patterns in their individual actions and attitudes, those of the members of their families, and those of their teachers and advisors. These patterns open a path and possible methods and advice to replicate their successful experiences at larger scales and to extend those benefits to a larger number of low SES students and families.

This study collected qualitative data to delve into the research question. The author chose to interview high achieving students from a low SES background to identify any particular challenges related to their SES experienced in their education, with a focus on their high school years, and the factors that helped them obtain academic success on the NCEE. Some of the findings are consistent to previous research on low SES students and their academic attainment, as the most frequently identified challenges discussed relate directly back to their families' low SES (Jeynes, 2007; Perry & McConney, 2010; Stewart, 2008; Wang et al., 2014).

One fundamental way in which this study differs from previous research is that, while the latter was mostly based on why low SES students fail in their educational paths and what are the causes for that failure, this study aims to find out why low SES students have succeeded in their academic paths. Specifically, in identifying the barriers they have faced, but equally important, how they were able to overcome those disadvantages in order to excel in education and to achieve high NCEE scores. Their high scores eventually opened the door for them to proceed with their education in Chinese Key Universities, with 13 out of 18 participants in the study, all from the Hongzhi Program, being admitted to universities that rank among the 12 best universities in China.

The study aims to offer suggestions to reproduce and enlarge the phenomenon at the policy and building levels. Obviously, if the resources were unlimited, a possible suggestion could be to replicate the kind of Hongzhi program the participants joined on a mammoth scale. However, even if such an investment were possible, the study reveals that some key factors for the success of the participants were present during the participants' pre-high school trajectories and before they have received any significant financial and educational benefits through the Hongzhi program. Evidently, those key pre-high school factors or characteristics about the participants and their situation led to them being chosen for the Hongzhi program.

The chapter will first briefly summarize the challenges that were documented in this study and compare them with the findings from existing research. Then, the analysis of the contributing factors helping the participants to achieve educational success and high NCEE scores will be presented. Finally, based on the findings from this study, the

author will discuss implications for Chinese educational leadership and policy making, as well as recommendations, for future practice.

Analysis of Challenges in Low SES Students' Education

As presented in the findings, low SES students in this study encountered identifiable challenges in their education in three main aspects—school, family, and individual. Throughout the interviews and discussions of these three aspects, the participants overtly addressed that they felt that the major disadvantage they faced was the low quality schooling the experienced before high school. The experience before high school directly hindered their performance in high school and the NCEE scores.

Challenges at School

The low school quality referred by the participants was characterized by the insufficient qualifications of their former teachers, the academic facilities available, and the inadequacy of the textbooks and curriculums utilized. This echoed some of the findings from existing research that the current Chinese educational budget and its mode of allocation of resources does not meet the needs of educational development, especially in western rural and suburban areas (Lv, 2007; Gustafsson, Li, & Sicular, 2008; Zhang et al., 2015). Previous research points out that this is the case even for the phase of compulsory education (P-9) in which the Chinese education system fails to secure equal educational resources and opportunities pertaining to teachers, facilities, textbooks, and other educational resources (Qi & Wu, 2016; Wong et al., 2015; Zhang, 2012).

All the participants in this study received their education in either suburban or rural areas before they were accepted into the Hongzhi high school program. Most participants reported that, although they have reached competitive levels on the sciences,

they have failed to reach the necessary level of preparation for high school English regarding to vocabulary, listening, and speaking skills, as well as lacked opportunities to do lab work and practice in the sciences. This could indicate the need for policy makers to strengthen the language education in rural and suburban school, as the English part of the test amounts to 20% of the total score of the NCEE (150 out of 750). In addition, before high school, participants lacked the necessary facilities to help them practice English and their English curriculum and textbooks appeared to be inferior to the those that their urban counterparts used. This could indicate the need for the investment of greater resources regarding English language and science education in non-urban areas (Qi & Wu, 2016; Wong et al., 2015; Zhang et al., 2015). An unbalanced distribution of educational resources caused by the difference in SES among regions plays an important role in the students' educational opportunities (Herman, et al., 2012; Wang et al., 2014).

Comments from the participants brought out that language instruction is one of the areas where students from higher SES and who live in urban areas have clear advantages over low SES students. As it was mentioned, it is noteworthy that although the participants of the study came from suburban and rural low SES schools, they still have managed to achieve scores in the natural sciences during their pre-high school education high enough to be admitted to the Hongzhi program. Subsequently, they were able to surpass NCEE national Key scores, even while competing with urban and higher SES students. However, most of the students reported that their English scores were the lowest among all the tested subjects on the NCEE.

Family Related Challenges

As to family factors, none of the participants explicitly addressed any challenges caused by their parents. However, in contrast, all the students credited their parents with a big part of the participants' success. There were comments from participants who stated that they had to help their families with different types of chores. The main disadvantage referred to was that those duties were time-consuming, meaning that the participants had less time available for their studies than their higher SES counterparts. Participants suggested that it is common that low SES students are responsible for and are assigned time-consuming family responsibilities, although none of the participants held that those household responsibilities compromised their school performance. The author believes that, although the added family responsibilities add to the challenges faced by low SES students, the practice could actually have been a helpful factor. This is because the practice could have provided a strong connection to the family, plus and most importantly, a periodic reality check and reminder of the clear reasons why the student should do her or his best to succeed in education. In other words, having to be involved in helping disadvantaged family members and siblings or to devote time and attention to their families, although time-consuming, character-wise, and determination-wise, could have been a strengthening factor. Albeit, in high school, as all the participants had financial support from the Hongzhi program and they did not impose on their families an unbearable financial burden, perhaps they were expected to contribute less with helping family members and in the family work-load than perhaps most low SES students may have to help. However, among low SES families at large, the financial burden of the family and the burdens assigned to many students eventually lead many of them to them

being deprived of schooling and to illegally becoming underage laborers (Gu, 2007; Zhang et al., 2015).

Additionally, some participants reported that family mobility has impacted their school performance which has been identified by previous research (Luo, 2009; Yamamoto et al., 2016). The major influence of family mobility is that students have to adapt to different school settings, classroom cultures, and teaching methods (Zhang et al., 2015). A more extreme consequence is that, in many cases, children of migrant workers cannot enroll in schools in the new areas for different reasons or miss terms as the timing and process of resettling and finding a new school hinders the process.

Previous studies indicated that high SES parents are often able to provide quality early training and teaching, to control their children's developmental factors, and to provide information, intellectual stimuli, and a family environment that prepares their children better for their education (Jeynes, 2007; Lauen & Gaddis, 2013; Perry & McConney, 2010; Stewart, 2008). Similarly, wealthy families can invest family' resources to offer students private tutoring (Bray & Lykins, 2012; Tsang et al., 2010; Wong et al., 2015) or advantageous school-selection (Wang et al., 2014). In contrast, lower SES students often lack the rich opportunities and family environment for intellectual stimulation (Lauen & Gaddis; Jeynes; Perry & McConney; Stewart). In addition, children from low SES families may experience comparative malnutrition in addition to the poor educational support at home. However, in this study, some of these challenges seemed to have had a reduced impact on the participants' education, as none of the participants believed that the lack of educational resources and lack of academic support from their parents significantly influenced their academic attainment and NCEE

scores. However, the participants indicated that the two challenges commonly were experienced by low SES students in general and had a greater impact on many of their low SES peers' education attainment and test scores than on their own. This perhaps could be attributed to the fact that, in the participants' case, the impact on them was minimized or offset by their families' emotional support and encouragement.

Finally, challenges identified in family factors include a subtheme focused on gender preference. The two female participants among the 18 students claimed that they faced discrimination for educational opportunity from within their families, in particular from their grandparents or from an older generation. It would be wrong to generalize this challenge among low SES students in China, because the focus of this study was on low SES students in general and was not intended to compare gender differences. However, many scholars have suggested that gender discrimination is a lasting issue in Chinese society (Foley, Ngo, Loi, & Zheng, 2015; Leutner, Zang, & European Association of Taiwan Studies, 2014). The influence of gender on low SES students' education opportunity and academic success needs scrutiny through future research, perhaps along the lines of the influence of families' traditional views on education.

Issues at the Individual Level

At the individual level, some participants reported that they were distracted from focusing on their studies in their transitional phase in high school. A number of male participants suggested that they became addicted to playing video games, while female participants were obsessed with upgrading their looks and social standing by wearing more expensive clothing and jewelry. Both of the distractions that participants reported were caused by the changes in their living and study environment. The participants had

less exposure to those than what higher SES peer commonly have in the environment that they grew up, for instance, video games, fancy attire, or makeup. Hence, when low SES participants moved to higher SES urban high schools, the new environment and peer pressure had a negative effect on the participants' school life and triggered challenges in their learning and academic performance. This finding is consistent with previous studies that peer pressure could discourage low SES students' intrinsic motivation and desire for learning (Miller & Taylor, 2012; Stewart, 2008).

In addition to the challenges of distractions caused by peer pressure and the new higher SES environment, the author noted the learning stress and test anxiety that largely existed and plagued the participants during their high school years. In some cases, the more the participants were motivated and challenged to succeed academically, the more anxiety they had experienced in their study. Although many students from all levels of SES feel anxiety about whether they can reach their educational goals and succeed in key tests, perhaps low SES students preparing for the NCEE tend to feel the pressure more than other students as their performance would have such impact on whether they can fulfill parental expectations of upgrading the whole of the family's SES. In other words, the bigger issues at stake depending on their academic success may cause more test anxiety for low SES students. In addition, the families of higher SES students' may already have means to take care of their families and other resources available in case their child fails to achieve high enough scores in the NCEE, such as the financial resources to send the student to study abroad or go to a good private college. Obviously, low SES don't have those options, and the NCEE for them is their last chance to help upgrade their families' SES, via the education path or otherwise. It has been claimed that

the burden of the ambition for material affluence and to obtain prestige for their own families through education is the major source of mental health problems among low SES students in China (Chen, 2012; Herman, et al., 2012; Zhang et al., 2011). Although all the participants in this study believed that they successfully overcame this challenge with the assistance of their high school educators, findings from the study demonstrate that learning stress and test anxiety can produce obstacles in the learning process and may sabotage low SES students' education outcomes in general.

Finally, participants reported that their communication skills in the early stages of high school were poor. This challenge may have been exacerbated by their previous suburban or rural school environments which were different than the one at prominent schools like Cohen and Vogel high. Participants suggested that their pre-high school education followed the model of lecturing which mainly mandated students to passively remember and receive learning contents in the classroom. In contrast, schools like Cohen and Vogel High have drastically different classroom settings and learning environments. Most participants reported that their high school "teachers expected" the students to engage in classroom activities and after-class follow-up communication. However, the participants were reluctant to seek help and to interact in general with their course teachers as they were not used to doing that and because they had uncertainty as to how to take part in teacher-student communications in the new school environment. The challenge of lacking communication skills in school has not been discussed by other existing studies, so this finding merits additional research for further analysis.

Factors Supporting Low SES Students' Educational Success and High National College Entrance Exam Scores

In contrast to most previous research which mainly focused on why low SES failed in education, this qualitative study focused on low SES students who have achieved academic success in high schools and have received high scores on the NCEE. The study is based on the participants' own experiences, as told by their own accounts, as an aid to explore the phenomena. By studying this group of successful individual students who came from low SES families and their stories, the author aims to propose possible changes and reform in educational practice to better support this relatively large sub-group in China.

Based on the existing literature, four of the main determining factors having an impact on low SES students' education are as follows: their teachers' qualifications (Lu, 2015; Lv, 2007; Zhang, 2014), peer pressure (Kurz et al., 2015), their parents' engagement in their academic efforts (Wang et al., 2015), and the students' individual motivation (Thoron & Myers, 2011). According to those prior studies, in most of cases, low SES students who struggle academically lack the proper support from teachers, parents, and peers. In other words, low achieving low SES students normally have poorly qualified teachers at school, receive less parental support at home, or experience negative peer pressure in their personal life and lack of personal motivation. At first glance, the findings of this study echo the existing literature. However, the findings go deeper than that, revealing a more complex reality and picture than what it was suggested previously, the internal dynamics of which this study helps to define more clearly. For example, while the participants addressed all the mentioned factors discussed above, in almost all

the cases, these factors were described from the positive point of view, meaning that they thought those factors helped them to succeed and were not presented as negative influences in their education paths.

In addition, while all of the students expressed that their pre-high schooling exhibited many of the low SES well-known disadvantages reported by previous research and that their parents embodied many of the low SES barriers and disadvantages at home, all of the students were able to attain significant and sufficient success during the pre-high school period. In fact, their pre-high school success allowed them to be chosen from among many low SES students and to be admitted to the Hongzhi program. What is more, with the added support of the program, they went on to obtain very high scores at the NCEE while competing with millions of students of higher SES than theirs across the Chinese nation. In other words, their success was such that, at the NCEE, they were not competing for scores just with other low SES students but with the entire population of senior high school students taking the test across China, without any difference of SES considered.

This qualitative study, based on the patterns of the participants' experiences and comments, offers a deeper view into the factors that helped them to succeed. To begin with, all the participants profusely thanked and credited their parents for their success, in spite of recognizing their families' obvious low SES limitations, disadvantages, and lack of resources. In addition, although the participants faulted their pre-high school education for their deficits in their learning or skills, mainly in the English language, and the lack of standard quality facilities, none of them faulted most of their former teachers for adding to their academic challenges. In fact, their omission of their prior teachers as adding to

their academic challenges presents the possibility that in fact their low SES teachers, in their low SES schools and environments, must have done some things right in preparing and helping them to succeed.

Based on the findings of the study, once low SES attained success in pre-high education and were offered the added support of the Hongzhi program, they could attain even greater success on the NCEE and conquer the impacts of the low SES factors, as mentioned earlier. The participants recognized this, as they overtly and lavishly praised and credited their good teachers from the Hongzhi program, along with their parents' engagement, the positive peer pressure, and strong self motivation as being the pillars of their high school education success and what eventually helped them to achieve their outstanding NCEE performances.

To sum up, the factors presented by the students can be divided in the three well known set of factors established by previous research and literature. The first group of factors dealt with the support from school and included supportive policy, qualified teachers that tried to address the common obstacles faced by low SES students openly, and positive peer pressure which the participants recognized or acknowledged mainly during their high school education. The second group of factors centered on the support from home and included parental engagement with school, parents' effort at home, parents as role models, and the willingness of the family to offer financial support towards their education, however limited or meager that was. As mentioned, most of those beneficial factors at home are assumed to have been present in the participants' lives even during their pre-high school years and experience, based on their interview responses. The last group of factors focused on the effort of the individual participants

which involved diligence, motivation, confidence, and hope. The participants' answers provide strong evidence that those qualities or virtues were being groomed and developing in their lives for a long time before they reached high school.

The author's perception is that those external factors here referred as the first and second groups of factors were what influenced the development of the third group of factors. The third group being the participants' internal factors and personal motivation, such as the individual efforts they exerted, which in some of the cases, appeared to be the dominant and decisive force in their path to success. For example, even during the participants' high school years, with all the support from the interventional Hongzhi program and the emotional support of their parents, when they experienced difficulties such as the changes on the learning and living environments, they repeatedly stressed that they "had to," "must," and "should" conquer whatever difficulties and challenges they may face in high school. The goal for doing so was to achieve high scores on the NCEE and thus attend prestigious higher education institutions. The author believes that it was the existing possibility of that "hope for the future," nurtured and supported by teachers and parents alike, plus the realization that the possibility "only to achieve high scores on NCEE" was within participants' reach that drove them to succeed in their education. In other words, the external factors (including teachers, parents and positive peer pressure) influencing the participants facilitated the individuals' performance in education and eventually assisted participants to achieve high scores on the NCEE by compelling the participants to do everything possible to succeed. Hence, the author considers the external factors from school and home as the catalyst that triggered the participants' internal

factors which translated to the individuals' efforts which contributed significantly to their academic success.

Low Socioeconomic Status Student Educational Attainment Model

To interpret the phenomenon of how low SES achieved academic success in high school and obtained high scores on the NCEE, the author presents Figure. 2: Low SES Student Educational Attainment Model (LSSEAM) to portray all the critical factors contributing to the successful educational outcomes. As discussed earlier, the successful examples from the participants in the study indicate that the critical elements for academic success in high schools and NCEE can be categorized into three aspects: (1) Family factors, (2) School factors, and (3) Individual factors. Based on the experiences of the participants, each of the categories has close connections and contributes to the participants' educational outcomes in a collaborative pattern. For instance, the connection between family and school involves parental engagement in their children' education (Wang et al., 2015), welcoming school environment for low SES families (Mediratta et al., 2009), and parent-teacher meetings (Mediratta et al.). Meanwhile, the connection between low SES students and school includes intervention programs and responsible and dedicated teachers. Those two preliminary factors translate into the third one, the students' motivation. The LSSEAM illustrates all the details and information that explain the inquired research question.

In analyzing the comments of the participants, the author found that the tandem "Home + School" support would assist students with possible successful education trajectories. In addition, the author recognizes that science teaching, even in low SES environments, is basically sound in Chinese education. However, this is not the case for

English teaching. In other words, in spite of the participants mentioning the deficiencies in their pre-high school education, the author believes that they had reasonably qualified teachers in the sciences, and they have received support and solid instruction which eventually led to the participants' acceptance into the Hongzhi program. Hence, the author asserts that the "Home + School" tandem of support that the participants experienced was the factor that enforced the participants' personal determination to succeed in their education. In the formula, the "1" equals parental emotional and material support (however limited but offered wholeheartedly) including role models and hope on their children's success. "2" represents school support providing comparatively basic but solid education. Finally, "3" stands for the participants' resolve and determination to make any efforts possible to succeed in their education. To demonstrate all the critical factors, the following figure illustrates the proposed LSSEAM.

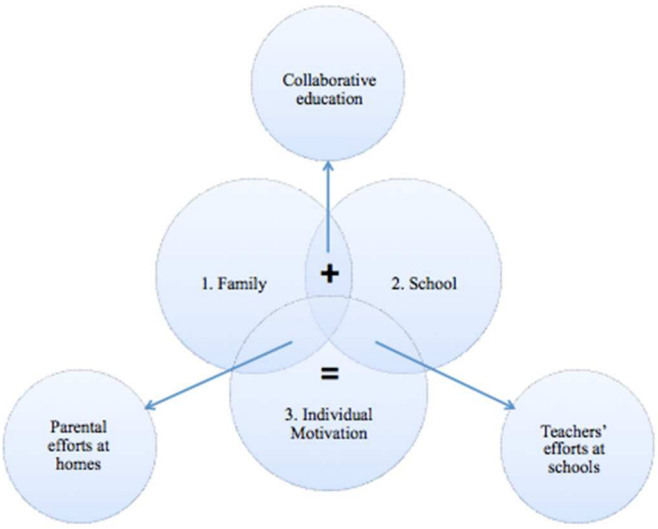

Figure 2. Low SES Student Educational Attainment Model.

Based on the interviews, the participants reported, unwittingly, the three elements that were present in their education in high school and eventually assisted their performance on the NCEE. Revealed from the findings of the study is that family and

school efforts enforced the individual motivations to succeed academically because participants repeated mentioned that they wanted to work hard and perform well in schools in order to meet their parents and teachers' expectations. Evidently, low SES students need the critical support from schools and their families for their acadmic success, while self motivation is equally important to secure a pathway conducive to desired outcomes in education. Therefore, the LSSEAM succinctly express what low SES students need to succeed in education and achieve high NCEE scores, and provides future possible quantitative research a framework to test the validity and reliability of the model in order to address low SES related issues in Chinese education.

Implications for Chinese Educational Leadership

Understandably, the outstanding achievement of the participants in the study is not the case of the majority of low SES students in China but of a minority on the NCEE. However, the phenomenon of high achieving students with low SES is worthy of being replicated at larger scales as it has the potential to benefit Chinese society at large. The socioeconomic predicament can lower students' engagement and motivation in school and make it more difficult for them to improve academically (Zhang et al., 2014). Hence, low SES students may have a high risk of falling into the lower tracks stereotyped as academically inferior which could negatively impact students' education outcomes (Spencer et al., 1999; Steele, 1999; Steele & Aronson, 1995). This study explored the factors that inspired low SES students to strive for academic success and achieve high scores on the NCEE. These findings indicate that it was the tandem of school and family factors that triggered and motivated the individual efforts of the participants which finally translated into successful school trajectories. Based on the findings, the author offers

recommendations for policymakers and school leaders to design supporting strategies to help current low SES students' to succeed in education, even during their pre-high schools years, and to eventually help them to succeed on the NCEE. The following sections will discuss implications for Chinese policy makers and building-level leaders separately.

Specifically, the author chose Chongqing, a middle-income city with the fourth largest urban population in China (National Bureau of Statistics of China, 2017c), as the location in which the study was conducted. Based on information released by the two schools and the subsequent study, the author may conclude that the Hongzhi program is a successful program, because all the students who took part on the program had a competitive NCEE score and presently attend college, many at top ranked universities in China. However, the current population of Chongqing is 15 million, but the Hongzhi program only admits 100 new students each year. The World Bank (2016) reported that the Chinese poverty rate is 11.2%. Utilizing this data to calculate the total poverty population of Chongqing, assuming that the data is correct and applying it uniformly to every area of the country and to rural and urban areas alike, there would be more than one million people living in poverty in Chongqing city. Evidently, the direct impact of the Hongzhi program is limited and tenuous. However, the findings of the study based on the effectiveness of the Hongzhi program are not limited, insomuch that applying those findings could have a much greater impact to low SES students throughout Chongqing and China at large. The recommendations of the study are based on this assumption.

Policy Level Recommendations

The first recommendation for Chinese policymakers is to expand the quantity of the Hongzhi program. Based on this study, Hongzhi program covers the high school tuition and offer living stipend to the participants. The participants told the author that high school tuition and fee were generally less than $ 200 USD for very semester and living stipend for each Hongzhi cohort member was around $ 40 USD. Based on the participants' comments, the cost of each of the students in the Hongzhi program was around $ 1,000 USD for the entire high school years. Considering the effectiveness of the program and its relatively low costs, policymakers could consider implementing more Hongzhi programs in high-achieving urban high schools in order to impact more low SES students and families.

In addition, the author calls for increasing the salary range for the teachers who teach in suburban and rural schools. All the participants lived in suburban and rural areas before high school, which is congruent with the fact that the majority of the poverty population in China live in or originate from suburban and rural areas (Angelillo, 2014; Herman et al., 2012; Wong et al., 2015). Since substandard school education is a primary challenge reported by low SES students, policymakers need to consider measures to first maintain and then improve school quality in the rural and suburban areas by increasing the educational budgets for suburban and rural areas schools. Especially, by increasing salaries to existing suburban and rural teachers in order to diminish the perceived present exodus of qualified teachers from those low SES areas to more affluent urban areas. This exodus of qualified teachers has been established by existing literature that demonstrated that this problem is caused by the educators' salary gap stemming from imbalanced

development (Qi & Wu, 2016; Wong et al., 2015; Zhang et al., 2015). Specifically, the author would recommend that Chinese policymakers could implement supportive policies that ensure that educators' salaries in suburban and rural areas are equal, or comparatively equal, to their urban counterparts in order for those underdeveloped areas to retain and eventually attract qualified teachers with the aim to have a stable qualified teacher retention rate for suburban and rural schools. If the school quality in suburban and rural China can be improved significantly by having more qualified teachers, the large proportion of low SES students who live in these underdeveloped areas could benefit from the change.

This policy could be supplemented by requiring or actively encouraging newly graduated teachers from key universities to devote one year of teaching in low SES areas and schools while receiving a comparatively reasonable salary and acquiring needed experience, thus sharing the fruits of their education with low SES students and families. In addition, policies should be implemented requiring that students in master studies in education-related fields spend a year working in such schools and by requiring that teachers who have received or receive state-sponsored scholarships in education devote at least one year to the development of education in such low SES areas. Meanwhile, all those students and teachers contributing through such programs could also be rewarded or promoted by receiving academic credits or public recognition for their efforts. Additionally, policymakers could promote one-term teacher exchange programs for teachers from higher SES schools and areas to teach in low SES schools, based on the successful practices and experience of programs similar to the Hongzhi, which would further benefit high poverty schools. Hence, high achieving urban schools would be

sending experienced educators to low SES schools to teach courses which could help and further strengthen the teaching of low SES teachers by sharing their experiences and knowledge. Obviously, those schools and teachers should be rewarded, not only financially, but also by receiving credits towards future promotions, rewards, or desired benefits.

Furthermore, to improve the quality of teaching in high poverty schools, policymakers could promote teacher exchange programs through which high poverty schools could send already successful or promising young teachers to receive hands-on training in high achieving schools. This exchange should be done under the condition that such teachers would return to their original schools and areas for an agreed time-period, or permanently if they so wish, to share with their schools and communities their newly acquired experience and knowledge. Correspondingly, high achieving schools in urban areas could encourage their distinguished teachers to be exchanged to low SES schools and help these schools to train educators and build programs. With the assistance of the teacher exchange program, high achieving schools in urban areas are able to share the wealth of experience and resources in how to help the students succeed in the NCEE and in education at large. Through the above suggested measures, the teaching quality in low SES areas and schools can be improved and the overall school quality could be advanced. Eventually, students would be able to receive better education in the high poverty schools with the improvement of teacher qualifications.

Similarly, students' exchange programs could be introduced. Previous research suggested, "initial low achievers' academic performances can be significantly improved when integrated with high performing students at the school level" (Zhang et al., 2014, p.

1). Policymakers could consider make student exchange between high achieving school and low SES school more easily. For instance, if low SES students from suburban and rural areas who could study in a high achieving school for a short term, the individual students could benefit from working with high achieving students and from the high achieving school environment. In addition, upon returning, their classmates in the low SES schools could benefit from the experiences of the exchange students which could help in fomenting positive peer pressure among classmates.

The possible different methods mentioned above could be an effective method to encourage successful suburban or rural low SES students to utilize education as a means of increasing their SES, even without being admitted to such programs as the Hongzhi, which would be more difficult and costly to duplicate on a large scale. The methods could have potentially a "mini-Hongzhi effect" but of a much wider and greater scope for already successful low SES suburban and rural teachers and students and their families. Those initiatives, introduced by policymakers, which should be based on the experiences and successes of such Hongzhi programs, could have a positive impact in increasing low SES learning motivation and positive outlook toward completing their high school education and eventually attempting and succeeding on the NCEE.

Finally, the author proposes that students who have received or receive scholarships and opportunities, such as attending a Hongzhi or similar program, should be encouraged or even required to share their stories with their communities and explain how former schools experience that contributed to their success and how education benefited their personal life. In this way, they would share the benefits of their state-subsidized education not only with their families but also with their communities. This

could be implemented in such a way that those students who have benefitted from such programs would spend one month during their holidays, helping other low SES students in their former schools and areas and encouraging them to also succeed in education. This policy could help to further strengthening the LSSEAM factors, both by encouraging students to start and finish high school and by even attempting to continue to college via achievement on the NCEE.

Building Level Recommendations

This study found that none of the participants mentioned their school principals at the Hongzhi during the dialogues in the interviews. However, it is fair to assert that the principal's interactions with the Hongzhi students was indirect as they would have not only supported the program but probably would have interacted regularly with the stakeholders of the program, such as the program directors, the class advisors, and the teachers. However, the following proposals are primarily offered to building level administrators in low SES areas and schools, and not to those of higher SES schools and areas.

To begin with, high school principals of low SES schools could get more involved, if they are not already, in promoting parents' engagement with the school as a way to strengthen the family factors in the LSSEAM. Their involvement could focus on creating a welcoming atmosphere for parents at the school and by instructing and encouraging teachers to do likewise. Both principals and all school leaders should be aware and emphasize that the parents' most valuable contributions are not necessarily academically, as that is what the school is there for, but especially in supporting and encouraging their children that they can make it. Parents should be encouraged also that they can and

should support their children and let them know that they (the parents) are willing and ready to do what they can to help the students to succeed. The objective of these emphases would not be to impede or discourage parents from helping their children academically or in any other way, but to reinforce that the parents' emotional support to their children is indispensable, regardless of their intellectual or material resources, and that it could not be replaced by school agents.

Principals should also encourage teachers to make themselves available to the parent, as needed. Principals should promote organizing inclusive activities for parents and for any other siblings the students may have so that those siblings can also brought closer to the circle of the school and of education. In addition, principals should mediate in any issues that teachers and parents, and/or teachers and students cannot solve on their own, especially by offering resources and support that otherwise may not be available to either party. Moreover, principals can help to develop a collaborative school environment where teachers share in the processes of the education that affect them and their students. In order for this to happen, principals would need to make sure that teachers feel comfortable taking part in solving problems and giving open and honest feedback to their principals which the principals should be open to, and in fact, encourage. The teachers encouraged by this development could promote the same relationship with their students and their parents. Additionally, principals can contribute by expanding the level of engagement of the greater low SES community they serve in the activities and greater vision of the school and education. This could include, but should not be limited to, strengthening the communication and cooperation among middle schools in the area to support and expand the rate of middle schools students who enroll in high school and by

sharing with pre-high school institutions their experience and knowledge of how to strengthen the contributing factors in the LSSEAM. Thus, principals can contribute to develop a vision that communicates the belief that all students (and schools) can achieve success and that, further down the line, success can be achieved at the level of the NCEE. In this context, the vision addresses equitable attainments of education in a manner that works to remove students' low SES status as a significant (negative) predictor of achievement and as a means to remove the barriers of low SES students.

Future Research

In the study, the author utilized the collected data to propose the Low SES Student Educational Attainment Model (LSSEAM), which included all the critical factors reported by the participants in their education. The three contributing factors in low SES students' academic attainment include: (1) family factor; (2) school factors; and (3) individual factors. However, the author noticed that as one of the three factors, family factors might be not available for some other students who lost parental presence in their life due to the reason of decease, divorce, or imprisonment. Hence, for the cases of high achieving low SES without family support and involvement, it would worth the future research endeavor to examine the validity of the LSSEAM by factoring out the impact of family factors in students' education and explore how other influential factors were contributing to low SES students' academic success. In addition, in the study, two participants reported that they encountered the gender preference. Although the gravity in the entire participant pool was not significantly large, the author holds that future research would also consider examining if there is any gender difference in terms of academic success among low SES student groups. If there is an achievement gap cross

gender among low SES students, what the factors cause the occurrences of the phenomena and how these found factors impact the low SES students in different genders.

Summary

This chapter opens with the statement that the findings of previous research regarding the challenges faced by low SES students in education are corroborated by the study. Then it is stated that this qualitative study goes further, because it has helped to identify how low SES students have been able to overcome those barriers, namely barriers related to their low SES families and schools, as well as personal attitudes that they have had to overcome, on the way to becoming successful in education and on the NCEE. The study identified definite patterns in the ways the participants overcame those SES related challenges and barriers on the NCEE. Furthermore, the author proposed several ideas and ways to replicate and multiply the factors that helped the participants in this study to overcome some of the mentioned disadvantages to attain high scores on the NCEE, even when competing with large numbers of students of high SES at the national level, to go on to be admitted to key and top Chinese universities.

The findings and proposals are all part of the answers to the research question, which open a path, possible methods, and advice on how to replicate the participants in this study successful experiences on a larger scale and to extend those benefits to a larger number of low SES students, their families, and their communities. Based on the findings, the Low SES Student Educational Attainment Model (LSSEAM) was developed and informed by this model, the author offered a number of recommendations for policymakers and building level leaders aim to strengthen and reproduce.

The findings from this study imply that some of the key factors for the success of the participants were already present during their pre-high school trajectories and before they have received any significant financial and educational benefits through the Hongzhi program. Therefore, the author focused on developing, strengthening, and multiplying those factors, rather than on the aspect of allocating financial resources, which nevertheless would be necessary to implement those proposals. Those financial resources, obviously, lay beyond the scope and purposes of the study. In other words, the author wanted to make ample use of already existing resources that may have not been used so far or are misunderstood, underused, and underestimated.

Finally, the recommendations based on the findings of this study promote the development of a community approach to strengthening education by including schools, educators, families, and students whose combined efforts could benefit each of the stakeholders in a synergistic cycle. The author envisions that the process of helping low SES students to succeed in their education paths could in turn help to develop further the fabric of the local low SES communities. Thus, the process would help in transforming schools into community centers where everybody can take part in the multifaceted teaching process, in learning and in receiving the benefits of educational achievement, each giving and receiving according to their different roles, assets, and contributions, to the overall benefit of Chinese society.

REFERENCE

Angelillo, N. (2014). Vulnerability to poverty in China: A subjective poverty line approach. *Journal of Chinese Economic and Business Studies, 12*(4), 315-331. doi:10.1080/14765284.2014.952512

Anyon, J. (1995). Race, social class, and educational reform in an inner-city school. *Teachers College Record, 97*, 69-94.

Anyon, J., & Greene, K. (2010). Urban school reform, family support, and student achievement. *Reading & Writing Quarterly, 26*(3), 223-236. doi:10.1080/10573561003769608

Auerbach, S. (2007). Visioning parent engagement in urban schools. *Journal of School Leadership, 17*, 699-734.

AVID Center. (2016). Retrieved from http://www.avid.org/excel.ashx

Baird, K. (2012). Class in the classroom: The relationship between school resources and math performance among low socioeconomic status students in 19 rich countries. *Education Economics, 20*(5), 484-509. doi:10.1080/09645292.2010.511848

Baker, S., Smolkowski, K., Katz, R., Fien, H., Seeley, J., Kame'enui, E., & Beck, C. (2008). Reading fluency as a predictor of reading proficiency in low-performing, high-poverty schools. *School Psychology Review, 37*(1), 18-37.

Bankston, C., & Caldas, S. (1998). Race, poverty, family structure, and the inequality of schools. *Sociological Spectrum, 18*(1), 55-76. doi:10.1080/02732173.1998.9982184

Battistich, V., Solomon, D., Kim, D., Watson, M., & Schaps, E. (1995). Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal, 32*(3), 627-658. doi:10.2307/1163326

Bernstein, T. P. (1977). Up to the Mountains and Down to the Villages: The Transfer of Youth from Urban to Rural China. New Haven: Yale University Press.

Bollen, K., Glanville, J. A., & Stecklov, G. (2001). Socioeconomic status and class in studies of fertility and health in developing countries. *Annual Review of Sociology, 27,* 153-185.

Bordua, D. J. (1960). Educational aspirations and parental stress on College. *Social Forces, 38,* 262-269.

Bornstein, M.C., & Bradley, R.H. (Eds.). (2003). *Socioeconomic status, parenting, and child development.* Mahwah, NJ: Lawrence Erlbaum.

Boyd, D., Lankford, H., Loeb, S., Rockoff, J., & Wyckoff, J. (2008). The narrowing gap in new york city teacher qualifications and its implications for student achievement in high□poverty schools. *Journal of Policy Analysis and Management, 27*(4), 793-818. doi:10.1002/pam.20377

Bray, M., & Lykins, C. (2012). Shadow education: Private supplementary tutoring and its implications for policy makers in Asia. Mandaluyong City, Philippines: Asian

Development Bank. Available from: http://www.fe.hku.hk/cerc/Publications/monograph_no_9.htm.

Brooks-Gunn, J., & Duncan, G.J. (1997). The effects of poverty on children. *The future of children, 7(*2), 55-71.

Brown, K. M. (2004). Leadership for social justice and equity: Weaving a transformative framework and pedagogy. *Educational Administration Quarterly, 40*, 79-110.

Bryk, A. S., & Schneider, B. L. (2002). *Trust in schools*. New York, NY: Russell Sage Foundation.

Cai, Y., Liang, B., & Zhou, Y. (2010). The relationship between the pressure of entrance examination, psychological resilience and stress distress in middle school students. *Chinese Journal of Clinical Psychology, 2*, 23-29. (In Chinese)

Caldas, S. J. (1999). Multilevel examination of student, school, and district level effects on academic achievement. *Journal of Educational Research, 93*(2), 91-100.

Cambron-McCabe, N., & McCarthy, M. (2005). Educating school leaders for social justice. *Educational Policy, 19*, 201-222.

Chan, D. W. (1995). Depressive symptoms and coping strategies among Chinese adolescents in Hong Kong. *Journal of Youth and Adolescence, 24,* 267-279.

Chen, H. (2012). Impact of parent's socioeconomic status on perceived parental pressure and test anxiety among Chinese high school students. *International Journal of Psychological Studies, 4*(2), 235. (In Chinese)

Chen, J. (2006). *Research on admission analysis and student evaluation model* (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10611-2006149211.htm

Chen, J.X. (2008). *Research on the correlation between college major and career pathway.* (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10511-2008114911.htm (In Chinese)

Chen, L. & Xia, J. (2015). The Policy Effect of University Enrollment Expansion on Innovation Efficiency: Quantitative Test Based on Quasi-Experiment and Double Difference Model. *Chinese Journal of Population Science, 5,* 12-22. Retrieved from http://www.cnki.com.cn/Article/CJFDTOTAL-ZKRK201505007.htm (In Chinese)

Chen, M. (2007). *Research on the basic education examination* (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10511-2006077787.htm. (In Chinese)

Chen, T. H. (1981). Chinese education since 1949: Academic and revolutionary models (pp. 13-15). New York: Pergamon Press.

Chen, Y. (2015). Mobility: State control and resistance — perspectives on the household registration system and floating population in China (Doctoral dissertation). Retreated from http://0-search.proquest.com.source.unco.edu/docview/1695821221?pq-origsite=summon.

China Education Statistical Yearbook (2014). *China Education Statistical Yearbook 2009-2013.* Ministry of Education, PRC. Beijing: People's Education Press. (In Chinese)

China Statistic Yearbook. (2012). Chinese Education, Science and Technology Statistics. *The National Bureau of Statistic of China Website.* Retrieved from http://www.stats.gov.cn/tjsj/ndsj/2013/indexeh.htm (In Chinese)

Chinese Ministry of Education. (2015, April). Opinions on the implementation of the Education Department of the general high school. *The Chinese Ministry of Education Website.* Retrieved from http://baike.baidu.com/link?url=J6CTf48K1A7hJPIecjhrlWXI79rJq2qDEYJxTbP1huYkq_kYxmjusb4xguTDhp516LUjfdaJZOM-c81XAdh6PxY7QtL32r83Ydo9KVPU7JS#12. (In Chinese)

Chiu, M. M. (2007). Families, economies, cultures, and science achievement in 41 countries: Country-, school-, and student-level analyses. *Journal of Family Psychology, 21*(3), 510-519. doi:10.1037/0893-3200.21.3.510

Chongqing Education Bureau. (2016). Retrieved from http://www.cqjw.gov.cn/search.aspx?searchtype=0&Keyword=%u5B8F%u5FD7%u73ED (In Chinese)

Chu, R., Leonhardt, J. M., & Liu, M. T. (2015). Chinese migrant workers' adoption of urban consumer habits. *Marketing Letters, 26*(1), 57-66. doi:10.1007/s11002-013-9267-9

Chui, X. (2013). *The research on the balanced development of urban and rural education in China* (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10094-1013263929.htm. (In Chinese)

Coladarci, T. (2006). School size, student achievement, and the "power rating" of poverty: Substantive finding or statistical artifact? *Education Policy Analysis Archives, 14*(28), 1.

Cole, M. S., Field, H. S., & Harris, S. G. (2004). Student learning motivation and psychological hardiness: Interactive effects on students' reactions to a

management class. *Academy of Management Learning and Education, 3*(1), 64–85. http://dx.doi.org/10.5465/AMLE.2004.12436819

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, 95-120.

Conger, R., Conger, K., & Martin, M. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family, 72*(3), 685-704. doi:10.1111/j.1741-3737.2010.00725.x

Cooper, C. W. (2009). Educational leaders as cultural workers: Engaging families and school communities through transformative leadership. In S. D. Horsford (Ed.), *New perspectives in educational leadership: Exploring social, political, and community contexts and meaning* (pp. 173-196). New York, NY: Peter Lang.

Creswell, J. W. (1998). Qualitative inquiry and research design: Choosing among five traditions. Thousand Oaks, CA: Sage.

Creswell, J. W. (2005). Educational research: Planning, conducting, and evaluating quantitative and qualitative research (2nd ed.). Upper Saddle River, NJ: Pearson.

Creswell, J. W. (2006). *Qualitative inquiry and research design: Choosing among five approaches* [with CD-ROM]. Second edition SAGE Publications.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory Into Practice* 39, 123-130.

Crotty, M. (1998). The foundations of social research: Meaning and perspective in the research process. Thousand Oaks, CA: Sage.

Crowson, R. L., & Boyd, W. L. (2001). The new role of community development in educational reform. *Peabody Journal of Education, 76*(2), 9-29.

Crystal, D. S., Chen, C., Fuligni, A. J., Stevenson, H. W., Hsu, C., Ko, H., Kitamura, S., & Kimura, S. (1994). Psychological maladjustment and academic achievement: A cross-cultural study of Japanese, Chinese, and American high school students. *Child Development, 65,* 738-753.

Daschmann, E. C., Goetz, T., & Stupnisky, R. H. (2013). Exploring the antecedents of boredom: Do teachers know why students are bored? *Teaching and Teacher Education*, *39*, 22-30. http://dx.doi.org/10.1016/j.tate.2013.11.009

Delgado-Gaitan, C. (2001). *The power of community: Mobilizing for family and schooling*. Lanham, MD: Rowman & Littlefield.

Deng, X. (2009). *History Change of Traditional School Educational Ecosystem In China* (Doctoral dissertation). Retrieved from http://www.wanfangdata.com.cn. (In Chinese)

Deng, Z., & Treiman, D. J. (1997). The impact of the Cultural Revolution on trends in educational attainment in the People's Republic of China. *The American Journal of Sociology, 103*(2), 391-428. doi:10.1086/231212

Denzin, N. K., & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.

Denzin, N. K., & Lincoln, Y. S. (2008). *Collecting and interpreting qualitative materials*. Thousand Oaks, CA: Sage.

Development Planning Bureau under the Ministry of Education of PRC (2005). *Year book of Educational Statistics in China (2004).* Beijing: People's Education Press (In Chinese)

Dika, S. L., & Singh, K. (2002). Applications of social capital in educational literature: A critical synthesis. *Review of Educational Research, 72*, 31-60.

Dixon-Roman, E., Everson, H., & McArdle, J. (2013). Race, poverty and SAT scores: Modeling the influences of family income on black and white high school students' SAT performance. *Teachers College Record, 115*(4), 1.

Ellinger, K., Wright, D. E., & Hirlinger, M. W. (1995). Brains for the bucks? school revenue and student achievement in Oklahoma. *The Social Science Journal, 32*(3), 299-308. doi:10.1016/0362-3319(95)90014-4

Epstein, J. L. (2001). Effects on student achievement of teachers' practices of parent involvement. In J. L. Epstein (Ed.), *School, family, and community partnerships: Preparing educators and improving schools* (pp. 221-235). Boulder, CO: Westview Press.

Epstein, J. L., & Sanders, M. (2006). Prospects for change: Preparing educators for school, family, and community partnerships. *Peabody Journal of Education, 81*(2), 81-120.

Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). *Doing naturalistic inquiry: A guide to methods.* Newbury Park, CA: Sage.

Eun Koh, E., Stauss, K., Coustaut, C., & Forrest, C. (2015). Generational impact of single-parent scholarships: Educational achievement of children in single-parent families. *Journal of Family Issues, 25*, 90-108. doi: 10.1177/0192513X15576963

Evans, A. (2007). School leaders and their sensemaking about race and demographic change. *Educational Administration Quarterly, 43*, 159-188.

Fan, F. A. (2012). The relationship between the socio-economic status of parents and students' academic achievements in social studies. *Research in Education,* (87), 99.

Fan Y., & Wu Z. (2014). A Research Report on Balanced Development of Rural and Urban Education Resource in China. *Educational Research, 11*, 32-44. (In Chinese)

Feng, Z. (2001). National college entrance examination system and the innovation spirit of the Chinese nation. *Weipu, 19,* 26-31. (In Chinese)

Fetler, M. (1989). School dropout rates, academic performance, size, and poverty: Correlates of educational reform. *Educational Evaluation and Policy Analysis, 11*(4), 109.

Foley, S., Ngo, H., Loi, R., & Zheng, X. (2015). Gender, gender identification and perceived gender discrimination: An examination of mediating processes in China. *Equality, Diversity and Inclusion: An International Journal, 34*(8), 650-665. doi:10.1108/EDI-05-2015-0038

Freire, P. (1972). *Cultural action for freedom.* Harmondsworth: Penguin.

Freire, P. (2010). *Pedagogy of the oppressed.* New York: The Continuum International Publishing Group Inc.

Fullan, M. (2001). *The new meaning of educational change*. (3rd ed.). New York, NY: Teachers College Press.

Gold, E., Simon, E., Brown, C., Blanc, S., Pickron-Davis, M., Brown, J., & Navarez- La Torre, A. (2002). *Strong neighborhoods, strong schools: The indicators project*

on education organizing. Chicago, IL: Cross City Campaign for Urban School Reform Research for Action, Inc.

Gu, H. (2007). Education poverty and its consequences: China education predicament of low-income families in transition period (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10173-2008037584.htm (In Chinese)

Gu, M. (2016). The Gaokao: History, Reform, and Rising International Significance of China's National College Entrance Examination. *Research & Advisory Services News*, 1-8.

Guo, S., & Zhao, D. (2011). Vocational education in ancient China. *Blue World, 11,* 71-72. (In Chinese)

Gustafsson, B., Li, S., & Sicular, T. (2008). *Inequality and public policy in china.* Cambridge; New York: Cambridge University Press. (In Chinese)

Hammond, B. (2010). The Crack in the Sorting Machine: What We Should Not Learn from China. *National Association of Independent Schools, 23,* 22-24

Hayhoe, R. (1984). *Contemporary Chinese education* (pp. 23-25). Armonk, N.Y: M.E. Sharpe.

He, Z. (2000). The history of Chinese imperial examination system. *The History Research, 24*(3), 42-55. (In Chinese)

He, Y. & Zhao, L. (2010). An Analysis of the Inadaptability of the Traditionally Mechanism for Training Innovative Talents. *Journal of Beijing Administrative College, 1,* 59-63. doi: 10.3969/j.issn.1008-7621.2010.01.013. (In Chinese)

Heard, H. E. (2007). The family structure trajectory and adolescent school performance: Differential effects by race and ethnicity. *Journal of Family Issues, 28*(3), 319-354. doi:10.1177/0192513X06296307

Henderson, A., & Mapp, K. (2002). A new wave of evidence: The impact of school, family, and community connections on student achievement. Austin, TX: South-west Educational Development Lab.

Henig, J., & Stone, C. (2008). Rethinking school reform: The distractions of dogma and the potential for a new politics of progressive pragmatism. *American Journal of Education, 114*(3), 191-218. doi:10.1086/529500

Herman, K., Bi, Y., Borden, L., & Reinke, W. (2012). Latent classes of psychiatric symptoms among Chinese children living in poverty. *Journal of Child and Family Studies, 21*(3) , 391–402.

Hooks, B. (2010). *Teaching critical thinking: Practical wisdom.* New York & London: Routledge.

Hough, D. L., & Schmitt, V. L. (2011). An ex-post facto examination of relationships among the developmental designs professional development Model/Classroom management approach, school leadership, climate, student achievement, attendance, and behavior in high poverty, middle grades schools. *Middle Grades Research Journal, 6*(3), 163.

Hu, Y., Hung, C., & Ching, G. (2014). Student-faculty interaction: Mediating between student engagement factors and educational outcome gains. *International Journal of Research Studies in Education, 4*(1), 43-53. doi:10.5861/ijrse.2014.800

Huang, G. (2004). Discussion on some problems about the reform of examination and evaluation of basic education. *Course Teaching Method, 24*(5), 87-92. (In Chinese)

Huang, L. (2015). Legal regulation of employment discrimination in colleges and universities. *Law and Economy, 1,* 40-55. (In Chinese)

Huang, F. (2004). Curriculum reform in contemporary China: Seven goals and six strategies. *Journal of Curriculum Studies, 36*(1), 101-115. doi:10.1080/0022027032000047420000174126

Huang, X. (2006). The lack of family education of left behind children in rural areas. *Contemporary Education Forum, 6*, 19-21. doi:10.13694/j.cnki.ddjylt.2006.10.006. (In Chinese)

Huen, W. (1996). Household registration system in the qing dynasty: Precursor to the PRC's hukou system. *China Report, 32*(4), 395-418. doi:10.1177/000944559603200403

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education, 42*(1), 82-110. doi:10.1177/0042085906293818

Jimerson, S. R., Egeland, B., Sroufe, L. A., & Carlson, B. (2000). A prospective longitudinal study of high school dropouts: Examining multiple predictors as cross development. *Journal of School Psychology, 38*(6), 525-549.

Kain, J., & Singleton, K. (1996). Equality of educational opportunity revisited. *New England Economic Review,* (Special issue), 87-111.

Kieffer, M. J. (2010). Socioeconomic status, English proficiency, and late-emerging reading difficulties. *Educational Researcher, 39*(6), 484-486. doi:10.3102/0013189X10378400

Kincheloe, J. L., & Steinberg, S. R. (2007). Cutting class: Socioeconomic status and education. Lanham: Rowman & Littlefield.

Kober, N. (2001). It takes more than testing: Closing the achievement gap. Retrieved January 11, 2015, from Center on Education Policy Web site: http://www.ctredpol.org/studentachievment/closingachievementgap.pdf

Kurnianingsih, S., Yuniarti, K. W., & Kim, U. (2012). Factors influencing trust of teachers among students. *International Journal of Research Studies in Education, 1*(2), 85-94. http://dx.doi.org/10.5861/ijrse.2012.v1i2.77

Kurz, A., Kettler, R. J., & Reddy, L. A. (2015). School-wide educator evaluation for improving school capacity and student achievement in high-poverty schools: Year 1 of the school system improvement project. *Journal of Educational and Psychological Consultation, 25*(2), 90-108. doi:10.1080/10474412.2014.929961

Kwong, J. (1988). *Cultural revolution in China's schools, may 1966-april 1969* (p. 5). Stanford: Hoover Institution Press.

Larmer, B. (2015). *China's test factory*. New York: Scholastic Inc.

Lauen, D. L., & Gaddis, S. M. (2013). Exposure to classroom poverty and test score achievement: Contextual effects or selection?. *American Journal of Sociology, 118*(4), 943-979. doi:10.1086/668408

Law, W. (2014). Understanding China's curriculum reform for the 21st century. *Journal of Curriculum Studies, 46*(3), 332.

Lawrence-Lightfoot, S. (2003). The essential conversation: What parents and teachers can learn from each other (1st ed.). New York, NY: Random House.

Lawrence-Lightfoot, S., & Davis, J. H. (1997). *The art and science of portraiture*. San Francisco, CA: Jossey Bass.

Lei, W., Huang, X., & Schnell, J., (2013).Using Burke's Dramatistic Pentad to interpret Chinese "Gao-Kao" high stakes testing and stressing: Paralleled testing in the U.S. as cross-cultural context. *KOME, 1*(2), 55-63.

Leithwood, K. A., & Riehl, C. (2003). *What do we already know about successful school leadership?* New Brunswick: Rutgers, The State University of New Jersey, Center for Educational Policy Analysis.

Leutner, M., Zang, J., & European Association of Taiwan Studies. (2014). *Interdisciplinary perspectives on gender and equality in China*. Zürich: LIT.

Li, C. (2011). The sociological analysis on the reform of basic education examination evaluation system. *Modern Education Science Education Research, 4*, 53-57. doi:10.13980/j.cnki.xdjykx.gjyj.2011.08.030. (In Chinese)

Li, H., & Che, R. (2010). Chinese imperial examination system: historical features and modern functions. *University Education Science, 3*(1), 33-41. (In Chinese)

Li, J. & Long, Y. (2008). Sociological analysis on the reform of the college entrance examination system in China. *China Youth Research, 3,* 44-49. (In Chinese)

Li, Q. (2012). Disparities between urban and rural teachers under China's market economy: A case study of hunan Province/Inégalités entre professeurs ruraux et urbains sous l'ère de l'économie de marché chinoise: Une étude de cas de la province de hunan. *Canadian and International Education, 41*(2), 71-86.

Retrieved from http://0-search.proquest.com.source.unco.edu/docview/1355923406?accountid=12832

Li, R. (2013). Middle school students' social and economic status, control ability and study on the relationship between economic inequality and interpretation (Doctoral dissertation). Retrieved from http://www.wanfangdata.com.cn. (In Chinese)

Li, T., & Zhang, J. (2010). What determines employment opportunity for college graduates in china after higher education reform? *China Economic Review, 21*(1), 38-50. doi:10.1016/j.chieco.2009.10.001

Lin, C. C., & Fu, V. R. (1990). A comparison of child-rearing practices among Chinese, immigrant Chinese, and Caucasian-American parents. *Child Development, 61,* 429-433.

Liu, H. (2006). Rehabilitation of the imperial examination system. *Frontiers of Education in China, 1*(2), 300-315. doi:10.1007/s11516-006-0009-0

Liu, H. (2013). Reform of the college entrance examination. *Chinese Education & Society, 46*(1), 10-22. doi:10.2753/CED1061-1932460101

Liu, L., Wagner, W., Sonnenberg, B., Wu, X., & Trautwein, U. (2014). Independent freshman admission and educational inequality in the access to elite higher education: Evidence from Peking university. *Chinese Sociological Review, 46*(4), 41-67. doi:10.2753/CSA2162-0555460403

Liu, Q. (2013). Three key issues in the reform programs for the Chinese college entrance examination. *Chinese Education & Society, 46*(1), 41-50. doi:10.2753/CED1061-1932460104

Liu, S., & Onwuegbuzie, A. J. (2014). Teachers' motivation for entering the teaching profession and their job satisfaction: A cross-cultural comparison of china and other countries. Learning Environments Research, 17(1), 75-94. doi:10.1007/s10984-013-9155-5

Liu, S., Xu, X., & Stronge, J. H. (2016). Chinese middle school teachers' preferences regarding performance evaluation measures. Educational Assessment, Evaluation and Accountability, 28(2), 161-177. doi:10.1007/s11092-016-9237-x

Lu, X. (2015). Intergovernmental transfers and local education provision - evaluating China's 8-7 national plan for poverty reduction. *China Economic Review, 33*, 200-211. doi:10.1016/j.chieco.2015.02.001

Lucas, C. J. (1974). Towards a history of Chinese education: Selected resources. Educational Studies: A Journal of the American Education, 5(3), 115-127. doi:10.1207/s15326993es0503_4.

Luo, T. (2009). Countermeasures of compulsory education for low-income children of school age. Social scientist, 1(41), 116-121. (In Chinese)

Lv, L. (2007). A study on the relationship between the development of rural basic education in China and the reduction of poverty population. (Doctoral dissertation). Retrieved from http://www.wanfangdata.com.cn. (In Chinese)

Lv, Y., Yang, M., & Wang, Y. (2015). The Urban-Rural income gap and education inequality and government spending on education in China. *Comparative Economic & Social Systems, 3,* 20-33.

Lynch, J., & Kaplan, G. (2000). *Socioeconomic position* (pp. 23-35). New York: Oxford University Press.

Malecki, C., & Demaray, M. (2006). Social support as a buffer in the relationship between socioeconomic status and academic performance. *School Psychology Quarterly, 21*(4), 375-395. doi:10.1037/h0084129

Marshall, C. (2004). Social justice challenges to educational administration: Introduction to a special issue. *Educational Administration Quarterly, 40*, 5-15.

Martins, L., & Veiga, P. (2010). Do inequalities in parents' education play an important role in PISA students' mathematics achievement test score disparities? *Economics of Education Review, 29*(6), 1016–1033. http://dx.doi.org/10.1016/j.econedurev.2010.05.001

McLoyd,V. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204.

McMahon, W. W. (1998). Education and growth in East Asia. *Economics of Education Review, 17*(2), 159-172. doi:10.1016/S0272-7757(97)00050-2

Mediratta, K., Shah, S., & McAlister, S. (2009). *Community organizing for stronger schools: Strategies and successes*. Cambridge, MA: Harvard Education Press.

Merriam, S. B. (1998). Qualitative research and case study applications in education. San Francisco, CA: Jossey-Bass.

Miller, B., & Taylor, J. (2012). Racial and socioeconomic status differences in depressive symptoms among black and white youth: An examination of the mediating effects of family structure, stress and support. *Journal of Youth and Adolescence, 41*(4), 426-437. doi:10.1007/s10964-011-9672-4

Ministry of Education. (2011). *Guidelines on the Curriculum Reform of Basic Education, Pilot.* Beijing: Beijing Normal University Press. (In Chinese)

Ministry of Education of the People's Republic of China. (2016a). Retrieved from http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/s6183/201112/128828.html. (In Chinese)

Ministry of Education of the People's Republic of China. (2016b). Retrieved from http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/moe_846/200804/33122.html. (In Chinese)

Ministry of Education of the People's Republic of China. (2016c). Retrieved from http://www.moe.gov.cn/s78/A06/jcys_left/moe_706/. (In Chinese)

Montaperto, R. N. (1979). *China's Education in Perspective* (p. 15). New York: M. E. Sharpe.Moustakas, C. (1994). *Phenomenological Research Methods*. Thousand Oaks, CA: Sage.

Morgan, S. L., & Sørensen, A. B. (1999). Parental networks, social closure, and mathematics learning: A test of Coleman's social capital explanation of school effects. *American Sociological Review, 64*, 661-681.

Mori, A. (ed.) (2013). *Environmental Governance for Sustainable Development: East Asian Perspectives.* New York: United Nations University Press.

Munro, D. J. (1972). *Egalitarian Ideal and Educational Fact in Communist China* (pp. 256–301). London: George Allen & Unwin.

Murphy, J. (2002). Reculturing the profession of educational leadership: New blue-prints. *Educational Administration Quarterly, 38*, 176-191.

National Bureau of Statistics of China. (2017a). Retrieved from http://data.stats.gov.cn/easyquery.htm?cn=C01. (In Chinese)

National Bureau of Statistics of China. (2017b). Retrieved from http://www.stats.gov.cn/tjsj/zxfb/201602/t20160229_1323991.html. (In Chinese)

National Bureau of Statistics of China. (2017c). Retrieved from http://data.stats.gov.cn/easyquery.htm?cn=E0105&zb=A01&reg=500000&sj=2014. (In Chinese)

National Center for Education Statistics. (2015). 2015 Chinese residents quality of Life Index Research Report. Retrieved November 17, 2015, from http://www.stats.gov.cn. (In Chinese)

Neumerski, C. M. (2012). *Leading the improvement of instruction: Instructional leadership in high-poverty, urban schools* (Order No. 3554191). Available from ProQuest Dissertations & Theses Global. (1316620173). Retrieved from http://0-search.proquest.com.source.unco.edu.unco.idm.oclc.org/docview/1316620173?accountid=12832

Nichols, J. D. (2003). Prediction indicators for students failing the state of Indiana high school graduation exam. *Preventing School Failure, 47*(3), 112-120.

Niu, W. (2007). Western influences on Chinese educational testing. *Comparative Education, 43*(1), 71-91.

Noguera, P. (2003). City schools and the American dream: Reclaiming the promise of public education. New York, NY: Teachers Press College.

Nonoyama-Tarumi, Y. (2008). Cross-national estimates of the effects of family background on student achievement: A sensitivity analysis. *International Review of Education, 54*(1), 57-82. doi:10.1007/s11159-007-9069-5

Offer, J. (2014). From ‘natural selection’ to ‘survival of the fittest’: On the significance of Spencer’s refashioning of darwin in the 1860s. *Journal of Classical Sociology, 14*(2), 156-177.

Okpala, C. O., Okpala, A. O., & Smith, F. E. (2001). Parental involvement, instructional expenditures, family socioeconomic attributes, and student achievement. *Journal of Educational Research, 95*(2), 110-115.

Okpala, C. O., Smith, F., & Jones, E. B. (2000). A clear link between school and teacher characteristics, student demographics, and student achievement H.W. Wilson - Education Abstracts.

Olivos, E. M. (2006). The power of parents: A critical perspective of bicultural parent involvement in public schools. New York, NY: Peter Lang.

O'Malley, M., Voight, A., Renshaw, T. L., & Eklund, K. (2015). School climate, family structure, and academic achievement: A study of moderation effects. *School Psychology Quarterly, 30*(1), 142.

Pangeni, K. P. (2013). Factors determining educational quality: Student mathematics achievement in Nepal. *International Journal of Educational Development, 34*, 30–41. http://dx.doi.org/10.1016/j.ijedudev.2013.03.001

Patton, M.Q. (2002). *Qualitative research & evaluation methods*. (3rd ed.). Thousand Oaks, CA: Sage.

Peng, W. (2004). Children education of urban vulnerable groups. *Journal of Jiangxi Normal University, 37*(1), 101-104.

Perry, L., & McConney, A. (2010). Does the SES of the school matter? An examination of socioeconomic status and student achievement using PISA 2003. *Teachers College Record, 112*(4), 1137-1162.

Pu, J. (2013). An economic analysis of the external constraints on reform of the higher education admissions system in china. *Chinese Education & Society, 46*(1), 51-63. doi:10.2753/CED1061-1932460105

Qi, D., & Wu, Y. (2016). The extent and risk factors of child poverty in urban china - what can be done for realizing the Chinese government goal of eradicating poverty before 2020. *Children and Youth Services Review, 63*, 74-82. doi:10.1016/j.childyouth.2016.02.015

Ransdell, S. (2012). There's still no free lunch: Poverty as a composite of SES predicts school-level reading comprehension. *American Behavioral Scientist, 56*(7), 908-925.

Reeves, E. B. (2003). Disentangling the effects of non-metro location and student poverty on school Performance/Improvement: Implications for equitable excellence in Kentucky public schools. *Journal of Research in Rural Education, 18*(1), 17.

Riehl, C. (2000). The principal's role in creating inclusive schools for diverse students: A review of normative, empirical, and critical literature on the practice of educational administration. *Review of Educational Research, 70*, 55-81.

Roscigno, V. J. (1998). Race and the reproduction of educational disadvantage. *Social Forces. 7*(6), 10-33.

Rumberger, R. W. (2007). Parsing the data on student achievement in high-poverty schools. *North Carolina Law Review, 85*(5), 1293.

Sanders, M. G., & Harvey, A. (2002). Beyond the school walls: A case study of principal leadership for school-community collaboration. *Teachers College Record, 104*, 1345-1368.

Schutz, A. (2006). Home is a prison in the global city: The tragic failure of school- based community engagement strategies. *Review of Educational Research, 76*, 691-743.

Sergiovanni, T. J. (2006). *The principalship: A reflective practice perspective* (5th ed.). Boston, MA: Pearson Education.

She, P. (2011). The status quo, attribution and construction of the balanced development of urban and rural education in China. *Research on Higher Education in Heilongjiang, 9*(2), 23-30. (In Chinese)

Shen, Y. (2005). *A Research on the educational assistance of urban poor family* (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10487-2006039073.htm. (In Chinese)

Shi, Q. (1999). The inheritance of the imperial examination system in ancient China and the modern civil service system in the West. *Journal of Northeast Normal University: Philosophy and Social Science Edition, 2,* 49-53. (In Chinese)

Shih, C., & Gamon, J. (2001). Web-based learning: Relationships among students' motivation, attitude, learning styles, and achievement. *Journal of Agricultural Education, 42*(4), 12-20. http://dx.doi.org/10.5032/jae.2001.04012

Shirk, S. L. (1982). *Competitive Comrades: Career Incentives and Student Strategies in China.* Berkeley and Los Angeles: University of California Press.

Shirley, D. (2009). Community organizing and educational change: A reconnaissance. *Journal of Educational Change, 10*, 229-237.

Sicular, T., Yue, X., Gustafsson, B., & Li, S. (2007). The urban–rural income gap and inequality in china. *Review of Income and Wealth, 53*(1), 93-126. doi:10.1111/j.1475-4991.2007.00219.x

Sirin, R. S. (2005). Socioeconomic Status and Academic Achievement: A meta-analytic review of research. *Review of Educational Research, 75*(3), 417-453.

Spencer, S. J., Steele, C. M., & Quinn, D. M. (1999). Stereotype threat and women's math performance. *Journal of Experimental Social Psychology, 35*(1), 4-28. doi:10.1006/jesp.1998.1373

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Stanulis, R. N., & Ames, K. T. (2009). Learning to mentor: Evidence and observation as tools in learning to teach. *The Professional Educator, 33*(1), 1-11.

Steele, C. (1999). Thin ice: stereotype threat and black college students. The Atlantic Monthly, 50–54.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 69*(5), 797-811. doi:10.1037/0022-3514.69.5.797

Stern, G. (1970). *People in context*. New York: John Wiley.

Stewart, E. B. (2008). School structural characteristics, student effort, peer associations, and parental involvement: The influence of school- and individual-level factors on academic achievement. *Education and Urban Society, 40*(2), 179-204. doi:10.1177/0013124507304167

Sun, H. (1996). A brief history of China ancient science education (p. 43). Liaoning: Education Press. (In Chinese)

Sun, J. (2010). *Perceptions of effectiveness and fairness of Chinese higher education admissions policy reformed* (Order No. 3427888). Available from ProQuest Dissertations & Theses Global: Social Sciences. (816440995). Retrieved from http://0-search.proquest.com.source.unco.edu/docview/816440995?accountid=12832

Sun, Y. (2014). Econometrics analysis on factors affecting student achievement. *International Journal of Economics and Finance, 6*(11), 1. doi:10.5539/ijef.v6n11p1

Suppes, P., Liang, T., Macken, E., & Flickinger, D. (2014). Positive technological and negative pre-test-score effects in a four-year assessment of low socioeconomic status K-8 student learning in computer-based math and language arts courses. *Computers & Education, 71*, 23-32. doi:10.1016/j.compedu.2013.09.008

Tang, J. (2003). A rational thinking on the phenomenon of "over education" in Higher Education in China. *Professional Development, 6*(4), 77-80. (In Chinese)

Tella, A. (2007). The impact of motivation on student's academic achievement and learning outcomes in Mathematics among secondary school students in Nigeria. *Eurasia Journal of Mathematics, Science & Technology Education, 3*(2), 149-156.

The National Development and Reform Commission. (2014). *Report on China's economic, social development plan* (p. 3). Beijing: Xinhua Press. (In Chinese)

The State Development and Reform Commission. (2015, July). Introduction macroeconomic situation and policy. *The State Development and Reform Commission website.* Retrieved from http://en.ndrc.gov.cn.

Thoron, A., & Myers, B. (2011). Impact of gender, ethnicity, year in school, social economic status, and state standardized assessment scores on student content knowledge achievement when using vee maps as a formative assessment tool. *Journal of Agricultural Education, 52*(1), 85-95. doi:10.5032/jae.2011.01085

Toshalis, E., & Nakkula, M. J. (2002). Motivation, engagement, and students voice: The students at the center series. Jobs for the Future

Tsang, M. C., Ding, X., & Shen, H. (2010). Urban–rural disparities in private tutoring of lower-secondary students. Education and Economy, 2010(2), 7–11, (in Chinese).

Tsegay, S. M., & Ashraf, M. A. (2015). The influence of senior secondary school teachers on students' achievement in gao-kao. *International Journal of Research Studies in Education, 4*(4), 67-76. doi:10.5861/ijrse.2015.1037

Unger, J. (1982). Education under Mao: Class and Competition in Canton Schools, 1960–1980. New York: Columbia University Press.

Van Manen, M. (1990). Researching lived experience: human science for an action sensitive pedagogy. Albany: State University of New York Press.

Van Uden, J. M., Ritzen, H., & Pieters, J. M. (2013). Engaging students: The role of teacher beliefs and interpersonal teacher behavior in fostering student engagement in vocational education. *Teaching and Teacher Education, 37*, 21-32. http://dx.doi.org/10.1016/j.tate.2013.08.005

Vogel, E. F. (1969). Canton under Communism: Programs and Politics in a Provincial Capital, 1949–1968. Cambridge, Mass.: Harvard University Press.

Wagner, T., Kegan, R., Lahey, L., Lemons R. W., Garnier, J., Helsing, D., et al. (2006). *Change leadership: A practical guide to transforming our schools*. San Francisco, CA: Jossey-Bass.

Wang, H. (2013). A commentary on China's new curriculum and the programs to design subjects for the college entrance examination. *Chinese Education & Society, 46*(1), 32-40. doi:10.2753/CED1061-1932460103

Wang, H., & Cai, T. (2015). Parental involvement, adolescents' self-determined learning and academic achievement in urban china: Parental involvement and achievement. *International Journal of Psychology,* n/a. doi:10.1002/ijop.12188

Wang, J. (2003). *New compilation of Chinese history of Education* (p.10). Guangdong: Higher education publication. (In Chinese)

Wang, J. (2007). The present situation and causes of low-income people in cities. *Social Sciences Journal of College of Shanxi, 19*(12), 37-44. (In Chinese)

Wang, J. (2012). Curriculum reform in mainland China, 1978-2008. *Chinese Education & Society, 45*(1), 59-68. doi:10.2753/CED1061-1932450107

Wang, L. (2010). *Analysis of college entrance exam model* (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10056-1011278180.htm. (In Chinese)

Wang, L., Li, X., & Li, N. (2014). Socio-economic status and mathematics achievement in China: A review. *ZDM, 46*(7), 1051-1060. doi:10.1007/s11858-014-0617-8

Wang, S. (2010). The Development of information age in talent market in China. *Public Communication of Science & Technology, 1*(19), 44-56. (In Chinese)

Wang, X. (1992). The origin of Chinese Education. *Journal of Hangzhou College of Education, 92*, 77-80. (In Chinese)

Wang X. (2015). Admission system reform and career pathway. *China Youth Study, 2,* 19-22. (In Chinese)

Wang, Y. (2007). Investigation the market demand of Environmental Engineering major in Colleges. *Employment of Chinese College Students. 16*(2), 38-49. (In Chinese)

Wang, Y. (2013). *Non-compulsory educational support to student from low-income families in the city* (Doctoral dissertation). Retrieved from http://cdmd.cnki.com.cn/Article/CDMD-10200-1013361813.htm. (In Chinese)

Wang, Z. (2011). The new trend of the balanced development of urban and rural education in foreign countries: a theoretical framework of social ecological system. *Chinese Education Journal,* 1(2), 70-73.

Ward, C. J. (2013). Why leadership matters: One school's journey to success. *Educational Leadership and Administration, 24*, 62.

Warren, M. R. (2005). Communities and schools: A new view of urban education reform. *Harvard Educational Review, 75*, 133-173.

Warren, M. R. (2010). Community organizing for education reform. In M. Orr & J. Rogers (Eds.), *Public engagement for public education* (pp. 139-172). Palo Alto, CA: Stanford University Press.

Warren, M. R., Hong, S., Rubin, C. H., & Uy, P. (2009). Beyond the bake sale: A community-based relational approach to parent engagement in schools. *Teachers College Record, 111*, 2209-2254.

Wen, D. (2005). The impacts of SES on higher education opportunity and graduate employment in China. *Peking University Education Review, 3*(3), 58–63.

Williams, K. C., & Williams, C. C (2011). Five key ingredients for improving student motivation. *Research in Higher Education Journal.* Retrieved from http://www.aabri.com/manuscripts/11834.pdf

Willie, C., Alicea, J., Alves, M., & Mitchell, C. (1998). *Equity and excellence: A plan for educational improvement of the Charleston County public schools.* Charleston, SC: The Charleston Planning Project for Public Education.

Willie, C. V. (2001). The contextual effects of socioeconomic status on student achievement test scores by race. *Urban Education, 36*(4), 461-478. doi:10.1177/0042085901364002

Wojtkiewicz, R. A., & Katharine M. D. (1995). Hispanic Educational Attainment: The Effects of Family Background and Nativity. *Social Forces, 74*(2), 559-574.

Wong, Y., Wang, T., & Xu, Y. (2015). Poverty and quality of life of Chinese children: From the perspective of deprivation: Child poverty and quality of life. *International Journal of Social Welfare, 24*(3), 236-247. doi:10.1111/ijsw.12115

World Bank. (2008, May). China's success against poverty: lessons for Africa? Retrieved from http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:21778188~pagePK:64165401~piPK:64165026~theSitePK:469382,00.html.

World Bank. (2016). China poverty headcount ratio. Retrieved from http://povertydata.worldbank.org/poverty/country/CHN

Xie, A., & Postiglione, G. A. (2016). Guanxi and school success: An ethnographic inquiry of parental involvement in rural china. *British Journal of Sociology of Education, 37*(7), 1014-1033. doi:10.1080/01425692.2014.1001061

Xie, Z. (2012). Development of ancient Chinese Education. *Times report, 1*, 41-44. (In Chinese)

Xie, Z. & Wang, W. (2006). The difference in higher education access opportunities of children in different strata in China in the context of popularization in higher education. *Journal of Educational Studies, 2*(2): 65–74. (In Chinese)

Xu, W. (2013). Education equity-more significant social justice. New curriculum, 1, 117. (In Chinese)

Xu, X., & Mei, W. (2009). *Educational policies and legislation in China.* Hangzhou: Zhejiang University Press. (In Chinese)

Xue, H., & Ding, X. (2009). A study on additional instruction for students in cities and towns in China. *Educational Research, 348*, 39–46, (in Chinese).

Yamamoto, Y., Li, J., & Liu, J. L. (2016). Does socioeconomic status matter for Chinese immigrants' academic socialization? family environment, parental engagement, and preschoolers' outcomes. *Research in Human Development, 13*(3), 191-206. doi:10.1080/15427609.2016.1194706

Yan, C. (2015). "We can't change much unless the exams change": Teachers' dilemmas in the curriculum reform in China. *Improving Schools, 18*(1), 5-19. doi:10.1177/1365480214553744

Yang, H., & Wang, H. (2016). Returns to education in china: 1989-2011. *China Economist, 11*(3), 39-53. Retrieved from http://0-search.proquest.com.source.unco.edu/docview/1788598113?accountid=12832

Yao, X., Fang, X., & Qian, X. (2014). Intervention Effect of College Enrollment Expansion on University Graduates' Salary. *Population and Economy, 1,* 12-21. Retrieved from http://www.cnki.com.cn/Article/CJFDTOTAL-RKJJ201401011.htm. (In Chinese)

Yates, L. & Young, M. (2010) Globalization, knowledge and the curriculum. *European Journal of Education, 45*(1), 4-10. doi:10.1111/j.1465-3435.2009.01412.x.

Yeung, W. J. (2013). Higher education expansion and social stratification in China. *Chinese Sociological Review, 45*(4), 54-80. doi:10.2753/CSA2162-0555450403

Yin, R. K. (2003). *Case study research: Design and method* (3rd ed.). Thousand Oaks. CA: Sage.

Yin, R. K. (2009). *Case study research: Design and Methods*. Thousand Oaks: CA: Sage.

Ylimaki, R., & Jacobson, S. (2013). School leadership practice and preparation: Comparative perspectives on organizational learning (OL), instructional leadership (IL) and culturally responsive practices (CRP). *Journal of Educational Administration, 51*(1), 6-23. doi:10.1108/09578231311291404

You, Z., & Hu, Y. (2013). Walking a policy tightrope: The dilemma of balancing diversification and equality in Chinese college entrance examination reform. *Higher Education Policy, 26*(3), 309-324. doi:10.1057/hep.2013.3

Zeng, T., Deng, Y., Yang, R., Zuo, X., Chu, Z. & Li, X. (2007). Balanced development of compulsory education: Cornerstone of education equity. *Front Education China 2007, 2*(4), 469–493. doi: 10.1007/s11516-007-0037-4

Zhang, C., Huang, Z., & Li, H. (2007). An empirical study on education equity in China, 1978–2004. *Frontiers of Education in China, 2*(4), 536-544. doi:10.1007/s11516-007-0040-9

Zhang, D., Li, X., & Xue, J. (2015). Education inequality between rural and urban areas of the people's republic of China, migrants' children education, and some implications. *Asian Development Review, 32*(1), 196-224. Retrieved from http://0-search.proquest.com.source.unco.edu/docview/1679010899?accountid=12832

Zhang, H. (2014). The poverty trap of education: Education-poverty connections in western China. *International Journal of Educational Development, 38*, 47-58. doi:10.1016/j.ijedudev.2014.05.003

Zhang, H., Chang, K., Zhang, F., Greenberger, E., & Chen, C. (2011). Mental health problems and coping styles of urban and rural high school students in China. *Journal of Community Psychology, 39*(8), 1019-1030. doi:10.1002/jcop.20492

Zhang, S., Zhong, X., & Zhang, B. (2012). Discussion on the causation of employment discrimination among college graduates. *University Education Management, 6*, 21-30. (In Chinese)

Zhang, W. (2006). The changes of the college entrance examination system in China. *Basic Education, 7*(6), 32-47. (In Chinese)

Zhang, W., Chen, L., Yu, F., Wang, S., & Nurmi, J. (2015). Hopes and fears for the future among Chinese adolescents. *Journal of Research on Adolescence, 25*(4), 622-629. doi:10.1111/jora.12166

Zhang, X. (2012). The effects of parental education and family income on Mother–Child relationships, Father–Child relationships, and family environments in the people's republic of china. *Family Process, 51*(4), 483-497. doi:10.1111/j.1545-5300.2011.01380.x

Zhang, Y. (2006). A statistical analysis of the impact of educational investment on economic growth in China. *Market Forum, 6*(3), 192-193. (In Chinese)

Zhang, Y. (2013). Does private tutoring improve students' national college entrance exam performance? A case study from Jinan, China. *Economics of Education Review, 32*, 1-28. doi:10.1016/j.econedurev.2012.09.008

Zhang, Y., Chen, D., & Wang, W. (2014). The heterogeneous effects of ability grouping on national college entrance exam performance - evidence from a large city in China. *International Journal of Educational Development, 39*, 80-91. doi:10.1016/j.ijedudev.2014.08.012

Zhao, B. (2007). *Research on compulsory educational burden of children from urban low-income level bearing* (Doctoral dissertation). Retreated from http://www.wanfangdata.com.cn. (In Chinese)

Zhao, J. (2004). *History of Chinese Confucianism* (p. 4). Hunan: People's press. (In Chinese)

Zhao, Y. (2007). China and the whole child. *Educational Leadership, 64*(8), 70.

Zhu, L. (2012). Research on the effective connection between professional setting and market demand. *Journal of Zhengzhou University, 4,* 89-91. (In Chinese)

APPENDIX A.

INITIAL INTERVEWEE CONTACT

Transcript for Initial Interviewee Contact

Hello! My name is Dongfang Liu. I am a Doctoral student at the University of Northern Colorado. I am conducting a research for my dissertation called, "An Exploration of Experiences of Low Socioeconomic Chinese Students Who Achieve High Scores on the National College Entrance Exam" For my research, I want to learn more about the encouraging story behind your academic success. Specifically, the focus of the research is to learn more about how you worked to obtained high achievement on the National College Entrance Exam.

You are being contacted because you meet the study criteria as a student who performed outstandingly on the National College Entrance Exam and your family income is under local minimum wage. It is my hope that you will let me learn from your valuable experiences of academic excellence under the pressure of economic disadvantage.

I would like to share a letter of consent with you to gain your permission to hold an interview and allow me to record the interview for future transcribing purposes. The interview will be held outside of school hours at a time and place that is convenient for you. The interview will take no longer than 45 minutes of your time. I will share the eight interview questions with you ahead of time (The interview questions are listed at end of the letter) and I will share the findings of my study with you once the study is completed.

Please let me know if you are interested in participating in the research study. I am so appreciative of your time and knowledge.

Thank you,
Dongfang Liu

The interview questions:

1. What scores did you receive from the exam?
2. What is your cohort ranking for your NCEE scores?
3. Are you currently enrolled in college?
4. What is the ranking of your college?
5. Would you please explain how you prepared for the NCEE?
6. Would you please describe any challenges you experienced in preparing for the NCEE?
7. Would you please identify what supports helped you to do well on the NCEE?
8. Do you have any suggestions for students who come from similar family backgrounds and want to obtain good scores on the NCEE?

APPENDIX B

CHINESE INITIAL INTERVIEWEE CONTACT

面谈邀请信

“你好，我叫刘东方”。我是北科罗拉多大学的博士学生。我正在为我的毕业论文准备一个叫做“对取得优秀高考成绩的经验案例的分析：关于中国低社会经济地位学生的研究”。我想要学习你在取得学习成功背后的励志故事。特别是，我的研究想要了解你是如何战胜家庭因素的原因，并在高考中取得优秀成绩的故事。

你现在被联系是因为，你的背景满足我研究对象的筛选标准。你在中国高考中有优秀的表现。而你的家庭的收入低于城市低保线。我诚挚的希望你能够让我了解更多你的经验，让我帮助那些有相同经历的学生成才。

我会给你一份同意参加研究的申请书给你。我们的面谈会被录音，用来我后期研究我们的谈话。我们的面谈会在一个私密的环境里面进行，大概会用 45 分钟的样子。我们的面谈会有九个问题，我会提前把问题给你参考。我们的面谈完了以后，我会把我总结的你的观点给你审阅。

请告知我是否有兴趣参加我的研究。我非常的期待和你的见面。

感谢，
刘东方

问卷问题:

1. 您在高考中取得了什么样的分数？
2. 您的高考分数在您的应届班的排名如何？
3. 您现在在高校学习吗？
4. 您现在的高校的排名是多少？
5. 能简单的介绍下您是如何准备高考的吗？
6. 能简单的介绍下您在准备高考的过程中遇到了什么样的困难吗？
7. 能简单的介绍下您收到了那些帮助，使您在高考中取得优秀的成绩吗？
8. 您能给来自其他低收入家庭的学生提供什么样的建议来帮助他们在高考中取得好的成绩？

APPENDIX C

CONSENT FORM FOR PARTICIPANT

UNIVERSITY of NORTHERN COLORADO

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title:
An Exploration of Experiences of Low Socioeconomic Chinese Students Who Achieve High Scores on the National College Entrance Exam

Researcher: Dongfang Liu, doctoral Candidate
Phone Number: 424-542-1838
E-mail: dongfang.liu@unco.edu

Research Advisor: Linda Vogel
Phone Number: 970-351-2119
E-mail: linda.vogel@unco.edu

I am conducting research for my dissertation study on the experiences of low socioeconomic Chinese students who have achieved high scores on the National College Entrance exam. Given your outstanding performance on this exam, you meet the criteria for participation in my study. I would appreciate it you would share with me your experiences in preparing and taking the National College Entrance exam in an interview. The interview will be held outside of school hours at a time and place that is convenient for the participants. I will honor privacy and will take no longer than 45 minutes of their time. I will share the eight interview questions with the participants ahead of time, and once the interview is complete and analyzed, I will share the findings with the participants.

I will audio record the interviews to back up the notes for future transcribing purposes. At the end of the research, I will ask the participants to review the transcript of their interview. I will take every precaution in order to protect confidentiality, including the assigning of pseudonyms to each participant. No real names of individuals or places will be used in the transcription, analysis, or reporting of the data collected in this study. The recordings, field notes, and transcripts will be kept on a password-protected computer accessible only to the researcher and all data will be destroyed within three years after the project is completed. Consent forms will be kept in a locked file cabinet in the Educational Leadership and Policy Studies office of the research advisor.

Potential risks in this project are minimal. The participants will have time to consider if they wish to participate in the study.

The names of participants will not appear in any papers or publications resulting from this research and pseudonyms will be used to protect confidentiality. The participants are free to phone me if they have any questions or concerns about this research and will retain one copy of this letter for their records.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, in the Office of Research, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

_____ _____

Participant's Full Name (please print) Date

_____ _____

Participant's Signature Date

_____ _____

Researcher's Signature Date

APPENDIX D

CHINESE CONSENT DOCUMENT

UNIVERSITY of
NORTHERN COLORADO

College of Education and Behavioral Sciences
Educational Leadership and Policy Studies

个人研究同意书

项目名称: 对取得优秀高考成绩的经验案例的分析：关于中国低社会经济地位学生的研究

研究员: 刘东方, 博士生
Phone Number: 424-542-1838
E-mail: dongfang.liu@unco.edu

Research Advisor: Linda Vogel
Phone Number: 970-351-2119
E-mail: linda.vogel@unco.edu

我正在完成我的博士论文的研究，题目的名称是“对取得优秀高考成绩的经验案例的分析：关于中国低社会经济地位学生的研究”。对我的研究，我想要了解到在你成功的教育经历里面激励人心的故事。特别是的我想要了解是那些因素地社会经济地的因素影响到你的教育过程。我的研究是以面谈采访的形式，我们的采访会在校外进行，并且不会超过 45 分钟。我会提前把我们的采访问题给你，让你提前准备我们要讨论的问题。

在研究结束之后，我会把整理的内容反馈与你，让你审阅。收集到的数据将被保持机密性。具体来说，将采取以下措施，以保护参与者的保密性: 根据收集数据，参与者的反应会立即匿名进入了一个电子表格，不会有任何可识别参与者的信息；数据表格将密码保护，以限制其他人员访问。

如果您愿意参加这项研究，请完成一个访谈。整个问卷大概需要30分钟来完成。您不会被问及姓名或相关的个人信息，而您的回答会被随机的用希腊字母来编号，以避免**泄**露您的答案。这个研究会在最终的报告，陈述，或是发表的文章中使用假名。所以，您的参与和回答在数据采集，分析，以及发表的全过程都会保密。您的参与也是完全自愿的。

我并**没**有预见参与研究会对您照成任何的不适，但如果您有任何的疑问和顾虑，请与我联系。您可以通过这个电子邮箱联系我，或者我的电话。您的参与是完全自愿的，而且您也可以选择不回答具体的某个问题。

如果您有任何对于参加这个研究项目的疑惑或者不满，请联系发起研究的办公室，北科罗拉多大学开普纳厅。地址：北科罗拉多大学，邮编 80639; 电话：970-351-2161.

_____[签字]

_____[研究者]

APPENDIX E

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

DATE:	October 25, 2016
TO:	Dongfang Liu
FROM:	University of Northern Colorado (UNCO) IRB
PROJECT TITLE:	[966912-2] An Exploration of Experiences of Low Socioeconomic Chinese Students Who Achieve High Scores on the National College Entrance Exam
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
APPROVAL DATE:	October 25, 2016
EXPIRATION DATE:	October 25, 2017
REVIEW TYPE:	Expedited Review

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB has APPROVED your submission. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of October 25, 2017.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

Thank you for the swift revisions to your consent form. Please be sure to use this amended form in your participant recruitment and data collection.

Best wishes with your research and please don't hesitate to contact me with any IRB-related questions or concerns.

Sincerely,

Dr. Megan Stellino, UNC IRB Co-Chair

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.