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Education in Modern China a Case Study:
Teachers' Attitudes of In-service / Professional
Development in Guangzhou, China

Education in Modern China a Case Study:
Teachers' Attitudes of In-service / Professional
Development in Guangzhou, China

A dissertation submitted in partial fulfillment
of the requirement for the degree of
Doctor of Philosophy in Curriculum and Instruction

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ABSTRACT

China has a long history of education, which can be traced back to the Shang Dynasty (1523 B.C. to 1027 B.C.). During this long history changes occurred as the needs of society changed. During the Warring States Period (770 B.C. to 221 B.C.), the philosophies of Daoism and Confucianism were developed. These philosophies became the cornerstone of education theory and practice in China. At the end of the Qing Dynasty (1644 to 1911), steps were taken to train teachers with the goal of universal education for all of its citizens. Since 1977, the Chinese government has taken strides in universal education one way they are working on this is by improving teacher professional development.

This study examined the attitudes of teachers in the city of Guangzhou China as to their attitudes toward professional development. Using employment records, every third teacher was asked if they were willing to participate in the study. If so they were given the internet site to take the survey in the school. There were a total of 464 teachers who agreed to take part in the study. After teachers finished taking the study and the answers were examined, it was found that question 24 was not answered 150 times; further examination into this revealed that the question might have had a cultural bias indicting the teacher wanted to advance and take the supervisor's position.

The instrument used was "Attitude Toward In-service Scale" by Kathleen Flanagan-Hudson, with a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The following statistical analyses were performed on the data: a one-way ANOVA, a two-way ANOVA, Tukey test, and a Brown and Forsythe's Test for homogeneity of total variance.

The study indicated that there was no significant difference in attitudes of teachers based on gender. Teachers in the male category rated themselves a mean of 3.76 and a standard

deviation of 0.45. Teachers in the female category rated themselves 4.03 and a standard deviation of 0.38.

The study indicated that there was a significant difference in the attitudes of teachers toward professional development based on the years of experience. Teachers with more years of experience rated themselves higher on the scale. Teachers of the 5 years or less and the 6 to 15 years categories had means of 3.38 and 3.98 respectively and a standard deviation of 0.55. Teachers in the 16 to 25 years and 26 years or more categories had a means of 4.06 and a standard deviation of 0.21 and 0.22 respectively.

The study indicated that there were significant differences in the attitude of teachers towards professional development based on the age of the teachers. Teachers in the age of 30 years or less and 31 to 40 years rated themselves a mean of 3.45 and 3.78, with a standard deviation of 0.56 and 0.47 respectively.

DEDICATION

I would like to dedicate this to Joanna, my wife, who with patience and understanding helped me achieve this goal.

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I. INTRODUCTION

A. STATEMENT OF THE PROBLEM

The world is becoming more interconnected as technology continues to progress. To keep pace with this change, it is imperative for the populations of countries to adapt to the technological changes. Not only is a well-educated population an important resource, there is a recent trend to make populations more diverse in their education to allow a greater competitive edge in a global market. Many countries are rethinking and retooling their education system to adapt to the changes and advancements in technology, so that they can remain competitive in an increasingly demanding job market (Education Office of the Embassy of the People's Republic of China, 2009). Enhancing teaching skills should be a primary focus of any education reform (Garet, Porter, Desimone, Birman & Yoon, 2001).

To meet this demand China set test score targets and attempted a variety of policy changes to achieve better scores, encompassed in the 1986 Compulsory Education Law (Surowski, 2000). The ultimate goal was to have better-educated citizens who are more productive. An accepted process is to examine the results of students test scores. Chinese policymakers view professional development as a critical tool for education reform. Hence China has been focusing on professional development as an instrument that will allow students to perform better on standardized testing (Huang, 2004).

According to China's Education Law, which went into effect September 1, 1995, Order 45, Chapter IV, Article 34, "The State applies a system of qualifications, posts and appointment for teachers, enhances the quality of teachers and builds a strong contingent of teachers by means of examination, awards and training", (Eighth National People's Congress, 2010, March 1). Until 1989 teacher education often meant pre-service and in-service education. Prior to 2005, China

operated a four tier system for teacher education. The four types of institutions were responsible for teaching each of the four levels. The top-level normal universities' graduated teachers for the universities. A four year undergraduate normal university prepared teachers for high school. Two to three year professional teacher colleges prepared teachers for middle school, and normal schools at the secondary education level prepared teachers for primary schools and kindergarten. This amounted to 1,083 institutions dedicated to teacher preparation (Shi & Englert, 2008).

The Ministry of Education instituted a number of reforms and in 2005 the four tier system was abolished. By May 2006, China's 1,083 institutions of teacher training merged together into 475 institutions. Of these institutions 183 were normal colleges, 34 were independent education institutes, and 258 were general comprehensive colleges and universities (Shi & Englert, 2008). Through this reform process the education profession became more standardized.

China's education system today can best be described as following the mutual adaption approach of curriculum implementation based on Fullan's breakdown of curriculum implementation (1991). The curriculum is context-based and situationally constrained. Students are not taught in a manner that allows for critical thinking. Teachers and school administrators have been following a centralized plan, but need to utilize what is best for their students (Xu, 2009).

B. EDUCATION IN CHINA: A HISTORICAL OVERVIEW

Daoism.

The first school of thought was Daoism, propagated by Laozi born in 604 B.C. during the Warring States Period (770 B.C. to 221 B.C.). Daoism eventually became the philosophy of the elite. Laozi attracted followers who hoped they could attain immortality. This could be obtained through breathing exercises, sexual techniques and medical potions. In the 2nd century, Daoists began to believe that Laozi was a deity who could bring them salvation (Hansen, 2000).

Dao means “the way” in Chinese. It is the yin and yang, the seemingly opposite forces which are connected and create balance. Man and woman, light and dark, pleasure and pain have all been used as examples of Daoism. The Daoist propriety and ethics emphasize the Three Jewels of the Dao: compassion, moderation, and humility. Daoist thought focused on health, longevity, immortality, wu wei (non-action) and spontaneity. Laozi, after teaching for a number of years and completing a book of his teachings of about 5,000 words, left on his ox ‘from Hangu Pass’ and was never seen again (Kuhn, 2009).

Confucianism.

Confucius (Master Kong or Kong Fuzi) lived approximately from 551 B.C. to 478 B.C. His school was open to all males regardless of social status. The teachings were based on humanism and the belief that all people are teachable. Confucius developed a philosophical and ethical system that helped form the belief system of Chinese which continues to be influential to this day. Confucianism was the basis for education in China for many centuries. It is the philosophy that the Chinese people are rooted in. Confucius taught a philosophy of respecting each other as well as the importance of learning (Nylan & Wilson, 2010).

As the need for an educated bureaucracy grew, there came a need to have some standard to determine eligibility to positions in government. Gradually it came based on The Four Books and The Five Classics. These works outlined the principles of society and government. These also addressed personal codes of conduct. The Four Books are The Analects of Confucius, Mencius, The Great Learning and The Doctrine of the Mean. The Five Classics are The Book of Odes, The Book of Documents, The Book of Rites, The Book of Change and The Spring and Autumn Annals (Surowski, 2000). Together these came to define Confucian philosophy.

The Analects of Confucius also known as Analects (Selected Sayings) heavily influenced the philosophy and moral values of the Chinese. The Analects is a collection of sayings and ideas attributed to Confucius, but written by one of his students Mencius. An example can be found in Analects 12.11, which stated the goal of education was to produce ethically well-cultivated men, who would carry themselves with gravity, speak correctly and demonstrate consummate integrity in all things (The Analects, Legge, J., trans. 1861).

Mencius taught that education must awaken the innate abilities of the human mind. He denounced memorization and advocated active interrogation of the text. Sayings such as, "One who believes all of a book would be better off without books" are an example of his belief to question everything and to not believe everything you read. According to Mencius, one should check for internal consistency by comparing sections and debate the probability of factual accounts by comparing them with experience.

“The ability possessed by men without having been acquired by learning is intuitive ability, and the knowledge possessed by them without the exercise of thought is their intuitive knowledge. Children carried in the arms all know to love their parents, and when they are grown a little, they all know to love their elder brothers” (Mencius, The Analects, Legge, trans. 1861).

The Great Learning was taken from the Classic of Rites, part of the Five Classics. It provides a step-by-step illustration of how all aspects of society, ranging from the refinement of the self to the order within one's household or state is ultimately dependent upon the expansion of one's knowledge (The Great Learning, Muller, trans. 2013).

The Superior Man looks for good in others only after possessing it in himself. He negates the evil in others only after ridding it from himself. There has never been a case where a person was able to teach others the things he had learned, if he lacked a sense of reciprocity. Therefore, the governing of the country lies in the regulation of the family (The Great Learning 10.10, Muller trans. 2013).

The Doctrine of Mean provides symbolism and guidance in perfecting oneself. The goal of the Mean is to maintain balance and harmony. The Superior Man is what everyone strives to be, but few achieve this goal. The doctrine emphasizes moderation, rectitude, objectivity sincerity, honesty and propriety. (The Doctrine of Mean, Muller, trans. 2011).

The first of the Five Classics is the Book of Odes, a book of poems. These 305 poems describe the human condition. Poems used in describing marital relationships were then extrapolated as the relationship between ruler and subjects. This use of allegory was used by nobility to validate or express their position on matters that interested them (Book of Odes, Cranmer-Byng trans.1908).

The Book of Documents is a compilation of speeches made by important figures in Chinese history. The book is divided into two sections, the New Text and Old Text. Though the authenticity of the Old Text has been put into question, it was most likely written during the Spring and Autumn Period, 771 B.C. to 476 B.C. The works mainly consist of idealized rulers, political concerns, and morals (The Book of Documents, Legge, trans. 1861).

The Book of Rites describes the social forms, administration and ceremonial rules of conduct of the Zhou Dynasty. The book emphasized the spirit of piety and respect for others. This work offers an in depth look at Chinese culture; the clothing styles, family structure, music, and other daily activities of the people at that time (The Book of Rites, Legge, trans. 1885).

The Book of Change also known as I Ching is the oldest of the Chinese classical texts and is believed to predate written history. The oldest manuscript dates back to the Warring States period (475 B.C. to 221 B.C.). The book is a combination of divination and philosophy. It contains advice on ethical and moral principles according to one's position in society. The theme of the book is a belief of balance of opposites and the acceptance of the inevitability of change (Book of Change, Legge, trans. 1861).

The Spring and Autumn Annals are the chronicles of the State of Lu; from 722 B.C. to 481 B.C. the book documents various feudal states' political interactions; political, alliances and military actions. The chronicle also notes natural disasters, as this was seen as heaven influencing the world of humans (The Spring and Autumn Annals, Legge, trans. 1861).

Imperial China (1523 B.C. to 1912 A.D.).

The earliest forms of formal education in China can be traced back to the Shang Dynasty (1523 B.C. to 1027 B.C.), when nobility were taught in private schools. The curriculum consisted of the Six Arts: Rites, Music, Archery, Chariot Riding, History and Mathematics. During the Spring and Autumn Period (770 B.C. to 476 B.C.) private schools flourished. Various schools of thought spread throughout China (Kuhn, 2009).

Emperor Wu of the Han (141 B.C. to 87 B.C.) started an early form of an imperial examination based on the Confucian classics. By setting up this examination Emperor Wu was able to select a higher quality of applicants for positions in his government. Each succeeding

dynasty built upon the previous dynasties' examination process. Schools were set up for those who could afford to attend. In these schools the students prepared for taking the examination (Kuhn, 2009).

The Song Dynasty (960 A.D. to 1279 A.D.) is credited for engraining Confucianism into Chinese thinking. The Song Dynasty produced a renaissance. Movable type print allowed for the mass distribution of knowledge and literature. Research was conducted in a variety of sciences leading to the inventions of gun powder, paddle wheeled boats, as well as a merchant fleet that sailed as far as the Indian Ocean. Increased rice production allowed for the doubling of the population to an estimated 100 million people (Xiang, Faing, Jiafend & Hongtu, 2009). Social elites were able to pursue the studies of science, philosophy, mathematics and engineering. Confucian ideology became a powerful force in public and private life and shaped the role rulers took in internal and external affairs (Kuhn, 2009).

The three centuries of rule by the Song Dynasty laid the ground work in education for every dynasty that followed. During this time of enlightenment, the Chinese people prospered and grew in number. To manage this growing population the Song rulers extended the testing system and applied it to nearly every official down to the local level (Kuo, 1915). Throughout the rise and fall of each dynasty, only those males of noble birth or those males who were sponsored by someone of wealth could receive an education. To this day these writings and teachings exert an influence on virtually all aspects of life in China (Kuhn, 2009).

Early 20th century.

In the final years of the Qing Dynasty (1644 to 1911), the ruling class found China to be at a great disadvantage when compared to other nations of the time. China had remained isolated and fallen behind economically, technologically and militarily. The western European nations

were demanding extraterritorial rights and favorable trade treaties and territory. The Qing Dynasty fought and lost a series of wars against the western powers.

Japan had been in a similar situation but had adapted to Western advances. Factories were built, the economy retooled and upgraded the military and within a short period of time, Japan had become an industrialized society. The Chinese looked to the Japanese experience as how they could advance.

Chinese scholars were sent to Western countries to learn the ways of modern nations so that China could compete with the powers of the time. Many returned and started pushing for changes in the education system to match the western standards. Influential Chinese reformers such as Kang Youwei, Yan Fu and Cai Yuanpei became the most vocal advocates for mass education of all Chinese (Ashmore & Cao, 1997).

Western educators were invited to come to China to help set up schools. John Dewey was invited to speak at several universities in 1919 on the importance of education. Seeing the possibilities Dewey stayed in China and spent the next two years touring the country, giving lectures on democracy and education (Hoyt, 2006).

Despite the turmoil in China from 1912 to 1949, education was expanded considerably, but to what extent is difficult to determine, as only recently has the Chinese government made records public (Boshier & Huang, 2006). The subject matter in education in China was very narrowly focused. For example many Confucian scholars as well as other educated elite refused to believe the theory that the earth was a globe (Xiang, Faqing, Jiafeng, & Hongtu, 2009). This was in part due to the narrow focus on archaic, accepted works. For many centuries the Chinese education system consisted of only literacy, philosophical and ethical teachings. For the teacher

there was little in the way of training in either the experimental method or in inductive reasoning (Kuo, 1915).

In all some 30,000 Chinese students studied abroad in the United States, Britain, France, Germany and Japan (Perrolle & Reed, 1980). The result was that the Kuei Mao Education System was implemented for upper level elementary school (Xiang, Faqing, Jiafeng, & Hongtu, 2009). One of the primary goals of this system was to make students aware of the outside world.

The number of schools increased dramatically during the early 20th century, as can be seen from Kuo in his 1915 publication of *The Chinese System of Public Education*. The number of schools from 1905 to 1910 grew by almost 49,000. The school system was broken down into three areas: government, public and private schools (see Table 1). Government schools were financed by the central government. Public schools were funded by local governments. Private schools were funded by private individuals and donations from organizations.

In 1901 the Guangxu Emperor issued an edict to greatly expand the education system in China. Elementary schools were to be set up in every district. Middle schools were to be established in every prefecture. Colleges were to be expanded to model the Imperial University at Peking (Kuo, 1915).

Two years later a special commission presented a detailed plan of this expansion. Three types of normal schools were designated; the higher normal, the lower normal, and the industrial training school. The cost of these normal schools was paid for by the local government. An entrance test was given for entrance into these schools. However, there was no indication if the quality of the normal schools or teachers who graduated from these schools was examined (Kuo, 1915).

Table 1.

Growth in number and type of Schools

Year	Government	Public	Private	Totals
1905	3,605	393	224	3,387
1906	2,770	4,829	678	9,112
1907	5,224	12,310	2,296	19,830
1908	11,546	20,321	4,046	35,913
1909	12,888	25,688	4,512	43,088
1910	14,301	32,254	5,793	52,348

Note. Adapted from (Kuo, 1915).

In Kuo's The Chinese System of Public Education, he stated that in 1911 the Ministry of Education's Third Annual Report, the total numbers of students and teachers in 1910 were 1,625,534 and 89,766 respectively. The Qing government increased the number of teacher colleges as it sought to implement an imperial decree of universal education (see Table 2). In 1910 the number of teacher schools rose to 410. As indicated in Table 2 in 1910 the number of student teachers declined due to an increase in raising standard requirements.

In the early 1920s the concept of "all-round education" became popular among Chinese academics. The thought was that work and study should be used together in order to produce a well-rounded citizen. The anticipated end result of this "work-studyism" was the elimination of the division of labor. This philosophy was first introduced by Jose Marti, the nineteenth century father of Cuban nationalism. In 1919 it was championed by Cai Yuanpei, the Dean of the University of Beijing. Work-studyism was implemented during the Great Leap Forward with disastrous results (Cheng & Manning, 2003).

Table 2.

Number of Student Teachers from 1903 to 1910

Year	Higher Normal	Lower Normal	Teachers' Training Schools
1903	80
1904	1,500	90
1905	974	2,234	2,113
1906	1,069	5,031	2,088
1907	2,389	18,253	10,041
1908	3,890	27,474	13,583
1909	5,817	19,383	12,819
1910	5,349	15,553	7,670

Note. Adapted from (Kuo, 1915).

The Republic of China (1912 to 1949).

The period from 1912 to 1949 is commonly called "The Republic of China." However, the tumultuous time period was a little more complex than just a single unbroken period of time. The Qing Dynasty was overthrown in 1911. The political party, Kuomintang (KMT), founded by Sun Yat-sen, won the elections in the first National Assembly of December 1911. Sun Yat-sen became president on January 1, 1912. Three months later he stepped down as China began to descend into civil war and he lacked the military strength to enforce any of the changes he sought. Between the years 1912 to 1925 three governments were set up and fell in the southern part of China, centered in Guangzhou.

In the northern part of China, Yuan Shikai, a general during the Qing Dynasty, attempted to set up his own dynasty. Yuan Shikai was officially elected president in 1913. On December

12, 1915 he declared himself emperor and the next year another revolution removed him from power.

Sun returned from exile and attempted once again to unify China. This time he worked with the Communist Party of China (CPC) and the Soviet Union to build a military to unify the country, On March 12, 1925 Sun died. For all of his efforts of attempting to unify China, Sun Yat-sen holds a special place in the Republic of China and the People's Republic of China as the Father of the Nation.

Chiang Kai-shek, who was a close ally of Sun Yat-sen, followed Sun's plan of using the military to unify China. In 1927 following a bloody attack against the CPC, Chiang Kai-shek was able to control much of China. Japan then invaded China in 1931 which marked the Second Sino-Japanese War, and lasted through World War II. The United States attempted to broker a peace between the Nationalist forces under Chiang Kai-shek of the KMT and Communist forces under Mao Zedong and the CPC. Ultimately civil war broke out between the two factions in 1947, lasting until the CPC won in 1949.

Communist China (1949 to present).

After the victory of the Communists over Chiang Kai-shek in 1949, Communist China made education compulsory (Ashmore, & Cao, 1997; Yang, et, al). The teaching style was changed to the Soviet model (Xiang, et al, 2009; Cheng & Manning, 2003; Perrolle & Reed, 1980), which stressed the universal education of everyone. However students who were performing at a higher level were given more advanced education opportunities. This was determined by compulsory universal testing.

One of the keystones of the Communist Chinese Party ideology was universal, compulsory education. The ultimate goal called for a well-rounded highly educated population.

The Chinese education system went through four stages of development under the Communists Party:

- The eight years after 1949, the Anti-Rightist Struggle
- In 1958, the Great Leap Forward, 1 million teachers were to be trained
- From 1966 to 1976, Cultural Revolution
- 1976 to present

Mao Zedong gave the central government authority over all education in China. In 1956 he implemented the Hundred Flowers Program, a policy of free speech that encouraged citizens to voice their opinions of the Communist Party and offer differing solutions to issues. It was a ruse, and in 1957 Mao implemented the Anti-Rightist Struggle to purge dissent. Mao famously stated that he had "enticed the snakes out of their caves." Some 300,000 people were targeted, accused of being rightists, many of them intellectuals, and punishments were doled out ranging from public, informal criticisms, to forced re-education labor, to in some cases even execution (Perrolle & Reed, 1980).

Mao Zedong (1949 to 1977).

Great Leap Forward (1958 to 1963).

In 1958 the CCP embarked on a massive program to move China into the communist stage of development. They referred to this program as the Great Leap Forward. The Great Leap Forward was destructive to education. The displacement of the population from cities to farms crippled any hopes of progress. During this period peasants were forced to give up private property and placed in communes of up to 5,000 families. To add to the chaos, in 1959 harvests produced less than expected, and starvation was common. Bad weather was cited as the problem; however, the real issue was the government forcing farmers off the land. Between 1959 and 1962

an estimated 20 and 50 million people died of starvation (Boshier & Huang, 2006; Friedman, 2008; Dikotter, 2010; Vardy & Vardy, 2007). This displacement of population was meant to help Mao reshape China in an image he chose. Once all potential opponents' power base was wiped out Mao ushered in the Cultural Revolution.

Cultural Revolution (1966-1976).

Throughout Chinese history education has been exalted. Education's status was distinguished only during the Cultural Revolution as the rise of bureaucratic elite prompted a decline in respect for educators. This period of political correctness destroyed the intellectual's status (Ashmore & Cao, 1997). The Great Leap Forward was an attempt to harness the vast labor force through central planning and collectivization to transform the Chinese agrarian economy into an industrial economy.

During the Cultural Revolution most schools in urban China were closed down for a period of six years. Most universities stopped normal operations for 11 years (Meng & Gregory, 2002). Some 12 million urban youth were sent to the underdeveloped countryside to reduce urban job market pressure and urban-rural inequality (Song, 2009).

According to Mao: "The phenomenon of our schools being dominated by bourgeois intellectuals could not be continued"(Song, 2009, p. 259).

For the first two to three years all schools were closed (Xiang, et al, 2009; Meng & Gregory, 2002). In 1968-69 schools were reopened but teachers were not allowed to follow the standard curriculum (Ashmore & Cao, 1997). Students were to learn from peasants how to work in the fields and factories. During this time little faculty or student research was tolerated. Research which was allowed related directly to specific production problems (Perrolle & Reed, 1980).

The objective of this new approach to education was to produce practically-minded and pragmatically-trained laborers. They were to be trained in social equity, especially in the terms of eliminating the division between city and countryside, elites and commoners, mental and physical labor. The grand vision was to have a classless communist society (Cheng & Manning, 2003).

Universities were closed from 1966 to 1970-71 (Perrolle & Reed, 1980; Xiang, et al, 2009). When universities were allowed to reopen, students were not selected by their academic performance but by political attitudes and family background. In this attempt to close the gap between manual and mental labor, workers, peasants and soldiers were heavily recruited. Two years of work were required at the middle school level either on the farm or factory. The work unit to which the student was assigned voted on who within their group could be sent to higher education (Perrolle & Reed, 1980). Those students who were able to go to the university received a substandard education, as the quality of the professors was questionable since many of the qualified professors who should have been teaching in the university were working in the countryside as part of their reeducation (Xiang, et al, 2009; Meng & Gregory, 2002; Perrolle & Reed, 1980).

During the Cultural Revolution universities' curricula were redesigned to meet the needs of production and were narrowly defined to address those needs. College curricula were shortened to three years from five years (Perrolle & Reed, 1980). Improvement in the quality of universities did not begin until 1977 when entrance examinations and recruiting based on academic merit was allowed once again (Meng & Gregory, 2002).

Deng Xiaoping (1977-1997).

After Mao's death Deng worked hard over the next two years to defeat the ultra-left rivals. He shared power with seven other senior members of the Communist Party of China. This became known as the Eight Great Eminent Officials or the Eight Elders. Deng was more pragmatic than Mao. He was instrumental in putting China on the path to industrialization after the Great Leap Forward. When Deng succeeded Mao he introduced reforms to help modernize China as well as attempt a more open relationship with the West. Education was the cornerstone of his reforms (Pond, 2011).

Deng attempted to reestablish the social status of teachers and students. Many of the educational practices that were stopped by Mao's reforms were reinstated (Ashmore & Cao, 1997; Meng & Gregory 2002). Deng established the "Three Orientations" for education: the needs for modernization, the world and the future. To accomplish this, universities were given a measure of autonomy in the ways they administered themselves (Wang, 2003). The value of education was seen as a way to strengthen the economy (Song, 2009; Ashmore & Cao, 1997).

Under Deng's leadership the government instituted nine years of compulsory education (Wang, 2003). The Ministry of Education also gave more authority to higher education in determining the curriculum, and changed entrance requirements, basing it on the students' scores not on political appointment (Wang, 2003; Song, 2009). Local governments were given basic administrative power in education to meet the unique needs of their students (Wang, 2003; Boshier & Huang, 2006). Advancement schools were set up at three levels (primary, junior secondary and senior secondary) to provide teachers with in-service training programs (Ashmore & Cao, 1997).

In 1986 the National People's Congress enacted the Compulsory Education Law. It required all parents to send their children to school for six years of primary and three years of lower secondary school. This law divided the nation into three areas: (a) cities, (b) economically developed areas on the coast and (c) inland. At the secondary level, the educational reforms induced stratification into four types of secondary schools:

- Keypoint middle school - schools that have concentrated resources for the purpose of addressing the needs of talented and gifted students
- Non-key general or ordinary middle schools.
- Specialized technical secondary schools.
- Vocational schools.

(Surowski, 2000)

In 1981, the political faction that consisted of the four who led the Cultural Revolution named the Gang of Four, were brought to trial. The four included Mao's third wife, Jiang Qing, Wang Hongwen, Zhang Chunqiao and Yao Wenyuan. The four had three things in common; prior to 1966 they were all relatively low ranking party members, they were in good standing with Mao and they targeted moderate government officials who were loyal to Deng Xiaoping. The trial was televised and played on radio for the purpose of letting the Chinese know a new era had begun (Teiwes & Sun, 2004; Pope, 1979).

Several teacher development programs were put in place during Deng's time. These were intended to increase teachers' social standing and make teaching more attractive financially. The program, Decision on the Reform of Education by the Central Committee of the Communist Party of China (CCCPC) and State Council (1985) improved pre-service teacher education and increased government support for teachers' preparation.

The recruitment of teachers was given high priority. In order to attract new teachers and keep experienced ones, a policy was set up to improve teachers' living conditions and social status. The pay of teachers was increased and insurance was expanded.

Another goal was to produce a qualified and stable work force of teachers with the majority of the teachers qualified within five years. The final goal called for teaching methods to be improved and modernized. To accomplish both of these goals provisions were established for in-service training through radio, television and correspondence courses. Teachers were encouraged to learn from each other and engage in professional lifelong learning (zhog shen xuexi) (Zhou & Reed, 2005).

The Compulsory Education Act National People's Congress (1986) set goals in the development of a trained teaching force to support nationwide compulsory nine-year basic education. A clear framework for teachers to achieve step-by-step, appropriate qualifications for their level of school guidelines was established. Finally all primary school teachers were required to be qualified by accredited normal schools while junior secondary teachers were to be qualified through colleges (Zhou & Reed, 2005).

The government established the goal of improving teachers' social status and working conditions. This would be accomplished in several ways. Local government would guarantee teachers' legal rights. A teacher evaluation system was set up to issue teacher certificates to those teachers who met the qualified teachers' standards. Finally those teachers who were identified as excellent were to be rewarded (Zhou & Reed, 2005).

The Suggestion on Strengthening and Developing Teacher Education State Education Commission (1986) set standards to better define the missions of teacher training institutions (normal schools, teacher's colleges, normal universities). This would be accomplished by

improvements in alternative training approaches for junior secondary teachers, including an Adult Self-Study Examination. Another goal was to reform admission requirements to initial teacher training in order to recruit more students into teaching. To recruit a better quality of teacher, provisions were to be set up by the government for favorable conditions for students on teacher education programs, such as free housing, free tuition and a living allowance. Finally, a revision was conducted of teacher education programs and expansion of higher education institutions for teacher education (Zhou & Reed, 2005).

The National Programs for Educational Reform and Development Central Committee of the Communist Party of China and State Council (1993) set goals that the governments at all levels would increase their financial input to improve teacher education and to conduct in-service training. The program wanted more stringent requirements for teachers. Teachers were required to demonstrate a higher level of professional ethics, subject knowledge and teaching competence. The program set a goal for the year 2000 that 95 percent of primary teachers should have teaching qualifications at normal school diploma level and 80 percent of junior secondary teachers at college of education level. Schools and local governments were required to establish strict assessment and reward systems for teachers. The programs called for schools to encourage the best secondary school graduates to enter teacher training institutions call for improvement of teachers' salaries, living conditions and prompt payment of salaries (Zhou & Reed, 2005).

In 1993 The Teachers Law, National People's Congress officially recognized teaching as a profession in China. The law also established the creation of a system to certify teachers. This would require teachers to pass a national teacher certification examination and also to demonstrate teaching competence. The average teacher salary would be raised to the average

salary of government employees. Teachers would also be given similar medical insurance as government employees. To encourage teachers to move to remote regions as well as ethnic areas, extra pay and assistance with housing was allocated (Zhou & Reed, 2005).

The Education Act National People's Congress (1995) mandated that the government implement a teacher certification system, develop recruitment systems and improve teachers' working and living conditions. Emphasis was placed on the need to increase the quality of the teaching force through initial training, in-service training and appraisal and reward systems (Zhou & Reed, 2005).

Education under the Leadership of Jiang Zemin (1997 to 2002).

Jiang Zemin's policy of, "developing the country by science and education" was introduced in 1997 and is still used to this day (Wang, 2003; Surowski, 2000). Reforms established to meet this goal have been credited with making education more cost effective, while at the same time raising the standards of education in China (Wang, 2003). Since 2000, China encouraged sixty-one cities to develop their education programs in their own ways (Boshier & Huang, 2006). However, the criteria by which those districts were measured was still based on the comprehensive examination. Teacher improvement plans instituted during Jiang's time as leader of China also included the Action Plan to Revitalize Education for the 21st Century, submitted by the Ministry of Education, December, 1998, and approved by the State Council (1999) January.

By 2000, the entire country was to have achieved universal nine-year compulsory education. Project Gardener Crossing into the New Century', one of three projects to improve the quality of the entire teaching force,' with particular stress laid on developing teachers' professional ethics', through in- service training for teachers within three years. The Action

Plan allocated 100 million RMB (about 12 million USD) to train 100,000 "backbone" (guguan) teachers to provide a strong professional core in schools. From this group of guguan teachers, 10,000 teachers were to be selected for training directly by the Ministry of Education. Each teacher was to receive at least 240 hours of training over three years, but in poor areas, at least 40 of these to be through face-to-face training. There was also a proposed upgrading of primary teachers' minimum standard of qualification to college diplomas and junior secondary teachers to normal university degree level by 2010. A contract system was proposed for all teachers and an emphasis on teacher evaluation newly trained teachers encouraged to teach in rural schools in poor areas for a period.

In 1999 the State Council released the Decisions on Deepening the Educational Reform and Improve Quality-Oriented Education in an All-Round Way program. This program called for an emphasis on higher teacher quality, in-service teacher training and computer training. This program also called for the reform of teacher education, and encouraged the establishment of comprehensive universities (zong he da xue) that included teacher education programs (Zhou & Reed, 2005).

It was found that from 1991 to 1996 the amount spent on education dropped just over four percent. Because of this drop in spending, previous programs did not reach their goals. The decision was made to increase spending to four percent of GNP, at the rate of one percent per year until the goal would be reached (World Education Forum, 2000).

This program had two versions, 1999a and 1999b. The second version was called, Suggestion on Restructuring the Teacher Education Institutions Ministry of Education and State Council. The second version recommended that institutions be restructured to improve the quality of teacher education. The number of higher education institutions for teacher

education was expanded and the number of normal schools that were changing their roles was to be reduced. The changing roles of Chinese colleges reflect the perceived need of those colleges. For example Normal schools in ethnic minority and rural areas were retained at their current number because the need for teachers in rural areas is still high. The need for teachers in large cities is less of a problem and those schools can focus on improving teaching as opposed to bringing in new teachers. The program also stated that all new teachers would have at least a college-level diploma by 2010 (Zhou & Reed, 2005).

In 2002 the 10th Five-Year Plan from the Ministry of education was released. The Suggestions on Teacher Education Reform and Development program called for changes in the university system, teacher requirements and recruitment. Normal universities were to increase their research capacity. Also several teacher colleges were upgraded to the title of Normal University. There was also to be an accreditation and evaluation system set up in the universities to help reform teacher education. Teachers in higher education institutions were required to have a minimum of a master's degree or senior academic title. In teacher training institutes and normal schools, teacher educators were to have earned a minimum of a bachelor's degree. The recruitment of highly qualified teachers was to be emphasized at all levels. Schools were to encourage their best senior secondary students to enter teacher education programs (Zhou & Reed, 2005).

Education Leadership under Hu Jintao (2002 to 2012).

Hu Jintao was the first leader of the Communist Party that had little in the way of revolutionary credentials. Representing a younger more progressive party line, he sought to improve China by the guiding socio-economic ideology of the Communist Party by molding it

into the learning party (Wen-Hsuan & Dean 2013). This is a humanist ideology that saw an increase in education spending to poor regions.

During Hu's time as leader teacher development plans included the New Action Plan to Revitalize Education, 2003-2007, submitted by the Ministry of Education, February, 2004, and approved by State Council and Ministry of Education (2004). This would place an emphasis to cultivate high-quality teacher education. A provision of an in-service training plan was attached to meet that goal. This plan called for pre-service and in-service education to be linked and continuous. Also the goal of promoting quality education through the new national curriculum prepared the way for drafting of documents on the 'Regulation of Teacher Education',

The Ministry of Education published, "Education Technology Capacity Building Plan for All Primary and Secondary Teachers" (2005) promoted the application of technology in instruction and called for building the teachers' education technology capacity in order to help close the gap which had developed between urban and rural schools.

In 2005, the Revision of the Compulsory Education Act was implemented by the National People's Congress. In it the goal was set that every teacher would be required to have recognized teaching qualifications. Also the central government reassigned titles for primary and secondary teachers. Everyone who went to primary and junior secondary teachers would now have the same professional degree regardless of those who would continue their education or just complete the nine years required by law. Educators were encouraged to talk to graduates from comprehensive universities to work as volunteers in rural schools. Finally the average salary of teachers was raised to the level of civil servants' average salary (Zhou & Reed, 2005).

In 2006, the 'Accreditation Standards of Teacher Education Institutions', 'Standards of Curriculum' and 'Quality Standards of Teacher Education', was to be implemented to address those projects that were still in the preparation stage and not yet fully implemented. These were set up as an advanced seminar for training backbone (gugan) teachers. These programs also called for rural school personnel management to be strengthened and full contract system for teachers, as well as urban teachers and other staff with teaching certificates to be encouraged to work in rural schools for a limited period before returning to urban school posts (Zhou & Reed, 2005).

In July of 2010 the Ministry of Education released the program, Outline of China's National Plan for Medium and Long-term education Reform and Development (2010-2020). Within the plan were many old ideas and several new ideas. However universal preschool was added to the nine year required education. Also no child would be allowed to drop out of school (Ministry of Education, 2010). There was also an increase in money spent on education, increasing from 14.9 percent of total fiscal expenditure in 2004 to 16.3 percent in 2008, higher than in most countries in the world (Wang, 2010). The Central Committee of the Communist Party of China (CPC) and the State Council issued a notice requiring local Party committees and governments to carefully implement the national education outline (Na & Jing, 2010).

Xi Jinping (2012 to Present).

At the Third Plenary Session of the 18th CPC Central Committee meeting the decision to push for education equality was finalized. Resources both material and financial would be made available to address inequalities in education. The emphasis will provide more resources to help rural areas catch up with the urban areas of China. This will be done using information technology.

Other areas addressed were college entrance exams, money given to key or non-key schools, and the deadline that all of these will be accomplished by 2020. Entrance exams will be changed as many students are avoiding taking the test by going overseas or (Tang, 2013). In order to create more fair distribution of resources to schools, educational authorities will no longer be allowed to classify schools as key or non-key institutions (China, 2013). A deadline was set so that these reforms would be completed by 2020 (Brunswick Group, 2013).

C. PURPOSE OF THE STUDY

This study conducted an examination of attitudes of high school teachers toward professional development in grades 9 through 12 in the city of Guangzhou in the People's Republic of China. Attention was directed at examining the attitude toward professional development in the Chinese education systems.

D. RESEARCH TOPICS

Teacher degrees in China have a minimum requirement of education level needed depending upon the grade level taught. At the elementary level only two years of teacher education are required before entering the classroom as a teacher, while a teacher at the middle level school needs a minimum of three years of higher education. A teacher at the high school level needs at least a four year degree. To teach at the university and college a minimum of a master's degree is required.

It is well understood across cultures that Chinese have a tradition of respecting their elders and it is less known that teachers are held in the same high esteem. This research will investigate this by examining the attitudes differences in: age, years of experience and gender.

Definitions.

Professional Development: for the purposes of this study the terms in-service and professional development are interchangeable. In many of the Chinese studies the terms are used indicating time in which teachers conduct various activities to develop their teaching skills.

High School: for the purpose of this study high school was defined as those schools that are from the grades of 9 to 12.

E. SIGNIFICANCE OF THE STUDY

This study investigates the attitudes and perceptions of the city of Guangzhou public school teachers of teacher in-service / professional development programs. Until recently staff professional development programs in China were centrally planned. Now China is attempting to allow more local control of education in the provinces and cities, but this has been a recent development (Chinese Embassy of Nepal, 2012; Xiaojiong, 2012; MOE, 2000).

This study will be a good reference for planners or designers of professional development. It will also assist in the understanding of principals and teachers attitudes toward professional development.

II. REVIEW OF THE LITERATURE

The literature review is composed of biographies and articles which address the topics of mentoring, professional development and teacher in-service to help build the literature base and understanding to address the following research questions:

- To what extent does age of the teacher, make a difference in their attitudes?
- To what extent will years of experience make a difference in attitudes of the teachers?
- To what extent will gender make a difference in attitudes of teachers?
- Does gender influence the attitude of teachers based on age of the teacher?
- Do years of experience influence the attitude of teachers based on the age of teachers?
- Does gender influence the attitude of teachers based on years of experience?

Charles Teddlie and Shujie Liu in "Examining Teacher Effectiveness Within Differentially Effective Primary Schools in the People's Republic of China," published in the journal *School Effectiveness and School Improvement*, 2008 December, noted most empirical research on China that pertains to school effectiveness is done by the United States, the United Kingdom, the Netherlands, Australia, Canada, Belgium and Cyprus. Their study also explained that China was relatively new to the methodological techniques used by the international community. This would explain why the published research is limited. Further, past research emphasis was not on the effectiveness of schools.

The study also examined if there was a relationship between effective schools and their locations. The effectiveness was broken down into two parts, more effective and less effective. The locations were broken down into two factors, urban and rural. Classroom observations were used in both settings and the factors which made them more effective or less effective were examined. The findings suggested that urban schools had more effective teachers. Also schools

that were designated as more effective had teachers who demonstrated teaching practices which utilized classroom time more efficiently and adapting teaching practices to fit the needs of each class.

A. THE EDUCATION SYSTEM

Ping Wen Kuo (1915), wrote The Chinese System of Public Education, stated that prior to 1911 China's education of its citizens was restricted to families who could afford the tuition for school or to hire private teachers for their sons. Only the nobility or a gifted young man who was sponsored by a noble family could afford the luxury of an education. By 1911 the Chinese government realized the importance of an educated population to compete with the Western powers. This began a movement to educate every child in China.

Several philosophies on education have ancient roots in China, and continue to dominate Chinese thought, and hence Chinese education policies, even today. Confucianism and Daoism are the two most important. These two philosophies are deeply ingrained in the society and are taught repeatedly as core principals. Every government test was based in part on the knowledge of these two philosophies.

When the Communists won control of mainland China in 1949, they continued the policy of universal education. To manage such a massive student population, the central government set up the Ministry of Education in October of 1949. The Ministry of Education oversees much of the education, but has given more authority to local governments to manage the administration of the schools.

Currently under the law, students need only attend nine years of school, which generally starts at age five and ends at age 14. Twelve years of school are offered through primary and

secondary education systems. According to the National Bureau of Statistics of China (2012), as of April 28, 2011, the number of people who finished their primary education was 358,764,003.

Wei Gu's, "New Horizons and Challenges in China's Public Schools for Parent Involvement" published in the journal *Education*, 2008, Summer, Gu noted China's government could be considered layered. The central government in Beijing has absolute power over all schools in China. The administration of the nation is divided into 34 administrative divisions. Of these, 32 administrative divisions; 23 provinces, five autonomous regions and four municipalities are subdivided into cities, districts, counties and townships. Within these 32 government administrative divisions, the Ministry of Education has branch offices. The two Special Administrative Regions, Hong Kong and Macau, are exempt from the Ministry of Education's jurisdiction.

Within this layered system, the education of China is regulated and managed. As can be seen from Table 3 and Table 4, the numbers of schools, teachers and students are large. The number of types of schools varies from time period to time period as the Ministry of Education reclassifies schools according to the current need.

Table 3

Number of Schools by Level and Type from 1978 to 2010

Type	1978	1988	1998	2002	2010
Regular Institutions of Higher Education	598	1,075	1,022	1,396	2,358
Secondary Schools	165,105	104,468	92,071	93,968	85,063#
Specialized Secondary Schools	2,760	4,022	4,109	2,953	5,658#
Technical Schools	1,714	2,957	3,234	2,523	3,008#
Teacher Training Schools	1,046	1,065	875	430	*
Regular Secondary Schools	162,345	91,492	77,888	80,067	85,063#
Senior Secondary Schools	49,215	16,524	13,948	15,406	28,584#
Junior Secondary Schools	113,130	74,968	63,940	64,661	56,479#
Vocational Schools	*	8,954	10,074	7,402	13,872#
Primary Schools	949,323	793,261	609,626	456,903	290,597#
Special Schools	292	577	1,535	1,540	1,706
Kindergartens	163,952	171,845	181,368	111,752	150,420#

note. Number of secondary schools since 1999 includes various technical schools and schools for juvenile delinquents; Retrieved Jan 20, 2005.

<http://www.stats.gov.cn/tjsj/ndsj/2011/indexeh.htm>; *indicates no data available; # the decrease of schools is largely due to reclassification of what meets the standards of the MOE.

Table 4

Number of Students Enrollment by Level and Type of School from 1978 to 2002

Type	1978	1988	1998	2002
Regular Institutions of Higher Education	85.6	206.6	340.9	903.4
Secondary Schools	6,637.2	5,246.1	7,340.7	9,415.2
Specialized Secondary Schools	88.9	205.2	498.1	456.4
Technical Schools	52.9	136.8	406.0	396.2
Teacher Training Schools	36.0	68.3	92.1	60.1
Regular Secondary Schools	6,548.3	4,761.5	6,301.0	8,287.9
Senior Secondary Schools	1,553.1	746.0	9,38.0	1,683.8
Junior Secondary Schools	4,995.2	4,015.5	5,363.0	6,604.1
Vocational Secondary Schools	*	279.4	541.6	511.5
Primary Schools	14,624.0	12,535.8	13,953.8	12,156.7
Special Schools	3.1	5.8	35.8	37.5
Kindergartens	787.7	1,854.5	2,403.0	2,036.0

note. * indicates no data available; Number of secondary schools since 1999 includes various technical schools and schools for juvenile delinquents; Numbers based on 10,000 people; *Data posted Jan 20, 2005.* <http://www.stats.gov.cn/tjsj/nds/2011/indexeh.htm>.

Kumkum Prabhakar, "Exploring Teacher Education Programs in China-Perspective of a Visiting Delegate," published in the journal *The Delta Kappa Gamma Bulletin*, 2007, Winter, noted two major differences in American and Chinese schools. When looking at the total number of teaching days in the American and Chinese school years, American schools have 180 days of teaching while Chinese schools have 200 days. Prabhakar also noticed that students in China

had approximately twice the homework as students in the United States. She reported that Chinese teachers are required to complete 250 hours of professional development within a five-year period. While the United States the number of professional development varies from state to state.

Education in China.

Rhea A. Ashmore and Zhen Cao (1997), Teacher Education in the People's Republic of China, publisher Phi Delta Kappa Education Foundation, noted the teachers' role in Chinese society and how it has changed. Historically those most respected by Chinese society are: the God of Heaven, the God of the Earth, the emperor, parents and teachers. Teachers were also considered the parents of the student. They would look after their studies, care and love them. Backing up this notion are common Chinese phrases such as: “Parents give one bones and flesh; the teacher gives one the soul” and “Under the sun, there is no other profession as sacred as that of the teacher p. 6.”

In the modern education system, there are four categories of in-service training for teachers in China. Each training level is dependent on the teacher's proficiency. The level of proficiency is based on their education level, their evaluation by their principal and the number of their students who continue their education in college.

Of the four categories, the first is a remedial assistance program designed for teachers who are not competent or have not completed a formal teacher program. Second is a program for teachers who are competent, but have not yet qualified in their formal preparation as teachers. This can be done either by taking courses at colleges, over the radio or television or correspondence courses. Both of these groups of teachers have yet to complete their teacher program at the college level. Third is a program for teachers who are considered effective.

Effective teachers are those who have been through the necessary education preparation. This allows the teachers to take courses in education theory and pursue further individual studies.

Fourth is a program for outstanding teachers. The type of training for this class of teacher allows for a teacher to master both theories of teaching and subject matter.

For the last two levels, the quality of teacher is measured by the principal, with standards based on the individual school district. Standards can be the number of students who are admitted to the university level or by how well the students do on the national exam. Teachers have a variety of professional development programs that they can pick from based on their rating. The type of training available is flexible and includes part-time study, self-study and short-term training. The type of professional development that is taken is based on the ability of the teacher as well as the availability of such training.

Teacher in-service is provided for teachers at three levels: the provincial institutions, the municipal supervisory center and the country supervisory office. All three are considered equal in quality.

The book has three sections, each focusing on a linear break down of the education system: past, present and future.

past. The social status of teachers was very important. Teachers were held in high regard in China's history. The father of Chinese education, Confucius established the principles by which the civilized man was to aspire. During the Cultural Revolution, respect for teachers declined. But in today's China, the development of human resources is seen as the way of making China great, and teachers are the ones seen as critical to accomplishing this.

The move to educate everyone occurred during the latter part of the Qing Dynasty (1644 to 1911). Liang Qichao, the Chinese preeminent modern education pioneer, was the first to

advocate the establishment of normal schools in China. Liang was joined by other influential education reformers, such as Kang Youwe, Yan Fu and Cai Yuanpei, in the call for mass education. In 1897 the Teachers Institute of Nanyang Academy was established in Shanghai. The following year the Beijing Capital Normal University was established.

In 1912 the Republic of China was established, and the new government promulgated two acts; the Teacher Education Act and the Normal School Regulations. These set the standards for schools, and for the first time recognized the rights of women in formal teacher training programs. In 1922 there were 275 normal schools with 38,277 students (6,724 were women).

present. Compulsory education is set at nine years. To help poor areas additional money was appropriated to provide incentives for teachers to move to rural areas. To counter uneven development between urban and rural regions, three different types of primary schools were established; full-time elementary, rural elementary and simple elementary. In full-time elementary the State Education Commission sets the teaching program and material. Each province, city and autonomous region may modify this to meet local needs. Rural elementary schools only teach Chinese, arithmetic, general knowledge and moral lessons. Simple elementary schools operate on alternative days, and half days to accommodate sparsely populated minority areas.

Teacher education is categorized in two areas, pre-service and in-service. Pre-service is the training a teacher candidate receives prior to entering the classroom. In-service is the training a teachers receives while teaching. There are four classifications for in-service: (a) remedial assistance programs, for teachers that have not finished a formal teaching program; (b) competent teacher programs, for teachers that have not qualified in their formal preparation as a teacher; (c) effective teachers programs, for those teachers that have completed their formal

teacher training and are eligible for studies in education theory and more content knowledge; and (d) outstanding teacher programs, in which advanced teachers take mastery level course work in theory and their subject matter.

All teachers regardless of their level of competency are required to participate in a half-day of weekly in-service training. In-service can also come in the form of a sabbatical so that the teacher may pursue full time study in an undergraduate program. Several policies that are seen as crucial by the Ministry of Education are to be enforced. These are the Compulsory Education Law or nine year compulsory education (NYCE), moral education in the tradition of Marxism-Leninism, minority education, and long-distance learning and higher education.

future. For the future of education in China, there were several areas of concern that would be addressed. Paramount among them were upgrading the status of teachers in society so that they are respected once again and increasing the effectiveness of teachers.

In September 1992, that State Commission of Education drafted the *Basic Requirement for the Training of the Professional Skills Required of Students Enrolled in Tertiary Teachers Training Instruction*. The skills required include standard spoken Chinese, competence in verbal and written expression, mastery of the three penmanships, proper use of instruction strategies and application of student advisement techniques.

(p.71)

Wages and status reform are to be given more substantial support as average wages of teachers is to be higher than that of workers of state owned enterprises. The problem of unqualified teachers must be addressed, and the authors called for a program to be established to address this need.

The Ministry of Education, through the Embassy of the People's Republic of China in Nepal (2012) attempted to address shortcomings in the education system. They implemented four post-Mao reforms. The first of these reforms, in 1980, gave local authorities power over the

administrators of the schools. In this way local government could tailor-design their schools to fit the local needs.

The second reform directed local governments to augment teaching materials to help ease the load of teachers. Reforms were implemented in the courses and teaching methods. The Ministry of Education reasoned that a lot of work was expected out of the teachers, so this change was made to help with some of the workload.

The third reform attempted to address the education system's high scoring students who had not been seen as doing well in problem solving. To this end examination-oriented education was emphasized less in favor of quality-oriented education. Students with more resources tend to perform better. Leaving schools with inadequate access to resources left the students at a disadvantage and underrepresented at the higher levels of education.

The fourth reform addressed the basic education level. It changed the requirements of students from a 6-3-3 to a 5-4-3 format. This means the student would be in primary school for five years, junior secondary for four years and senior secondary for three years. By taking a year from the basic and adding one to the junior secondary, students are able to pick their own classes a year earlier, as the classes in junior secondary are departmentalized with teachers specializing in an area of study. As of 1997 some schools still offered the 6-3-3 format.

Nepal is situated between India and China and plays an important part in China's international diplomacy. China and India are the regional powers and both vie for influence in Nepal. India is Nepal's largest trading partner, whereas China has offered loans and gifts to help develop Nepal. The embassy in Nepal is China's largest this indicates the support that China has for Nepal.

Xiufang Wang (2003), Education in China Since 1976, publisher McFarland & Company, Inc., gives a detailed description of the bureaucracy that is directly and indirectly involved in education. The book is divided into three sections: (a) the Chinese education system; (b) Chinese education of various types at different levels; and (c) the internationalization of Chinese education.

The Chinese education system. Wang describes the abrupt changes in the education system. The first phase modeled the Soviet style of focusing on the best and brightest students. The second phase was based on Mao's decision that everyone should be treated the same. The smartest were expected to sacrifice their education so that everyone could learn equally. In the third phase teachers were sent to work in the fields and factories and many schools while workers, farmers and soldiers would teach.

The school year is divided into two semesters. The school year for primary education is comprised of thirty-eight weeks, with one week held for unspecified reasons. For junior secondary schools, classes are held for thirty-nine weeks. Senior secondary schools have forty weeks of instruction.

In 1993 schools in China implemented a two category course of instruction. The first is mandated by the providential and the other is regulated by local governments. This was to ensure a balanced system of development with the central government establishing the broader scope and the local governments would be able to address their needs in their unique area.

Chinese education of various types at different levels. The second part of the book describes the horizontal and vertical levels of education in China. The horizontal level is the various types of education at each level; for example, distance learning, adult education, special education. The vertical level consists of the various grade levels, preschool to post graduate.

Wang pointed out this combination of horizontal and vertical levels of reforms has allowed the entrance examination for junior secondary to be cancelled in seventy percent of Chinese cities.

This was in part to ease the stress of the students who already have a heavy class load.

The lack of funding within higher education is most noticeable in the limited number of higher education facilities. Colleges are not being built fast enough to keep up with the demand as the numbers of students grows. Students are being increasingly frustrated by the lack of space in the universities. Libraries contain an insufficient number of books for research.

This lack of space within universities limits the number of students accepted. This is due in part to the heavy emphasis on the basic schools and the emphasis to produce college-bound students. After graduating from high school, students compete for limited enrollment in colleges (see Table 5). There is intense pressure for students to get admitted into a good university.

Students work very hard to earn a seat at a university, of those students who apply, only about two percent are accepted.

Within the university system, there is a lack of accountability on the part of the student. Once a student is admitted to a university, graduation is all but guaranteed. Students' grades do not matter in many of the high institutions and attrition is less than 0.1 percent. To remove a student is almost unheard of in China. Reforms within the education system that have focused on lightening the workload of students at the primary school through secondary school levels have carried over to the college level. By the end of 1999 there were 1,071 regular higher education institutes in China. This meant there was 4,134,200 seats available for students.

The third part of the book deals with China's international cooperation and exchanges with other countries. Wang noted that the Chinese higher education system has been all but independent of the outside world. There was little contact with the social and economic world

around them. Financial backing was limited by a conservative government reluctant to invest too much in its colleges. This left universities with inadequate libraries, limited computer access for faculty and students, a lack of research labs to conduct research and a weak faculty in general.

The university system was criticized for being isolated and not responding to the needs of the nation, businesses or communities. The Ministry of Education loosened its dominance over college level education. This has allowed local governments, business leaders and communities a greater role in shaping the direction universities take.

Table 5

Seats Available in Colleges for the year 2010

College Type	Years to complete	Number of
	Degree	Seats Available
Junior Colleges	2 to 3 years	*
Bachelor Programs	4 years	*
Masters Programs	2 or 3 years	72,300 seats
Doctoral Programs	3 years	19,900 seats

*note.** no information available; (ChinaToday, 2010).

Planning.

The "5-Year Plans" that the Ministry of Education uses are currently in their 11th cycle. These plans are designed to address a host of concerns that the Ministry of Education considers the most pressing. However, the plans are often unmanageable, and, in the past, could not address the complexities that occur in a diverse and large system such as China's. Resources were not set aside in appropriate amounts to ensure success, and goals were unreasonable and often not based on the reality of the funds available.

The drafting of these plans began a few years earlier. For example, the Outline of China's National Plan for Medium and Long-term Education Reform and Development (2010-2020) began in August of 2008 (Na & Jing, 2010). Numerous ideas were collected, and prior to its release in July, 2010, it had gone through forty revisions.

In 1950 the curricular standards for primary schools were established. They were revised in 1956, 1963, 1978 and 1986 to stay current with the revisions in curriculum. Conservative standards for primary and secondary schools were formed. During that time the People's

Education Press also published eight sets of textbooks which complemented the new standards as they were released.

Current teacher development in China

Government policy on education has changed several times since 1949. In 1980 there were two major changes in the professional development of teachers. First, teachers were given decision-making abilities in their classrooms. That is they could decide how they could teach the curriculum. Second, local officials were given greater freedom in deciding what direction their schools needed to take in order to meet their students' and communities' needs.

The Chinese Embassy of Nepal released that the Ministry of Education's "Decision on the Reform of the Education System" (1985), which was based on the Fourth National Conference on Teacher Education in 1980. This document stressed that teacher education should be regarded as a key strategic measure in developing education.

Teacher In-Service programs in use in the Chinese education system

Teacher In-Service programs are made up of two parts; mentoring and professional development. Mentoring has been a long honored way of helping new teachers by placing them under the care of an experienced teacher. When compared to industrial nations, the Chinese are relatively new comers to the field of professional development for their teachers. However, they have been devoted a lot of resources both money and academically to cope with political and social demands of producing better-prepared students.

Xiaomei Song and Liying Cheng, "Investigating Primary English Immersion Teachers in China: Background, Instructional Contexts, Professional Development and Perceptions", published in the journal *Asia-Pacific Journal of Teacher Education*, 2011, May. They identified the limited research done regarding immersion teachers on several points: educational

background, instructional contexts, professional development and their perceptions of English immersion. The authors found that the majority of immersion teachers were under the age of 30, and with five or fewer years of teaching experience. These teachers were typically teaching an average of 50 students per class, with an average of 5.8 hours per week in the classroom. Less than half of these teachers had a bachelor's degree or a higher degree. The teachers reported using communicative, interactive and learner-centered approaches in their teaching. Immersion teachers lacked opportunities to engage in authentic two-way interaction for professional development. In-service and ongoing program development was perceived as important areas which needed more study if China's immersion programs were to improve.

Wu Hua, "Prospects of Private Education in China", published in the journal *Chinese Education and Society*, 2009, November – December. Hua noted that the number of private schools is rapidly increasing. From 2002 the number of private schools at all levels (not private training institutions) was 61,200. In 2006 the number rose to 93,200, an increase of 52 percent. During this same time period, the number of students increased from 11.16 million to 23.13 million a 107 percent increase.

In 2010, the Ministry of Education released the "Outline of China's National Plan for Medium and Long-term Education Reform and Development 2010-2020". The goal of this plan is to create a country rich in human resources. Five major points were outlined; (a) the building a vast contingent of quality teachers, (b) promoting professional ethics among teachers, (c) raising teachers' professional efficiency, (d) heightening teachers' social status, salaries, benefits and (e) streamlining administration over teachers. First, building a vast contingent of quality teachers, high quality education requires good teachers. The status of teachers is to be improved, their rights safeguarded, financial compensation should be relatively high all of which to ensure that

teaching is a respectable profession. It was determined that in doing this that status of teachers would increase in society.

The second objective was the promotion of professional ethics among teachers. The training of teachers in work ethic with the goal of enhancing their sense of responsibility as well as helping teachers to learn how to care for their students. Professional development courses would be implemented for teachers will be taught morals of self-respect and self-discipline. A complete package of steps shall be implemented to help foster academic work ethics and punish academic misconduct.

Third, raising teachers' professional efficiency, the composition of teachers will be optimized. To help cultivate and train teachers, the system shall be improved. Key teachers will be trained in advanced methods and financial assistance shall be provided for projects.

Compensation will be set up to help bring more teachers into rural areas. All teachers will undergo training every five years. The reform of teacher education shall be expanded to make a more flexible education system.

Fourth, heightening teachers' social status, salaries, benefits. To attract quality teachers; working learning and living conditions will be made better. Preferential housing needs to be researched. Medical and retirement insurances and social security policies will be improved.

Fifth, streamlining administration over teachers. The teacher permit system will be remade and enforced. Policies in both rural and urban schools would gradually be standardized. Oversight over administration policies shall be more closely watched.

Conditions in schools should be made favorable for teachers and principals to encourage innovative educational practices. Those teachers that excel will be commended, given honorary titles and publicly recognized for their good work. Mentoring

Jian Wang and Lynn Paine, "Mentoring as Assisted Performance: A Pair of Chinese Teachers Working Together" published in the *Elementary School Journal*, 2001, November. They recorded substantial variations from country to country in the frequency of interactions between mentor and mentee per week (number of times) during their induction phase as first year teachers. They noted that most of these interactions in China and the United Kingdom took place in an office, while in the United States most mentoring occurred in classrooms.

John Chi-kin Lee & Shengyao Feng, "Mentoring Support and the Professional Development of Beginning Teachers: A Chinese Perspective" published in the journal *Mentoring & Tutoring*, 2007, August, noted that in Chinese classrooms at any given time, it is common for any teacher to observe a class of any other teacher. By this constant informal observation teachers are able to receive feedback continuously as opposed to a school administrator's formal observation. This practice has been engrained within the educational system to the extent that students in the classroom and the teacher being observed scarcely take note of it.

In a teacher's first year a number of skills need to be acquired. This can be achieved through mentoring. The mentor helps the new teacher in the disciplining of students, motivating students, working with individual differences of students, assessing students' work, effectively communicating with parents, organizing class work, as well as securing supplies for the classroom.

Professional development, or in-service, as it is called in China, consists of several different options. These can range from attending courses after school hours either in the school itself or at another facility, such as a college classroom. There are also correspondence courses that can be taken via mail, radio, internet and television.

Both mentoring and professional development are important in teacher education, as well as in continuing development, and are seen as ways to address the needs of preparing students for their future in the workplace and society.

Beginning teachers, especially first-year teachers, often encounter a reality shock as they go through a transition from a relatively sheltered pre-service teacher education program to the classroom setting, where they are accountable for their professional work. Mentoring in the education process has been formally established in China for over two decades. In 1986, the State of Education Commission senior secondary school teachers were required to mentor new teachers. This was expanded by the same commission in 1994 to primary (elementary) schools.

In a teacher's first year, an experienced teacher called a mentor is assigned to assist a new teacher, called the mentee. The mentor provides the mentee a wide range of assistance to aid in the transition from the pre-service teacher education program to being a teacher. This assistance includes conducting orientation arrangements, observing lessons, providing feedback and acting as liaison with other staff and external personnel.

The study examined three schools in Guangzhou, in which eight mentoring teachers and their eight mentee teachers were selected. The study focused on provision of information, mutual lesson observation, collaborative lesson preparation and discussion in the office. Provision of information refers mainly to the supply of reference materials and occasionally to the sharing of the mentoring teachers' own teaching plans with mentees. Reference materials are particularly useful for first-year teachers when those materials may not be available on the market, and beginning teachers may not be able to differentiate between useful and less useful materials for teaching. Two mentoring teachers were willing to provide first-year teachers with their own lesson plans for personal reference. Mentoring teachers' lesson plans were often seen as private

and confidential documents. Mutual lesson observation was the main form of mentoring support in the three case-study schools. Each school had a stipulation that each teacher should be observed a certain number of times each term. The number of times observations occurred ranged from 7 to 86 lessons per term.

There were two main types of mutual lesson observation: observed demonstration and supervision. In the first one, demonstration lessons, the lesson was conducted by mentors. After the lesson, mentor and mentee seldom exchanged views or analyzed the strengths and limitations of the observed lessons. In supervision lessons there were more interactions between the mentor and mentee in supervision lessons, when mentors observed the mentee. Such interactions, though short in duration, tended to focus on the weaknesses of the mentees.

Collaborative lesson preparation is another context where mentor–mentee interactions take place. One school had a collaborative lesson, which last an hour and a half, every week. The other two schools alternated weeks. In two of the schools the mentor was required to sign each of the mentee's teaching plans. Lee and Feng found that in most cases the mentor and mentee would discuss and agree on the pedagogical arrangement and content of a teaching unit.

Discussion in the office occurred in all three schools. Two of the schools' teachers were assigned offices based on grade level, while at the third school, offices were assigned by subject. In each situation, mentors and mentees were in the same office.

In-Service.

Andrew Marton, "The Cultural Politics of Curricular Reform in China: A Case Study of Geographical Education in Shanghai" published in the *Journal of Contemporary China*, 2006, May, noted that in the struggle to improve teachers' skills through professional development, many obstacles had to be overcome. The strict upbringing of Chinese children, the rote system of

learning and a central education system which has dictated policy for decades combine for an education system that will be struggling for years to come. Because of these reasons, each time education reform occurs; professional development of teachers is especially affected, as teachers struggle to comply with the new rules and guidelines. The full extent can only be fully understood by examining the change which teachers implement at the local-level practice.

Han Jun and Wang Zhuzhu, "Capability Building in Educational Technology for Teachers in China," published in the *British Journal of Educational Technology*, 2005, Nov-Dec, described professional development according to new guidelines as set by the National Center for Education Technology (NCET). The NCET is an institution associated with the MOE and responsible for technology-related innovations in schools. This organization is in charge of implementing the project at the state level and is responsible for organizing experts. The plan is to develop training guidelines, textbooks and matching multimedia materials, training platforms and a formative assessment system both suitable for intranet and internet, and for state-level trainers' training. The provincial administrations, provincial centers for education technology or other teachers' training institutions are in charge of local project implementation.

The project also determined that training for teaching personnel should be divided into primary, intermediate and advanced levels. Training for technical support personnel or managing personnel was divided into primary and advanced levels. The primary and intermediate training for the teaching personnel were implemented first. Others will be executed in the following years.

The training of the project is very different from past teachers' training programs and has the following features:

- Real task driven: all trainees must fulfill an instruction design for applying ICT into a real classroom teaching lesson and matching multimedia teaching materials in 50 hours of training.
- Emphasis on participation, activities and interactive activities: this can lower the difficulties of understanding the theories in the field of education technology and applying what was learned in the project into the following teaching practice.
- A highlight on blending learning: this is done by integrating theories, methodology and technology, as well as integrating traditional learning and web-based learning; integrating self-learning, collaborative learning and integrating trainees' experiences by review.
- A highlight on case studies: this is done by providing rich diverse cases via disks affiliated with the textbooks and the Web.

Xiufang Wang (2003), Education in China Since 1976, described the Ministry of Education's creation of five goals for education reform in the 21st century. The first four goals dealt with administrative functions while the fifth addressed teaching issues. The first goal of the MOE was to facilitate the pooling of educational delivery resources by promoting the development of non-government schools, with the possibility of public institutions being handed over to either non-government organizations or individual citizens. The second goal is to reform the management system of higher education institutions. The third goal is to further education. The fourth goal is to modernize education at the level of daily operations, allowing schools to make their own decisions for the population they serve. The fifth goal, which directly addressed teachers, would be accomplished by reinforcing basic skills and theories while also allowing for more study time for contemporary material for science, technology and other modern culture.

Yuzhen Xu, "School-based Teacher Development Through a School University Collaborative Project: A Case Study of a Recent Initiative in China," published in the *Journal of Curriculum Studies*, 2009, pointed out that the Chinese Ministry of Education in 2001 issued a blueprint for national curriculum reform. As part of this initiative, the National Advanced

Administration Academy was created in Daxing, a district of Beijing. However, this top-down approach has led to many complaints from teachers: "The more we are trained the less we could teach in the classroom." Such complaints are not viewed negatively. They reflect, on the part of the teacher, outdated concepts of education and that those who complain need more training. Leaders in China realize this and have taken steps to introduce more flexibility so that students can be allowed to express creativity. It is becoming widely agreed upon that any reform requires teachers to be actively involved. Without such involvement and backing, any education reform will be purely cosmetic.

Some university professors push for a bottom-up approach. One such project is called "Collaborative action research in school-based curriculum development in junior middle schools." This project has university professors and teachers working together to reform the curriculum. The project helps teachers reflect on what they teach and on ways to improve their teaching skills.

Mingren Zhao, "Teachers' Professional Development from the Perspective of Teaching Reflections Levels", published in the journal *Chinese Education and Society*, 2012, July-August, analyzed written reflections of four teachers. This examined those teachers who had experienced advanced professional development and those that had experienced average professional development. The findings were that those teachers who had advanced professional development tended to reflect on their teaching in a practical and critical manner. The study indicated that those teachers who had average professional development tended to engage in technical reflection.

Chinese Tradition and Culture of Education.

Philip J. Ivanhoe & Bryan W. Van Norden (2005), Readings in Classical Chinese Philosophy studied China's culture and how it affects education. China's education system has been influenced by Confucianism for centuries. To this day it is accepted that the teacher is the expert who is not to be questioned. Teachers provide the knowledge and the student is to accept it. To ask a question of the teacher is to challenge his or her authority. Chinese culture limits creative thinking. Memorization of the text and the reproduction of facts are valued and show in standardized testing, while creativity is discouraged from childhood.

China is generally conservative and staying true to traditions is considered critical. Such tradition embraces society and family as the greater good, with the individual making sacrifices for the greater good. These influences can be seen in several Chinese sayings that reflect conformity with the social norm. "The bird that stands out will be shot first," and "the taller tree will catch the wind first," exemplify the culture of not taking a risk and playing it safe. Such a society frowns upon anyone who stands out in any way. In the modern world, China is attempting to wrestle with a way to maintain tradition while preparing to open up schools for creative teachers.

Wang Zhe, "A Contrastive Study of Chinese & Western Learner Autonomy" published in the journal *US-China Foreign Language*, 2009, December, described how the central government is moving to a policy of teacher decentralization. Wang suggested it an examination of adult learning related to teacher development would be in order. Wang examined the attitudes of teachers toward learner autonomy. Of those teachers surveyed on the question of "Learner autonomy means that learners should be able to learn in isolation without help provided by

others,” strongly disagree and disagree were 85.2 percent. The study found that most teachers felt that the current assessment process was a hindrance to learner autonomy.

Liping Ma (1999), Knowing and Teaching Elementary Mathematics: Teachers' Understanding Fundamental Mathematics in China and the United States, identified that teachers in China generally use three types of materials to teach: a teaching and learning framework (jiaoxue dagang), textbooks (keben) and a teacher's manual (beike fudao cailiao). Teaching materials are studied intensively and carefully because textbooks in China present the essence of the lesson; teachers are expected to have a careful and critical knowledge of the textbooks.

Ma also explained that Chinese math teachers only have 11 to 12 years of education. However, the math teachers have a solid understanding of the subject material. United States math teachers have 16 years or more of education, much of which is more theoretical in nature. It is this practical teacher knowledge that gives Chinese math teachers an edge when compared to the United States.

Mingren Zhao, "Teachers' Professional Development from the Perspective of Teaching Reflection Levels," conducted a published in the journal *Chinese Education and Society*, 2012, July-August, the case study involved four teachers who had advanced professional development. It was found that they tended to engage in practical and critical reflection where as those who participated in average professional development primarily engaged in technical reflection. The study also found that those teachers who engaged in technical reflection experienced externally controlled professional development. Those who engaged in practical reflection experience conservative, inner-growth professional development. Those who engaged in critical reflection experienced transcending, inner-growth professional development

Jocelyn Wong, "Control and Professional Development: Are Teachers Being Deskilled or Reskilled within the Context of Decentralization?" published in the journal *Educational Studies*, 2006, March, noted that teachers were unlikely to develop their critical vernacular, nor act as a critical agent during the teaching process. Teachers were not encouraged to have creative and transformative behavior. Wong used the terms 'deskilling' and 'reskilling' of teachers. Teachers tend to equip themselves with a wide range of new knowledge and skills that will improve their teaching abilities, thus improving their teaching effectiveness and the achievements of their students.

Wong explains that learning has been done through imposed reforms. Starting in the mid-1990s, there have been two main curricular and pedagogical reforms in Chinese education, namely 'quality education' (suzhiyiaoyu) and 'multi-media teaching' (duomeitiyiaoyue). These reforms are the response to the new educational demands from the state and the market.

Jocelyn Wong, "Searching for Good Practice in Teaching: A Comparison of Two Subject-based Professional Learning Communities in a Secondary School in Shanghai," published in the journal *Compare*, 2010, September, examined professional learning communities, the study identified two reasons given for the importance of professional learning communities to teacher learning. First, teachers are able to share learning resources. This creates a platform for teachers to access and share educational material that augment their pedagogical skills. Second, community members create a shared language and knowledge about their practice and commit to a high quality of intellectual work for their students. This helps shift the focus of teachers from a particular topic to an agenda that better serves the school.

Motivational Orientations

Yuzhen Xu, "School-based Teacher Development Through a School University Collaborative Project: A Case Study of a Recent Initiative in China" published in the *Journal of Curriculum Studies*, 2009, described a bottom-up project that was designed for teachers to reflect critically on their methods of teaching. With this reflection-in-action, it was hoped that when teachers observe the way in which they teach, they would be able to see problems in what they were doing and seek out professional development, which would increase their effectiveness.

Fang Yin and Hui Yin, "The External Path of Professional Development for Old Teachers Under the New Curriculum Reform in China", published in the journal *Cross-Cultural Communication*, 2012, noted that older teachers might need external support to continue professional development. One way suggested was helping or encouraging the older teachers to maintain their body and mind. The researchers recommended that schools push for the older teachers to have regular checkups and participate in mild athletic activities such as singing and fun games. For the second it was recommended that schools give the older teachers more rights in deciding their professional development.

Yin and Yin also suggested that to help older teachers with professional development was giving them a more active role in professional development. The researchers pointed out older teachers became more like spectators during training. They also noted that much of the support seemed to be going to younger teachers as they had more years to give back to the school. The researchers stated that the teacher training programs such as; School-based Training, Backbone Teachers Training, Leading Teacher Training, Beginning Teacher Training were all focused on those teachers who were under the age of 45. Last, the authors suggested that in order for

teachers' professional development to be successful, there needs to be a teacher culture which nourishes and cultivates all the teachers.

Teacher attitudes toward teacher In-Service.

Pauline Sung-Chan & Angelina Yuen-Tsang, "Bridging the Theory-Practice gap in Social Work Education: A Reflection on an Action Research in China," published in the journal *Social Work Education*, 2008, February, found that action research has increasingly been recognized as a viable approach to dealing with the problem of the theory-practice gap. Many researchers in human services such as education, organizational development, nursing, occupational therapy and social work have adopted the action research approach in their work because it enables practitioners to integrate existing theories with practice and to generate new knowledge from direct practice.

Peter Bodycott, Allan Walker and John Lee Chi Kin, "More Than Heroes and Villains: Pre-service Teacher Beliefs about Principals" published in the journal *Educational Research*, 2001, Spring, the relationship of pre service teachers and principals. They described how it was argued that teachers were willing to talk about positive and negative aspects of administration leadership. Also that the new teachers enter the profession with preconceived concepts of the profession. The constructs most frequently used were authority vs. democratic management, flexible vs. rigid leadership style, participatory vs. removed and motivated vs. disinterested.

Jocelyn Wong and Amy Tsui, "How Do Teachers View the Effects of School-based In-service Learning Activities? A Case Study in China," published in the *Journal of Education for Teaching*, 2007, November, examined recent educational changes in China. These changes include the decentralization policy and the marketization of education, introduced concepts such as performativity, competition and effectiveness to the education sector and described how they

have become part of the educational lexicon. Such policy shifts force more local participation in teacher education programs. Schools are now identified as the prime site for offering relevant professional learning activities to teachers. However, research on professional development of teachers in China has not devoted significant attention to the voices of teachers. The professional knowledge of teachers, in this context, is developed by teachers themselves rather than imposed by researchers outside the school. In this way teachers' joint efforts generate new knowledge of practice and their mutual support of professional growth aids in their teaching.

The caveat is if you just say "Wong and Tsui stated that most researchers agree that teachers' learning should be situated in an environment where teachers teach; in other words, teachers' professional development should be embedded in the daily practice of teachers. Schools can provide occasions for teachers to exchange and to foster their working effectiveness through reflection and professional dialogues. Also, they wrote that the research on professional development of teachers has not involved the teachers.

Bernadette Robinson and Wenwu Yi, "Building for the future by expatiating the past: High drama from the summit of China's Learning Mountain", published in the journal *International Journal of Lifelong Education*, 2008, November, in which they noted examined qualified teachers. China had 10.36 million primary and secondary school teachers and wide regional variations in economic and development levels. Between 1985 and 2002, the percentage of qualified teachers in primary and junior secondary schools increased by 36.79 percent and 62.78 percent, respectively. By 2002, 97.79 percent of primary teachers and 90.28 percent of junior secondary teachers had qualifications. In 2005, the qualification rates of teachers in primary and junior secondary schools were 98.62 percent and 95.22 percent. Fewer than 20

percent of primary schools and 36 percent of junior secondary schools in China are in urban areas.

Rebecca Hun Ping Cheung, "Teaching for Creativity: Examining the Beliefs of Early Childhood Teachers and their Influence on Teaching Practices", published in the *Australasian Journal of Early Childhood*, 2012, September, examined implications for professional development programs and the implementation of creativity reform. The study revealed both congruity and inconsistencies between teachers' stated beliefs and their classroom practice. Their actual practices were a function of many influences rather than just their beliefs.

The study aimed to examine the relationship between early childhood teachers' beliefs about good creative practices and their actual instructional practices; namely, characteristics of a creative teacher, environmental settings important for developing creativity, teaching strategies used for developing creativity and criteria for judging creativity in children. Cheung suggested that in order to stimulate in Chinese classrooms, three things could be done. First, students could be given some knowledge as a foundation before being asked to do the creative tasks. Second, students would work in relationship with others. Third, students could be challenged with tasks with priority given to approaches that allowed students to perceive the learning as fun.

III METHODOLOGY

This study will use statistical evaluations to determine if there are statistically significant differences between groups based on gender, age of participant and years of teaching experience in an attempt to answer the following research questions:

- To what extent does age of the teacher, make a difference in their attitudes?
- To what extent will years of experience make a difference in attitudes of the teachers?
- To what extent will gender make a difference in attitudes of teachers?
- Does gender influence the attitude of teachers based on age of the teacher?
- Do years of experience influence the attitude of teachers based on the age of teachers?
- Does gender influence the attitude of teachers based on years of experience?

A. LIMITATIONS OF STUDY

The survey was limited to the high schools of the city of Guangzhou. The researcher was not present during the administration of the surveys and relied on the administrators in the schools selected. The original survey, *Attitudes toward In-service Education Scale*, was first created in 1981 by Cecil Trueblood and Kathleen Flanagan Hudson (Trueblood, 1986). Kathryn E. H. Race modified the survey to reflect the research of her study, the instrument was called, *Development of an Attitude Survey to Gauge Teacher Attitudes toward Instructional Strategies and Classroom Pedagogy in Support of Larger Outcomes-based Evaluation Effort* (Race, 2001). Dr Races' survey was then translated in Mandarin by Liao and found to have a reliability coefficient of 0.93 when administered in Taiwan (Liao, 2003). Dr Kathleen Flanagan Hudson was contacted and permission was given to use the study. The sample applies only to those teachers in the schools of the city of Guangzhou. The title was changed in the original survey

study to reflect modifications in an attempt to address cultural differences. Data were collected through the use of these survey questions. The surveys were self-reported.

Definitions.

Professional Development: for the purposes of this study the terms in-service and professional development are interchangeable. In many of the Chinese studies the terms are used indicating time in which teachers conduct various activities to develop their teaching skills.

High School: for the purpose of this study high school was defined as those schools that are from the grades of 9 to 12.

Hypotheses.

1) Research Hypothesis

There is no significant difference in the attitudes female teachers have toward professional development than those of male teachers.

2) Research Hypothesis

There is no significant difference in the attitudes of teachers toward professional development based on years of experience.

3) Research Hypothesis

There is no significant difference in the attitudes of teachers toward professional development based on the age of teacher.

Research Questions.

The study would be guided by the following research questions:

Research Question 1: To what extent does age of the teacher, make a difference in their attitudes?

Research Question 2: To what extent will years of experience make a difference in attitudes of the teachers?

Research Question 3: To what extent will gender make a difference in attitudes of teachers?

Research Question 4: Does gender influence the attitude of teachers based on age of the teacher?

Research Question 5: Do years of experience influence the attitude of teachers based on the age of teachers?

Research Question 6: Does gender influence the attitude of teachers based on years of experience?

B. INSTRUMENTATION

A quantitative methods approach was used in this study. The instrument used was *Attitude Toward In-service Scale*, created by Dr. Kathleen Flanagan-Hudson (Trueblood, 1986).

Dr. Flanagan-Hudson was contacted for permission to use the survey; permission was granted. The surveys were administered over the internet by the University of Arkansas' Qualtrics Survey Research Suite to school administrators. Once downloaded the survey was then disseminated to the teachers.

The instrument consisted of the 25 in-service questions and 6 demographic questions used in the original instrument. The instrument was however modified from its original English version to address teachers in the Mandarin language.

C. DATA

For this study, a sample of 479 urban in-service educators were surveyed. The instrument retained Dr. Flanagan-Hudson's original five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to obtain results.

D. DEMOGRAPHICS

The data were gathered from high school teachers in Guangzhou, China. School administrators who agreed to participate in the study were asked to select the third teacher on an alphabetized list of those teachers employed if they would volunteer to participate in an online survey, "Attitude toward Staff Development Programs Scale", by Dr. Kathleen Flanagan Hudson. Those who agreed were told that at any time they could stop taking the survey. Teachers were able to take the survey via the University of Arkansas' website.

Of those selected for participation in the survey, 479 completed the survey and were used for this study. Those with incomplete survey were not calculated in the analysis. Question 24 was omitted from the analysis as it appears there may have been some cultural bias or misunderstanding as 150 participants elected not to answer that question. Question 24 stated "I am interested in participating in staff development programs because I feel they help me to improve my status at the school level." It was thought that this statement could be interpreted as wanting to advance and take their supervisor's position. While this can be seen as a good thing in some cultures, as the administrators have someone to groom for promotion in the Chinese culture it apparently meant that the teacher may be interested in advancing in rank and the administrator might be threatened by this.

Demographic data collected and utilized in the study consisted of gender, age of respondent and years of teaching experience. Responses are displayed in Tables 6-8 below.

Table 6

Breakdown of Demographics by Age

Level of Age	n	Percent
1	61	13.12
2	160	34.41
3	136	29.25
4	108	23.23

note. n=465; Rounded to nearest hundredth.

Participants responded to age as one of four categories; 30 years or less, 31-40 years, 41-50 years and 51 years or more. Most of the participants for this study (34.03 percent) were between the ages of 31-40 years.

Table 7

Breakdown of Demographics by Gender

Gender	n	Percent
Males	274	58.92
Females	191	41.08

note. n=465; Rounded to nearest hundredth.

Participants also provided their gender.

Table 8

Breakdown of Demographics by Years of Experience

Level of Years of Experience	n	Percent
1	91	19.65
2	158	34.13
3	109	23.54
4	105	22.68

note. n=463; Rounded to nearest hundredth.

Participants responded to Years of teaching experience as one of four categories; five years or less, 6-15 years, 16-25 years and 26 years or more. Most participants taught between 6 and 15 years.

E. MODELS

The one-way analysis of variance and the two-way analysis of variance were used in this study to test for significant differences in the previously mentioned research questions. The Brown-Forsythe test was used to test for homogeneity of variance; one of the model assumptions in the ANOVA. The Brown- Forsythe test is based on the between-group sum of squares calculated in exactly the same manner as in the usual *F*-test (Maxwell & Delaney, 2004). Tukey’s mean comparison test was included to see between what groups, if any, statistically significant differences existed for variables with more than two groups (i.e., years of teaching experience). A Tukey procedure allows for testing all possible pairwise comparisons in an experiment and still maintains an alpha of 0.05 (Maxwell & Delaney, 2004). The Tukey is a useful test when the various groups in a study have unequal numbers of participants (O’Rourke, Hatcher, Stepanski, 2007).

One-Way ANOVA.

A one-way Analysis of Variance (ANOVA) is a statistical model used to analyze the differences between group means on a single independent variable. It enables you to determine if there are significant differences between two or more groups on the treatment conditions with respect to their mean scores on a criterion variable. ANOVA has an important advantage over a *t*-test. A *t*-test enables you to determine whether there is a significant difference between only two groups. ANOVA is routinely used to analyze data from experiments that involve three or more treatment conditions. When data only include two groups for the independent variable, the calculations for the ANOVA *F*-test and the *t*-test are equivalent. The *F*-test results from the ANOVA, with the corresponding probability rate, provide information as to whether or not the model does explain the variance in the dependent variable in respect to membership in the independent variable (predictor). All statistical analyses will be conducted with SAS®.

The coefficient of determination (*R*-square) is the proportion of the total variation in the criterion accounted for by the predictor. *R*-square indicates how well data points fit on a line or curve. It is used in statistics to gauge the strength of the relationship between the predictor and the criterion. Its values range from 0 to 1, with 0 indicating a weak relationship and values closer to 1 a strong relationship.

Standard deviation is the square root of the variance; it shows how close the data are to the mean. A low standard deviation indicates that the data points tend to be close, while a large standard deviation indicates that the data points are spread out over a larger range of values.

Summary of Assumptions Underlying One-Way ANOVA with One Between-Subjects Factor.

Level of measurement. The criterion variable is a numeric variable that is assessed on an interval level of measurement. The survey responses are on a Likert scale which is commonly treated as an interval scale for attitudinal measures. The predictor variables are measured on a nominal scale; i.e., participants are assigned to only one group on the independent variable.

Independent observations. An observation is not dependent on any other observation in any group. In practical terms, this means that each subject's measurement should not be affected by any other subject's measurement. Each participant was administered the survey independently and therefore responses from one participant did not impact the responses of another.

Random sampling. Scores on the criterion variable represent a random sample that is drawn from the populations of interest. The sample was selected by employment records that were in alphabetic order. Administrators were asked to pick every third teacher as a way to randomize the sample.

Normal distribution. This assumption requires that data is a sample from a normal distribution in order to draw valid conclusions. Data were analyzed using Proc Univariate with the normal option to determine whether data met this assumption. According to the Proc Univariate results, the Shapiro-Wilk statistic showed each variable under investigation (age, gender, years of experience) violated the assumption of normality (age $W = 0.87, p < 0.001$; gender $W = 0.65, p < 0.001$; years of experience $W = 0.87, p < 0.001$). However, Each group contains over 30 participants, which indicate the test is robust against moderate departures from normality (in this context, robust means that the test will still provide accurate results as long as violations of the assumptions are not large).

Homogeneity of variance. The populations represented by the various groups should have equal variances on the criterion. The Brown-Forsythe test showed that the variables age and years-experience violate the assumption of homogeneity of variance indicating that there is less than 0.01 percent probability of obtaining an F -statistic as large as or larger than 27.88 or 30.86, respectively, by chance alone. Since the probability for these to occur is less than 0.01 percent, there is enough information to say the variances are not equal on these variables. If the number of subjects in the largest group is no more than 1.5 times greater than the number of subjects in the smallest group, the test is robust against moderate violations of the homogeneity assumption (Hatcher, 2003). No group was more than 1.5 times larger than any other group on the independent variables in this study.

Two-Way ANOVA.

Factorial ANOVA is a test of group differences that enables the researcher to determine whether there are significant differences between two or more groups with respect to two or more independent variables or predictor variables at the same time with respect to their mean scores on a criterion variable. In a factorial design all possible combinations of the various levels of the independent variables are present (Hatcher, 2003), allowing the researcher to study interactions. Factorial ANOVA with two between-subjects factors may be used when the researcher wishes to investigate the relationship between two predictor variables and a single criterion variable.

At times, an independent variable is manipulated and controlled by the researcher so that it is independent of any other independent variable in the study, i.e., selection into treatment or control group. In this study there were no independent variables manipulated by the researcher.

The independent variables were characteristics of the participants, sometimes known as subject variables to differentiate between variables manipulated and not manipulated by the researcher.

Summary of Assumptions underlying Factorial ANOVA with Two Between-Subjects Factors.

Level of measurement. The criterion variable is a numeric variable that is assessed on an interval level of measurement. The survey responses are on a Likert scale which is commonly treated as an interval scale for attitudinal measures. The predictor variables are measured on a nominal scale; i.e., participants are assigned to only one group on the independent variable.

Independent observations. An observation is not dependent on any other observation in any group. In practical terms, this means that each subject's measurement should not be affected by any other subject's measurement. Each participant was administered the survey independently and therefore responses from one participant did not impact the responses of another.

Random sampling. Scores on the criterion variable represent a random sample that is drawn from the populations of interest. The sample was selected by employment records that were in alphabetic order. Administrators were asked to pick every third teacher as a way to randomize the sample.

Normal distribution. This assumption requires that data is a sample from a normal distribution in order to draw valid conclusions. For the age by gender and the gender by years of experience analysis, each cell was drawn from a normally-distributed population. Each cell is over 30 subjects which indicate the test is robust against moderate departures from normality (in this context, robust means that the test will still provide accurate results as long as violations of the assumptions are not large). The analysis for age by years did not meet the normality

assumption for the ANOVA with each cell not represented homogeneously. This supports the idea that teaching is a life-long career choice with few leaving the profession.

Homogeneity of variance. The populations represented by the various cells should have equal variances on the criterion. If the number of subjects in the largest cell is no more than 1.5 times greater than the number of subjects in the smallest cell, the test is robust against moderate violations of the homogeneity assumption.

A. INSTRUMENT RELIABILITY AND VALIDITY

Reliability. To provide evidence for the extent to which items on the instrument are measuring the same construct, Cronbach's coefficient alpha was calculated. This measure of internal consistency generally yields a lower bound estimate of reliability. A scale with an alpha of .8 or above is regarded as internally consistent using this measure. The following table shows the internal consistency measure, means (standard deviation) and standard error of measurement (SEM) for the Strongly Disagree – Strongly Agree scale. The subscale How in-service education provides benefits to teachers had low internal consistency to demonstrating a disparity in beliefs on benefits teachers receive from in-service.

Table 9

Internal Consistency and Descriptive Statistics for the Strongly Disagree – Strongly Agree Instrument

Subscale	Number of Items	Mean (SD)	Cronbach's alpha	SEM
Past experiences	17	3.8 (.58)	.96	0.11
What in-service education can or should do	4	4.07 (.39)	.79	0.18
How in-service education provides benefits to teachers	3	3.12 (.38)	.34	0.27

note. Rounded to the nearest hundredth.

Table 9 shows responses to attitudes regarding past experiences and the purpose of in-service to have good reliability. The responses to attitudes regarding benefits to in-service education proved to have low-reliability.

Validity. Three types of validity were assessed for this study: content validity, criterion validity and construct validity. Each type of validity is addressed below.

Content validity. Content validity is concerned with how adequately items match with what they are supposed to be measuring (Turner, 2008). The Attitude toward Staff Development Programs Scale provided face validity, a specific type of content validity. For an instrument to have face validity, the instrument must appear to measure what it is designed to measure; specifically, a construct of importance to a typical examinee.

Criterion validity. Criterion validity pertains to how well one variable, or a set of variables, shows relationship between instrument scores and a criterion at the time of measurement, or the degree to which the score on the instrument will predict a future criterion

measure (Turner, 2008). This instrument was partially designed to predict employee effectiveness in different workplaces. Therefore a future employer could look at results from this survey of a potential employee to see if the employee would be effective in the employer's work environment.

Construct validity. Construct Validity needs to be established for the instrument in order for valid inferences to be made (Turner, 2008). To account for construct validation, first items were developed from a given set of operational definitions. The operational definitions specified what was needed to measure the concepts. After the instrument was administered, statistical relations were examined to validate whether or not the items on the instrument were adequate for getting to the definition of the construct. To investigate the construct validity of the instrument, a principal components analysis was performed as reported below.

Principal Components Analysis. Principal Components Analysis (PCA) is a statistical technique to assess for construct validity by identifying the most meaningful representation of the data. The PCA to be run is dependent on the correlations between the subscales. Correlations between subscales can be seen in Table 10. Item scores were averaged into scale scores to calculate the correlations between subscales. Before the scale scores were calculated, items 5, 10, 12, 17 and 23 were reverse-coded in order to be interpreted consistently (positively or negatively) with the other items of the subscale. The subscale pertaining to past experiences had 16 question; the subscale pertaining to what in-services can or should do had four questions; and the subscale pertaining to benefits to teachers of in-service contained 4 questions.

Table 10

Correlations Between Subscales on the Survey Instrument

Subscales	Past experiences	What in-service education can or should do	How in-service education provides benefits to teachers
Past experiences	1.00	-0.53	-1.00
What in-service education can or should do		1.00	-0.08
How in-service education provides benefits to teachers			1.00

note. Rounded to the nearest hundredth.

The moderate correlation between the subscales dictates that the PCA will be run with an oblique rotation allowing the factors to be correlated. A PCA is generally performed to see how many factors would account for the most variation in survey responses. The instrument was designed to measure three factors; therefore three factors were used in this analysis. The three factors accounted for approximately 68 percent of the variance in survey responses as provided by the eigenvalues of the correlation matrix. Results of the PCA yielded 17 questions loading on Factor 1, three questions loading on Factor 2 and two questions loading on Factor 3. Questions 12 and 1 did not load with the other questions thought to measure benefits of in-service. Question 11 did not load with the other questions thought to measure what in-service can or should do. The questions that did not load as hypothesized all loaded on Factor 1 relating to past experiences.

IV. DATA ANALYSIS

This study used statistical evaluations to determine if there are statistically significant differences between groups based on gender, age of participant and years of teaching experience in an attempt to answer the following research questions:

- To what extent does age of the teacher, make a difference in their attitudes?
- To what extent will years of experience make a difference in attitudes of the teachers?
- To what extent will gender make a difference in attitudes of teachers?
- Does gender influence the attitude of teachers based on age of the teacher?
- Do years of experience influence the attitude of teachers based on the age of teachers?
- Does gender influence the attitude of teachers based on years of experience?

A. DEMOGRAPHIC INFORMATION OF PARTICIPANTS.

Table 11

Breakdown of Demographics by Age, Mean and Standard Deviation

Level of Age	<i>n</i> (Percent)	Mean of Answers	Std. Dev. of Answer
1	61 (.13)	3.21	0.54
2	160 (.34)	3.63	0.45
3	136 (.29)	3.89	0.21
4	108 (.23)	3.90	0.20

note. $n = 435$; numbers rounded to nearest hundredth.

Table 11 provides the age level of those completing the instrument broken down into four levels. The nominal identifier of the number 1 represents teachers who were 30 years of age or younger. There were 13 percent (61) teachers that identified themselves into this category. The mean answer for this age level was 3.34. This indicates that when answering all the questions on the survey this age level mean answer was 3.34. The standard deviation of the answers was 0.56.

The nominal identifier of the number 2 represents teachers who were between 31 years of age and 40 years of age. There were 160 teachers that identified themselves into this category. The standard deviation was 0.47. The nominal identifier of the number 3 represents teachers who were between 41 years of age and 50 years of age. There were 136 teachers that identified themselves into this category. The standard deviation was 0.22. The nominal identifier of the number 4 represents teachers who were 51 years of age or older. There were 108 teachers that identified themselves into this category. The standard deviation was 0.21.

Table 8 indicates that Level of Age Groups 3 and 4 had a higher mean which indicates the answers were in the Agree and Strongly Agree. For Age Groups 1 to 4, the standard deviation was decreased from 0.56 to 0.21.

Table 12

Breakdown of Demographics by Level of Years of Experience, Mean and Standard Deviation

Levels of Years of Experience	n Percent	Mean of Answers	Std Dev of Answers
1	91 (0.2)	3.25	0.53
2	158 (0.34)	3.74	0.38
3	109 (0.24)	3.89	0.21
4	105 (0.23)	3.90	0.21

note. n= 463; Numbers rounded to nearest hundredth.

In Table 12, years of experience of those taking the instrument was broken down into four levels. The nominal identifier of the number 1 represents teachers who identified themselves as having five years or less of experience. There were 91 teachers that identified themselves into this category. The nominal identifier of the number 2 represents teachers who identified themselves as having between six years and 15 years of experience. There were 158 teachers that identified themselves into this category. The nominal identifier of the number 3 represents teachers who identified themselves as having between 16 years and 25 years of experience. There were 109 teachers that identified themselves into this category. The nominal identifier of the number 4 represents teachers who identified themselves as having 26 years or more of experience. There were 105 teachers that identified themselves into this category.

Group 1 has a mean of 3.38 and a standard deviation of 0.55. Group 2 has a mean of 3.9 and a standard deviation of 0.4. The Groups 3 and 4 of years of experience have a mean of 4.05

and 4.06 respectively. This indicated the more experienced teachers tended to agree more with the questions. The standard deviation of Groups 3 and 4 are 0.21 and 0.22 respectively indicated that teachers tended to answer agree or strongly agree more often.

Table 13

Breakdown of Demographics by Level of Gender, Mean and Standard Deviation

Gender	n Percent	Means of Answers	Std Dev
1	274 (0.59)	3.61	0.43
2	191 (0.41)	3.87	0.37

note. n= 465; Numbers rounded to nearest hundredth.

In Table 13, the gender of those taking the instrument was broken down into two categories. The nominal identifier of the number 1 represents teachers who identified themselves as male. There were 274 teachers who identified themselves into this category. The nominal identifier of the number 2 represents teachers who identified themselves as female. There were 191 teachers who identified themselves into this category. The standard deviation of males was 45 percent while females' standard deviation was 38 percent.

Table 14

Breakdown of Demographics by Level of Gender, Age, Mean and Standard Deviation

Gender	Level of Age	n Percent	Mean of Answers	Std Dev
1	1	33 (0.07)	3.17	0.51
1	2	92 (0.20)	3.61	0.48
1	3	76 (0.16)	3.97	0.17
1	4	73 (0.16)	4.00	0.19
2	1	28 (0.06)	3.56	0.56
2	2	68	4.02	0.32
2	3	60 (0.13)	4.17	0.23
2	4	35	4.18	0.20

note. n= 465; Numbers rounded to nearest hundredth.

In Table 14, the gender of those taking the instrument was broken down into two categories. The nominal identifier of the number 1 represents teachers who identified themselves as male. The nominal identifier of the number 2 represents teachers who identified themselves as female. The age level of those completing the instrument was broken down into four levels. The nominal identifier of the number 1 represents teachers who were 30 years of age or younger. There were 61 teachers that identified themselves into this category. The nominal identifier of

the number 2 represents teachers who were between 31 years of age and 40 years of age. There were 160 teachers that identified themselves into this category. The nominal identifier of the number 3 represents teachers who were between 41 years of age and 50 years of age. There were 136 teachers that identified themselves into this category. The nominal identifier of the number 4 represents teachers who were 51 years of age or older. There were 108 teachers that identified themselves into this category.

Those teachers who identified themselves as male and being 30 years old or less numbered 33. Their mean score was 3.17 out of a possible five and had a standard deviation of 0.51 percent. Those teachers who identified themselves as male and being 31 to 40 years of age, numbered 92. Their mean score was 3.61 out of a possible five and had a standard deviation of 0.48 percent. Those teachers who identified themselves as male and being 41 to 50 years old, numbered 66. Their mean score was 3.97 out of a possible five and had a standard deviation of 0.17 percent. Those teachers who identified themselves as male and being 51 years of age or older numbered 73. Their mean score was 4.00 out of a possible five and had a standard deviation of 0.19 percent.

There were 28 teachers who identified themselves as female and being 30 years old or less. Their mean score was 3.56 out of a possible five and had a standard deviation of 0.56 percent. Those teachers who identified themselves as female and being 31 to 40 years of age, numbered 68. Their mean score was 4.02 out of a possible five and had a standard deviation of 0.32 percent.

Those teachers who identified themselves as female and being 41 to 50 years old, numbered 60. Their mean score was 4.17 out of a possible five and had a standard deviation of 0.23 percent. Teachers who identified themselves as female and being 51 years of age or older

numbered 35. Their mean score was 4.18 out of a possible five and had a standard deviation of 0.20 percent.

Table 15

Breakdown of Demographics by Years of Experience, Age, Mean and Standard Deviation

Years of experience	Level of Age	n (Percent)	Mean of Answers	Std Dev of Answers
1	1	61 (0.13)	3.35	0.56
1	2	30 (0.06)	3.45	0.52
2	2	129 (0.28)	3.86	.42
2	3	27 (0.06)	4.07	.25
2	4	2 (0.00)	3.88	.06
3	3	99 (0.21)	4.06	.21
3	4	10 (0.02)	4.03	.27
4	2	1 (0.00)	3.38	*
4	3	8 (0.02)	4.03	.25
4	4	96 (0.21)	4.07	.20

note. n = 463; Numbers rounded to nearest hundredth. * indicates not enough data to

In Table 15, years of experience, of those taking the instrument was broken down into four levels. The nominal identifier of the number 1 represents teachers who identified themselves as having five years or less of experience. There were 91 teachers that identified themselves into this category. The nominal identifier of the number 2 represents teachers who identified themselves as having between 6 years and 15 years of experience. There were 158 teachers that

identified themselves into this category. The nominal identifier of the number 3 represents teachers who identified themselves as having between 16 years and 25 years of experience. There were 109 teachers that identified themselves into this category. The nominal identifier of the number 4 represents teachers who identified themselves as having 26 years or more of experience. There were 105 teachers that identified themselves into this category.

The age level of those completing the instrument was broken down into four levels. The nominal identifier of the number 1 represents teachers who were 30 years of age or younger. There were 61 teachers that identified themselves into this category. The nominal identifier of the number 2 represents teachers who were between 31 years of age and 40 years of age. There were 160 teachers that identified themselves into this category. The nominal identifier of the number 3 represents teachers who were between 41 years of age and 50 years of age. There were 134 teachers that identified themselves into this category. The nominal identifier of the number 4 represents teachers who were 51 years of age or older. There were 108 teachers that identified themselves into this category.

Those teachers taking the survey who identified themselves as having less than five years of experience and being 30 years of age or less number 61. Their mean was 3.35 out of five and a standard deviation of 0.56 percent. Those teachers taking the survey who identified themselves as having less than five years of experience and being 31 to 40 years of age or less number 30. Their mean was 3.45 out of five and a standard deviation of 0.52 percent. Of those teachers taking the survey no one identified themselves as having less than five years of experience and being 41 to 50 years of age or 51 years or older.

No teacher identified his or herself as having 6 to 15 year of experience and being less than 30 years of age. The teachers who identified themselves as having 6 to 15 year of

experience and being between the age of 31 and 40 years of age numbered 129. Their mean was 3.86 out of five and a standard deviation of 0.42 percent. The teachers who identified themselves as having 6 to 15 year of experience and being between the age of 41 and 50 years of age numbered 27. Their mean was 4.07 out of five and a standard deviation of 0.25 percent. The teachers who identified themselves as having 6 to 15 year of experience and being between the age of 51 years of age and older numbered 2. Their mean was 3.88 out of five and a standard deviation of 0.06 percent.

Of those teachers taking the survey no one identified themselves as having 16 to 25 year of experience and being less than 30 years of age or 31 to 40 years of age. Those teachers taking the survey who identified themselves as having 16 to 25 year of experience and being between the age of 41 and 50 years of age numbered 99. Their mean was 4.06 out of five and a standard deviation of 0.21 percent. Those teachers taking the survey who identified themselves as having 16 to 25 year of experience and being between the age of 51 years of age and older numbered 10. Their mean was 4.03 out of five and a standard deviation of 0.27 percent.

Of those teachers taking the survey no one identified themselves as having 26 to year of experience or more and are older and being less than 30 years of age. Those teachers taking the survey who identified themselves as having 26 years of experience and being between the age of 31 and 40 years of age numbered 1. The mean was 3.38 out of five and a standard deviation did not apply. Those teachers taking the survey who identified themselves as having 26 years of experience and being between the age of 41 and 50 years of age numbered 8. Their mean was 4.03 out of five and a standard deviation of .25 percent. Those teachers taking the survey who identified themselves as having 26 years of experience and being older than the age of 51 years of age numbered 96. Their mean was 4.07 out of five and a standard deviation of .20 percent.

Table 16

Breakdown of Demographics by Gender, Years of Experience, Mean and Standard Deviation

Gender	Level of Years of Experience	n Percent	Mean of Answers	Std Dev
1	1	57 (0.12)	3.26	0.52
1	2	82 (0.18)	3.75	0.43
1	3	66 (0.14)	3.96	0.14
1	4	67 (0.14)	4.00	0.21
2	1	34 (0.07)	3.59	0.55
2	2	76 (0.16)	4.06	0.28
2	3	43 (0.09)	4.2	0.23
2	4	38 (0.08)	4.17	0.19

note. n= 463; Numbers rounded to nearest hundredth.

In Table 16, the gender of those taking the instrument was broken down into two categories. The nominal identifier of the number 1 represents teachers who identified themselves as male. There were 272 teachers who identified themselves in this category. The nominal identifier of the number 2 represents teachers who identified themselves as female. There were 191 teachers who identified themselves in this category.

The years of experience, of those taking the instrument was broken down into four levels. The nominal identifier of the number 1 represents teachers who identified themselves as having five years or less of experience. There were 91 teachers who identified themselves in this category. The nominal identifier of the number 2 was teachers who identified themselves as having between 6 years and 15 years of experience. There were 158 teachers who identified themselves in this category. The nominal identifier of the number 3 was teachers who identified themselves as having between 16 years and 25 years of experience. There were 109 teachers who identified themselves in this category. The nominal identifier of the number 4 was teachers who identified themselves as having 26 years or more of experience. There were 105 teachers who identified themselves in this category.

Those teachers who identified themselves as male and having five or less years of experience, numbered 57. Their mean score was 3.26 out of a possible five and had a standard deviation of 0.52 percent. Those teachers who identified themselves as male and having 6 to 15 years of experience, numbered 82. Their mean score was 3.75 out of a possible five and had a standard deviation of 0.43 percent. Those teachers who identified themselves as male and having 16 or 25 years of experience, numbered 66. Their mean score was 3.96 out of a possible five and had a standard deviation of 0.14 percent. Those teachers who identified themselves as male and having 26 or more years of experience, numbered 67. Their mean score was 4.00 out of a possible five and had a standard deviation of 0.21 percent.

Those teachers who identified themselves as female and having five or less years of experience, numbered 34. Their mean score was 3.59 out of a possible five and had a standard deviation of 0.55 percent. Those teachers who identified themselves as female and having 6 to 15 years of experience, numbered 76. Their mean score was 4.06 out of a possible five and had a

standard deviation of 0.28 percent. Those teachers who identified themselves as female and having 16 or 25 years of experience, numbered 43. Their mean score was 4.20 out of a possible five and had a standard deviation of 0.23 percent. Those teachers who identified themselves as female and having 26 or more years of experience, numbered 38. Their mean score was 4.17 out of a possible five and had a standard deviation of 0.19 percent.

B. TWO WAY ANOVA RESULTS

Table 17

ANOVA Summary Table for study Investigating Relationship between Gender and Age (Significant Interaction)

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Gender (A)	1	7.88	7.88	72.69	<.01
Age (B)	3	23.84	7.95	73.36	<.01
A x B Interaction	2	1.22	0.41	3.77	0.01
Within groups	457	49.51	0.11		
Corrected Total	464	84.23			

note. n = 465; Results rounded to nearest hundredth

In Table 17, the teacher's attitude of in-service development scores were analyzed using two-way ANOVA, with two between-subjects factors. This analysis revealed a significant main effect for Gender, $F(1, 457) = 72.69$; $p < .0001$. The main effect for Age, $F(3, 457) = 73.36$; $p < .0001$, and medium to treatment effect, $R^2 = .41$. The interaction between Gender and Age also proved to be non-significant $F(3, 457)$, *ns*. The analysis revealed significant interaction effect of gender and age, so main effects were investigated.

Due to the statistically significant interaction between age and gender, simple main effects were interpreted (see figure 1). Results of the simple main effects indicated males attitudes were significantly less than females attitudes across all age groups $F(1, 457) = 157.37$. However, males increased their attitudes across ages at a larger rate than females indicating a closing gap between the two groups.

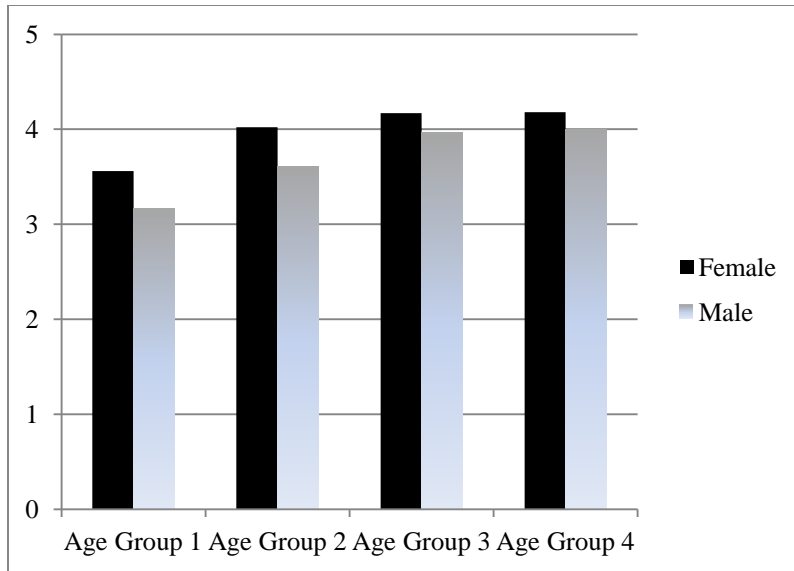


Figure 1. Mean differences in age verses gender.

Table 18

ANOVA Summary Table for Study Investigating Relationship between Gender and Years of Experience (Non-significant Interaction)

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Gender (A)	1	6.64	6.64	60.95	<.01
Years of Ex (B)	3	23.92	7.97	73.2	<.01
A x B Interaction	3	0.38	0.13	1.17	0.32
Within groups	455	49.56	0.19		
Corrected Total	462	84.22			

note. n = 463; Results rounded to nearest hundredth

In Table 18, the Teachers' Attitude of in-service development scores was analyzed using a two-way analysis of variance ANOVA, two between-subjects factors. The analysis revealed a significant main effect for Gender, $F(1, 455) = 60.95; p < .0001$. The main effect for Years of Experience, $F(3, 455) = 73.2; p < .0001$, and medium treatment effect, $R^2 = .41$. The interaction between Gender and Age also proved to be non-significant $F(3, 455)$, ns. The analysis revealed no interaction effect of gender and age, so main effects were investigated.

Table 19

ANOVA Summary Table for Study Investigating Relationship between Age and Years of Experience (Non-significant Interaction)

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Age (A)	9	31	3.44	25.84	0.09
Years of Ex (B)	453	60.38	0.13	1.98	0.12
A x B Interaction	3	0.3	0.1	0.8	0.49
Within groups	453	55.65	0.12		
Corrected Total	462	84.22			

note. n = 463; Results rounded to nearest hundredth.

In Table 19, the Teachers' Attitude of in-service development scores was analyzed using a two-way analysis of variance (ANOVA) with two between-subject factors. This analysis revealed an age effect of teacher attitude; the $F(7,453) = 2.19$, p of 0.0884. The main effect for Years of Experience $F(3, 453) = 1.98$; ns and a medium treatment effect, $R^2 = .41$. The interaction between Age and Years of Experience also proved to be non-significant $F(3, 455)$, ns. The analysis revealed no interaction effect of gender and age, so main effects were investigated.

C. ONE WAY ANOVA RESULTS

Table 20

ANOVA Summary Table for Study Investigating the Relationship between Levels of Age

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Age	3	24.47	8.16	62.92	<.01
Within groups	461	59.76	0.13		
Total	464	91.39			

note. n =465; Numbers rounded to nearest hundredth.

In Table 20, the Teachers' Attitude of in-service development scores were analyzed using a one-way analysis of variance (ANOVA) with one-way ANOVA between subjects design. The analysis revealed an age effect of teacher attitude; $F(3,461) = 72.27, p < .0001$ and a medium treatment effect, $R^2 = .29$.

Tukey's HSD test showed a significant difference in age group 1 when compared to age groups 2, 3 and 4 ($p < .05$). Age group 2 showed a significant difference in age groups; 1, 3 and 4 ($p < .05$). Age group 3 showed a significant in age groups 1 and 2 ($p < .05$). Age group 4 showed a significant difference in age groups; groups 1 and 2.

Table 21

Brown and Forsythe's Test for Homogeneity of Total Variance ANOVA of Absolute Deviations from Group Medians

Source	DF	Sum of	Mean	<i>F</i> Value	Pr > <i>F</i>
Age	3	5.64	1.88	27.88	<.01
Error	461	31.11	0.07		

note. n= 462; Rounded to nearest hundredth.

In Table 21, a Brown and Forsythe's Test of homogeneity of Total Variance was used based on age. The Brown and Forsythe test assumes group variances are statistically equal. The Brown and Forsythe test statistic is the *F* statistic resulting from an ordinary one-way analysis of variance on the absolute deviations from the median. The analysis revealed an age effect of teacher attitude; the $F(3,461) = 27.88, p < .0001$.

Table 22

Summary Table for One Way Analysis of Years of Experience

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Years of Ex	3	29.32	9.77	72.27	<.01
Error	459	62.07	0.14		
Corrected	462	91.39			

note. n=463; Rounded to nearest hundredth.

In Table 22, the Teachers' Attitude of in-service development scores were analyzed using a one-way analysis of variance (ANOVA) with one-way ANOVA between subjects design. The analysis revealed the Years of Experience effect of teacher attitude; $F(3,459) = 72.27, p < .0001$ and a medium treatment effect, $R^2 = .32$.

Tukey's HSD test showed: a significant difference in age group 1 when compared to age groups 2, 3 and 4 ($p < .05$). Age group 2 showed a significant difference in age groups; 1, 3 and 4 ($p < .05$). Age group 3 showed a significant in age groups 1 and 2 ($p < .05$). Age group 4 showed a significant difference in age groups; groups 1 and 2.

Table 23

Brown and Forsythe's Test for homogeneity of Total Variance ANOVA of Absolute Deviations from Group Medians

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Years of Ex	3	5.22	1.79	30.86	<.01
Error	459	25.89	0.06		

note. n=460; Rounded to nearest hundredth.

In Table 23, the Teachers' Attitude of in-service development tested the model by gender design. The analysis revealed gender effect; the $F(3,459) = 30.86, p < .0001$. The $R^2 = 0.10$, (rounded to nearest hundredth).

Differences between Participants based on Gender.

Table 24

Summary Table for One Way Analysis of Gender

Source	DF	Sum of	Mean	F Value	Pr > F
Gender	1	8.15	8.15	45.33	<.01
Within groups	463	76.72	0.18		
Corrected Total	464	84.23			

note. n=465; Rounded to nearest hundredth.

In Table 24, the Teachers' Attitude of in-service development scores were analyzed using a one-way analysis of variance (ANOVA) with one-way ANOVA between subjects design. The analysis revealed a Gender effect of teacher attitude; $F(3,463) = 72.27, p < .0001$ and a small treatment effect, $R^2 = .09$. Tukey's HSD test showed: a significant difference in Gender Group 1 when compared to Age Groups 2 ($p < .05$).

Table 25

Brown and Forsythe's Test for homogeneity of Total Variance ANOVA of Absolute Deviations from Group Medians

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Gender	1	0.15	0.15	1.46	<.23
Error	463	47.93	0.10		

note. n=464; Rounded to nearest hundredth.

In Table 25, the Teachers' Attitude of in-service development tested the model by gender design. The analysis revealed gender effect; the $F(1,318) = 35.19, p < .0001$. Tukey's HSD test showed no significant difference in group 1 and 2 ($p < .05$), the $R^2 = 0.10$ (Rounded to nearest hundredth).

Assumption of homogeneity of variance. This analysis revealed no violation of the model assumption with indicating there is a 23 percent possibility to observe an F-Statistic as large or larger than 1.46 by chance alone. Since the probability for this to occur is greater than 0.01 we do not have enough evidence to say the variances are not equal.

V. DISCUSSION

A. HYPOTHESIS

1) Research Hypothesis

There were significant differences in the attitudes of teachers based on gender toward professional development.

The data suggested that the gender of teachers did not influence the attitudes. Teachers, who were in group 1 (male), showed a tendency to agree (mean of 3.76) more, with a standard deviation of 0.45. Group 2 (female) had a mean slightly larger, at 4.03, with a standard deviation of 0.38. These results showed no significant difference in the attitude of teachers based on gender.

2) Research Hypothesis

There were significant differences in the attitudes of teachers toward professional development based on years of experience.

Groups 1 and 2, had means of 3.38 and 3.98, with a standard deviation of 0.55 and 0.4, respectively. Teachers who were in groups 3 and 4 (41 years to 50 and 51 years and older), showed a tendency to agree more (mean of 4.06). Also the standard deviation was smaller (0.21 and 0.22 respectively). This may indicate a maturing level as the teachers become confident in their own abilities. The data suggested that teachers with more years of experience tended to agree higher on attitudes.

3) Research Hypothesis

There were significant differences in the attitudes of teachers toward professional development based on the age of the teachers.

Groups 1 and 2 had means of 3.45 and 3.78, with standard deviations of 0.56 and 0.47, respectively. The data suggested that age did make a difference in teaching ability. Teachers who were in Groups 3 and 4 (41 years to 50 and 51 years and older), showed a tendency to agree (mean of 4.06) more, also the standard deviation was smaller (0.22 and 0.21 respectively).

As the teachers age increased the respondents tended to be more positive in their answers. The mean correspondingly increased as the age increased. This may indicate a maturing level as the teachers become confident in their own abilities.

B. THE STUDY WAS GUIDED BY THE FOLLOWING RESEARCH QUESTIONS:

Research Question 1) To what extent will age of the teacher make a difference in attitudes of teachers?

Younger teachers overall rated lower on attitude when compared to older teachers. The age group 30 and younger rated the lowest on attitude. This might be due to the fact that they are fresh out of college and have most of the skill sets needed in the classroom. The lower attitude might also have with time to prepare for class. It also might be the stress of struggling with adjusting to the classroom and that in-service is not a high priority right now.

The Group of 41 and older had almost identical scores when rating themselves. This might be because they are more receptive of professional development.

Research Question 2) To what extent will years of experience make a difference in attitudes of the teachers?

Teachers with less years of experience rated themselves lower on attitude when compared to teachers with more years of experience. Group 5 years and less, with 6 to 15 years rated the lowest on attitude.

This might be due to the fact that they are fresh out of college and have most of the skill sets needed in the classroom. The two teacher groups with more years of experience; 16 to 25 years and 26 years or more had almost identical scores when rating themselves. This might be because they are more receptive of professional development.

Research Question 3) To what extent will gender make a difference in attitudes of teachers?

Gender did not make a significant difference in attitude of teachers. In the survey men rated slightly higher, but not at a level to make it significant.

Research Question 4) Does gender influence the attitude of teachers based on age of the teacher?

When examining the attitude of teachers toward professional development compared to gender with age level, there is little difference. The older a teacher was, the more consistent the answers were. Males in Age Levels 1 and 2 had standard deviations of 0.51 and 0.48. Females in Age Levels 1 and 2 had standard deviations of 0.56 and 0.32. This might indicate that females were less sure of themselves in Age Level 1, while in Age Level 2, they were better able to adapt or learned quicker.

In all cases the mean scores increased with age and gender indicating that teachers regardless of gender and age developed a better attitude about professional development.

Research Question 5) Do years of experience influence the attitude of teachers based on the age of teachers?

The years a teacher has taught does make a difference in the age of the teacher. As expected older teachers were also teachers with more experience. This might be an indicator that there is little job mobility and jobs are secure. Younger teachers with less experience rated the survey questions lower as well as had a higher standard deviation.

One possible inference from this is that younger teachers with less years of experience are already prepared to teach as the professional development might not be as important to them as they recently graduated from the university.

Research Question 6) Does gender influence the attitude of teachers based on years of experience?

When the attitude of teachers was compared to gender and years of experience, there was little difference in the mean. However females rated themselves slightly higher than their male counterparts.

C. SUMMARY

When the researcher was asking permission to survey teachers in China, the immediate question back was why would anyone care about the attitude of teachers. The cultural differences immediately began to manifest themselves. In China teachers are hired to do a job, and teachers will do what they are told to do.

Concerning teacher retention, there seems to be little thought of hiring non-traditional teachers or even recruiting from the private sector. Young adults are recruited, instructed how to be teachers, and then placed in the classroom. That is the way it is done and to do otherwise is a foreign concept.

This goes with a theme that resonated throughout the journal articles about professional development of teachers. The teacher is typically seen as being an object not a subject. The various aspects of what the teacher thinks is not considered important in that region of China. In Guangdong may not be dissimilar to other parts of China. So there is a need for research in the area.

In recent years China has been implementing policies to make teaching more attractive by allowing the profession to be potentially elevated in social status. Perhaps trying to place it back into a position where it was in the early part of the 20th century may be the ultimate goal of the policymakers. Salaries and other benefits have been increased as part of this goal. This has made teaching more popular, and from the limited information available on teacher retention, fewer teachers are leaving the field and going to the private sector.

There is also a push for teaching more ethics. Current conditions in China have called into question people's honesty in professions in general. The Chinese government has been pushing for morals and values. Whether this will result in a revival of Confucianism and Daoism

regarding teachers is yet to be seen, though in the past those philosophies dominated education. Perhaps with recent events in China, with widespread corruption receiving more and more attention, accompanied by a recent drive to crack down on corruption there is a need to instill tried and tested values and moral guidelines.

Although the study only touched on a limited topic of teachers' attitudes, it raised many more questions. Which field of study had better attitudes? Did math teachers' attitudes differ from science teachers? Which colleges did the teachers go to? Were the teachers attending universities that were a great distance away or did teachers attend a nearby university? What was the recidivism rate of teachers? The specific course work during the pre-teacher education phase would need to be examined. This would also imply that the professional development that teachers received would need to be examined as well.

The age of the teacher when compared with the attitude (see table 20) seem to indicate that younger teachers are busy with setting up their classrooms and adjusting to the profession, more so than with older teachers. Younger teachers might also have just recently covered the material that was currently being taught to them in professional development.

The years of experience when compared to attitude (see table 22) might indicate that veteran teachers are more confident or happy with their professional development. Each group not only rated themselves higher than those of less experience, but the standard deviation narrowed, which indicated that the veterans were thinking along the same line.

The gender of the teacher when compared to attitude (see table 24) did show significant differences. This may indicate the professional development is not reaching across any real or perceived gender gaps within the school system. When the gender of the teacher was compared to the age of the teacher there were also significant differences. The goal of communist

leadership was to make everyone equal. Perhaps this is an example that traditionally male dominated roles are still enforced in the society where women may have rated themselves higher on attitude to demonstrate their subservience.

Comparing the years of experience and age (see table 19) suggested that there was little movement from outside private sector employees to become a teacher. Indeed, due to lack of seating in the normal colleges, there was little evidence of non-traditional teachers entering the work force. There appears to be very little mobility between professions in China, and this seems to be particularly true of teachers. The need for quality teachers is a theme repeated over and over with every new national program. But non-traditional teachers never seemed to be brought up. That the teachers stayed in one spot may indicate that they are happy with the way teaching is progressing. It also may indicate that there is no other job opportunity available to them.

Gender when compared to the years of experience of the teachers' attitude (see table 18) indicates that older more experienced teachers have a higher overall attitude on teacher professional development. Gender does play a significant role on attitude in professional development. It should be noted that females did rate higher. When looking at the data the female / male responses are close with females rating themselves lower in their first years, the two categories 5 years or less and 6 to 15 years. However in the next two categories the 16 to 25 years and 26 years or more, females rated themselves higher.

Gender when compared to age of teachers' attitude (see table 17) indicated that females teachers tended to rate themselves higher overall on teacher professional development at all age groups. Males rated themselves lower than females but the overall means showed more homogeneity with females in 41 to 50 years old and 51 years and older groups.

When looking at Table 13 there appears to be little job mobility. That is, once you become a teacher you stay a teacher. The question is then raised, are there non-traditional students in China. Due to limited seating in universities only the traditional students are accepted. This may change with some new revisions in the college system. Recently university enrollment qualifications have changed. In the past those students with the highest test scores on college entrance examines were allowed into the university of the student's choice. There is now a 'local first' policy. This will exclude many students from such places as the prestigious Beijing University; however, it may open positions in rural colleges where students are less inclined to attend.

Planning

Three major themes appeared in the research recruitment of high qualified teachers, placing qualified teachers into rural settings. Within the studies of the literature review there was a theme of attempting to recruit qualified teachers. The Decision on the Reform of Education CCCPC and State Council, 1985, had as one of its aims to produce a qualified and stable teacher workforce within five years. The National Programs for Educational Reform and Development Central Committee of the Communist Party of China and State Council, 1993, attempted to recruit promising high school graduates into the education field. The Education Act National People's Congress, 1995, placed emphasis on increasing the quality of the teacher work. The Action Plan to Revitalize Education for the 21st Century, January, 1999, was to improve the quality of the teacher work force in three years. Suggestions on Teacher Education Reform and Development for the 10th Five Year Plan, 2002, called for a difference in the number of highly qualified teachers by recruiting the best senior secondary students into teacher education programs.

The Teachers Law National People's Congress, 1993, allowed for extra money to be given to teachers who taught in rural areas. The Action Plan to Revitalize Education for the 21st Century approved by the State Council in 1999 was to encourage newly trained teachers to move to rural and poor areas for a period of time. The Revitalize Education 2003-2007 was approved by the Ministry of Education in 2004, and sought to encourage teachers to work in rural schools before returning to urban schools.

The retention rate of teachers is unknown. Schools do not disclose this information, so data is difficult to find. However, as China's economy expands the opportunities for people with an education improves. So it is only logical that teachers may find opportunities in non-education fields. This might be causing some teachers to leave their field and may be a contributing factor to China's attempt to address the need of highly qualified teachers. China has been raising the level of pay of teachers, as well as medical and retirement plans to the profession, in an attempt to bolster the appeal of teaching. Teachers who are more secure in their position are less inclined to leave their job.

Conclusions

Recruitment

Younger educators do not seem to be entering the field of teaching. The literature review indicated that in nearly every educational program implemented, some part of the program dealt with teacher recruitment. When examining the data this can be seen in the number of young teachers (30 years old or less), is lower than all the other groups.

Teacher attitude by years of experience and age

Because of the diverse scores in attitude of younger teachers, this group would be a target for professional development. As their opinions are not as formed and they would be more open

to new or different ideas. Whereas the teachers with more years of experience and older tended to be more homogenous.

Gender

Males and females are equally receptive to professional development. The overall attitude of the teachers is positive toward professional development. This would leave open the possibility for modifications to be made to their training.

Age

Older teachers rated themselves higher in attitude than younger teachers. The older teachers tended to be more homogeny than younger teachers.

Recommendations

For future study some follow up questions to this research study would be;

Teacher implementation

To what extent are teachers implementing the professional development they are receiving? The teachers have an overall positive attitude of professional development. However is professional development a factor in their teaching? The teachers may go through the motions by attending the training, but are they using what they learned in the classroom.

Teacher effectiveness

To what extent are teachers effective in using their professional development? The teachers attend professional development as required, but is this helping the students? This could be examined by testing the students fall and spring test scores and examining the differences.

Mentoring

To what extent is mentoring a part of the professional development process. Mentoring has been a part of education in China for centuries. Several studies in the literature review indicated that mentoring was a very important part of new teachers' experiences. We can see that the older teachers' attitudes were better than the younger teachers' attitudes. Future studies could focus on the mentor teachers as well as how they help develop the attitude of younger teachers.

In-service

What type of in-service / professional development is available to the teachers? Is this something they want and need or is this something that they simply pick from a list and do? The style of in-service was never discussed in detail in the journal publications. Teachers simply selected on a list of items that they need to comply with the rules. What the teachers actually need in terms of overcoming teacher disadvantages does not appear to be addressed and could be

researched in the future. Also to what extent are teachers permitted to help develop professional development could be explored.

In-service or professional development seems to be something that is done out of job description as opposed to what a teacher needs in a classroom. Having four levels of teachers is a way to ensure pedagogical knowledge stays current. However there is no indication that the pedagogical professional development is necessary for the teacher to become a better teacher, just that it fulfills a requirement.

Teacher attitude by Age and Years of Experience

How much more focused is the professional development on younger teachers? The younger teachers' attitude was more diverse compared to the older teachers who tended to be more homogenous.

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APPENDIX A

Institutional Review Board Form (IRB)

March 4, 2013

MEMORANDUM

TO: Todd Neuhaus
Mounir Farah

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 13-02-519

Protocol Title: *Teacher Attitudes toward Instructional Strategies and Classroom Pedagogy*

Review Type: EXEMPT EXPEDITED FULL IRB

Approved Project Period: Start Date: 03/04/2013 Expiration Date: 03/03/2014

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (<http://vpred.uark.edu/210.php>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 1,000 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

APPENDIX B

Letter Asking Permission

Dr. Kathleen Flanagan Hudson
Professor of Education
Coordinator of Faculty Development

Dr. Flanagan Hudson

I would like your permission to use your instrument “Attitude Toward In-service Scale” for a study that will be done in China. This research is related to professional growth of teachers and will be used as an academic report.

Thank you for your time in this matter

Sincerely,

Todd Neuhaus
Peabody Hall
University of Arkansas
Fayetteville, AR 72701

APPENDIX C

Letter giving permission to use survey



APPENDIX D

Instrument "Attitude toward Staff Development Programs Scale" by Dr. Kathleen Flanagan

Hudson

(学校教师对“教师进修项目”的看法)

Public School Teachers' Attitude toward Staff Development Programs Scale

答问方法：对每个句子，请按下面的代号标明你参加“教师进修项目”的原因：

Directions: For the following statements, please indicate your reasons to attend staff developments programs based on the follow code:

“1”= 完全不同意 “1” = Strongly Disagree

“2”= 不同意 “2” = Disagree

“3”= 中立 “3” = Neutral

“4”= 同意 “4” = Agree

“5”= 完全同意 “5” = Strongly Agree

1.) 我相信教师进修项目的主要目的是为了 提高教师在课堂的教学能力。

I believe that the primary purpose of staff development is to upgrade teaching performance in the classroom.

2.) 我觉得“教师进修项目”帮助我提高教学的技巧。

I feel staff development programs help me improve my teaching skills.

3.) 教师进修项目”激励我尝试新的教学方法。

Staff development programs motivate me to try new techniques.

4.) 我觉得“教师进修项目”帮助我实现我的一些职业目标。

I feel staff development programs help me achieve some of my professional goals.

5.) 我觉得“教师进修项目”是浪费时间。

I feel staff development programs are a waste of time.

6.) 我觉得如果教师也包括在项目的规划策略中，那么“教师进修项目”会更加有效。

I believe staff development programs will be more effective if teachers are involved in planning the programs.

7.) 我期待着参加“教师进修项目”。

I look forward to participate in staff development programs.

8.) 教师是能够将训练中学到的技巧运用到课堂的实践中的。

Teachers are able to apply staff development training into real classroom teaching.

9.) 教师有机会选择教师进修项目，以达到提高教学的效用。

Teachers have the opportunity to select staff development activities that will improve teaching effectiveness.

10.) 许多教师进修项目看起来与教师的需求无关。

Many staff development programs do not appear relevant to teacher's needs.

11.) 学校校长和管理层支持和贯彻“教师进修项目”。

The administration supports implementation of staff development programs.

12.) 教师比较喜欢“教师进修项目”在学校里进行。

Teachers would prefer staff development programs to be carried on within the school.

- 13.) 我觉得“教师进修项目”很好，允许我和同事们互相学习先进的教学方法。
I feel good about staff development programs that allow me to share my useful techniques with my colleagues.
- 14.) 由于“教师进修项目”而引起的课堂里的变化，教师会因此得到奖励。
Teachers are rewarded for the changes made in teaching as a result of staff development.
- 15.) 教师进修项目”是由教师的需要和关注而决定的。
Staff development programs are determined by the needs and concerns of teachers.
- 16.) 我相信大部分的学校管理层和校长了解教师的需要，知道如何去帮助他们提高教学能力。
I believe that most central office administrators and supervisors know what the needs of teachers are and how to help them improve their teaching.
- 17.) 我觉得“教师进修项目”的领导是外行人，并不懂得问题所在。
I feel staff development program leaders are outsiders who do not understand my problems.
- 18.) 我觉得在“教师进修项目”中，我能够做那些我认为重要的事项。
I feel I can work on the things I think are important during my staff development programs.
- 19.) 教师进修项目的目的与校区的任务是一致的。
Staff development goals support the school district mission
- 20.) 一个好的“教师进修项目”应该有一个明确的计划和目标。
A good Staff development program has a clear plan and objectives.
- 21.) 学校管理人员跟进“教师进修项目”，决定它是否成功。

The administration follows up to determine the success of staff development activities.

22.) 我相信“教师进修项目”能够用来提高学校的课程内容和结构。

I believe staff development programs can be used to improve the organization and content of the school's curriculum.

23.) 我对“教师进修项目”并不感兴趣，因为它对我提高教学情况没有多大的帮助。

I am not interested in staff development programs because they seldom help me improve teaching condition.

24.) 我喜欢参加“教师进修项目”活动，因为我觉得它帮助我提高在学校的地位。

I am interested in participating in staff development programs because I feel they help me to improve my status at the school level.

25.) 教师进修项目”为教师提供新的构想和创造新的项目。

Staff development programs provide new ideas and/or creative programs for teachers.

答卷者统计

Demographics :

1.) 答卷者的性别：男，女

Gender of Respondent: MALE FEMALE

2.) 答卷者的年龄：少于 30 岁，31-40 岁，41-50 岁，大于 50 岁

Age of Respondent: 30 years of less, 31-40 years, 41-50 years and 51 years or more

3.) 婚姻状况：单身，结婚

Marital Status: Single Married

4.) 教育背景：师范教育，普通高校，其他的

Educational Background: Teacher Education, General University, Others

5.) 教书的工龄：少于 5 年，6-15 年，16-25 年，高于 25 年

Years of teaching experience: 5 years or less, 6-15 years, 16-25 years, 26 years or more

6.) 学校注册学生人数：少于 1,000 名，1001-2,000 名，2001-3,000，多于 3,000

Enrollment of students in school: 1,000 students or less, 1001- 2,000, 2001 – 3,000, 3001 or more.