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Research on Educational Beliefs of Rural Primary School Principals: Taking Sichuan as an Example

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Declaration of Originality

I, Zhengwei WAN (Student number 80062328) declare that this dissertation entitled "Research on Educational Beliefs of Rural Primary School Principals: Taking Sichuan as an Example" and submitted as partial requirement for Ph.D. study programme of Education is my original work and that all the sources in any form (e.g. ideas, fields, texts, tables, etc.) that I have used or quoted have been indicated and acknowledged in the text as well as in the list of references.

Signature **Date**

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Abstract

There is a huge gap between urban and rural education in China. School principal is the key person for reducing the gap, whose change is crucial to education reform and development. And, the change should start with beliefs. This research adopted mixed methodology of quantitative and qualitative research to describe the general characteristics of educational beliefs of rural primary school principals by macroscopic investigation, explore the realistic performances, the factors of influence, and impacts on school-running practice by microscopic case study. There are substantial variations in the definitions of educational beliefs in previous studies. In this research, the educational beliefs of school principals are defined as the educational views and ideas that school principals believe in firmly and undoubtedly. It includes six aspects: school planning, school culture, curriculum and teaching, development of teachers, internal school management, and external school environment etc. The questionnaire is constructed on the basis of these aspects.

Through questionnaire survey of 420 primary school principals, the general characteristics of the educational beliefs of rural primary school principals are: (1) the overall level of educational beliefs of rural principals is "good", while it is uneven in other levels; (2) there are significant differences on origin, ethnicity, age, teaching age and professional title variables; (3) there are no significant differences on gender and educational background variables.

Subsequently, fieldwork including interview, observation, and document inspections was conducted to collect qualitative data for the case study. Based on Bronfenbrenner's ecological systems theory, this research analyzed the influencing factors of principals' beliefs such as family, important people, relations between family and school, other schools, backward regional culture and earthquake, and elaborated the actual effects of school-running practices from school culture construction, changes of students and teachers, and parents' feedback etc. Based on the above analyses, the conclusions are: (1) educational beliefs do not necessarily lead to changes in practice, which are also constrained by other factors; (2) the actual situation of the school determines the focus of the principal's educational beliefs; (3) in the educational beliefs system, there is a belief that has not been publicly declared but has had an important impact on practice; (4) the lack of belief education for pre-service teachers; (5) the advocacy of ideas has no meaning for the promotion of educational beliefs, and educational practice has a great influence on beliefs.

Last but not least, some suggestions for promoting educational beliefs of rural primary school principals in China, limitations and prospects of this research were discussed.

Key words: Educational beliefs, Rural primary school principal, Educational beliefs of school principals, China

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Preface

There is a huge gap between urban and rural education in China. The most important part for reducing the gap lies in teaching staffs, in which the principal, as the chief teacher, is the key person and his own change is crucial to the whole education reform while the change should be started with beliefs. This doctoral dissertation thesis is a systematic research of educational beliefs of school principals in Chinese rural areas. The aims are to explore educational beliefs of primary school principals in Chinese rural areas, to improve the level of professional development, with the wish to improve the efficiency of management which in turn to promote the reform and development of rural primary education. The specific objectives are as follows:

To describe the current status of educational beliefs.

To seek for the mechanism of formation and change of educational beliefs.

To explore the influence of the educational beliefs on school-running practice.

To put forward the promotion suggestions of educational beliefs of rural primary school principals.

The reasons why the researcher chose this topic are as follows: Firstly, there are few researchers paying special attention to school principals' beliefs. The literature analysis shows that there are many researches on teachers' educational beliefs, especially on teaching beliefs, but there are few researches on principals, especially on rural principals, let alone systematic researches related to current status, the mechanism of formation and change, the influence of school-running practice and the promotion suggestions. Secondly, the researcher is interested in rural school reform and development. She was born and grew up in rural area. She has deep emotion attached there. She has studied and engaged in primary education for more than 20 years. Therefore in this research, the researcher wants to try her best to contribute to rural education.

According to the research aims and questions, the research content is divided into six parts, namely, introduction, contents of related researches, research design, the macro-investigation on educational beliefs of rural primary school principals, the micro-case on educational beliefs of the rural primary school principals, and research conclusions and reflections. The main contents of each chapter are summarized as follows:

-Chapter1 Introduction

This chapter mainly introduces the general situation of this research, including the

following three parts: the emergence of the question, the theoretical foundation, and definition of terms. This study is based on the theory of professionalization of school principals and the ecological systems theory.

-Chapter 2 Content of related research

This chapter includes three parts: firstly, the connotation and structure of belief; secondly, the connotation and structure of educational beliefs, the mechanism of formation and change of educational beliefs, and the relationship between educational beliefs and educational behaviors; thirdly, research on educational beliefs of school principals related professional qualities, leadership, and professional development of rural school principals.

-Chapter 3 Research design

This chapter is to illuminate the research aims, research questions, research hypotheses, methodology, methods, research ideas, and ethical considerations. This research adopted the mixed research methodology and specific research methods include literature method, investigation method and fieldwork. Specifically, investigation section mainly involved investigation areas, respondents, instrument, statistical analysis and research stages etc. Fieldwork section mainly included case school principal, qualitative interview, observation, document inspections and process of analyzing the qualitative data and so on.

-Chapter 4 A macro-investigation on educational beliefs of rural primary school principals

The main content of this chapter is to quantify the data obtained from the questionnaire survey, statistically analyze the results through relevant software, and then draw conclusions of the macro-investigation.

-Chapter 5 A micro-case on educational beliefs of rural primary school principals

The main content of this chapter is to sort out and analyze the qualitative data obtained from interviews, observations and document inspections, describing the realistic performances of Mr. Liu's educational beliefs, analyzing the influence factors and presenting the actual results in school-running practice, and then draw conclusions of the micro-case study.

-Chapter 6 Research conclusions and reflections

The content of this chapter is to draw the conclusions of the full text and put forward implications, limitations and prospects of this research.

This research has theoretical and practical significance to systematical exploration

of the educational beliefs of rural primary school principals in China.

From the theoretical perspective, the previous researches mainly focused on teachers' educational beliefs. There are very few researches on principals' educational beliefs, especially on rural primary school principals. This study not only contributes to enriching the theoretical achievements of educational beliefs, but also expanding and deepening the research of school principals by exploring the mechanism of formation and change and the influences of school-running practice. Furthermore, it also contributes to the improvement of rural basic education theories.

From the practical perspective, this research takes Sichuan Province as an example, adopting random sampling to select 420 primary school principals; a rural primary school principal is chosen as a typical representative, and relevant persons involving school teachers and parents are interviewed. Through literature method, investigation method and fieldwork, this research attempts to describe the current status, seek for the mechanism of formation and change, explore the influence on school-running practice, and put forward promotion suggestions of educational beliefs. The research conclusions and suggestions contribute to promoting the professional development of rural primary school principals, improving the leadership and the effectiveness, promoting overall urban-rural development, and providing some reference for government education decisions and further related research.

Chapter 1 Introduction

1.1 The emergence of the question

Today, equity and quality are two major themes of educational development all over the world. According to the report of the 19th National Congress of the Communist Party of China, "building a strong country of education is a fundamental project for Chinese great rejuvenation. We must give top priority to education, speed up education modernization, and conduct people's satisfactory education (Xi, 2017a)." At present, Chinese education has achieved good progress and created the largest education system in the world. The equity and quality in education have been significantly improved, which has guaranteed the millions of people's right to education, greatly improved the national qualities, and vigorously promoted economic and social development. However, in the process of the continuous improvement and development, the educational disparity between urban and rural areas has shown an ever-increasing trend, that is, the unbalanced development of urban and rural education in China and the increasingly serious problem of education equity. In China, the unbalanced development of urban and rural education has seriously affected education equity and quality. The key to the equity and quality in urban and rural education is constructing rural teaching staffs. On January 16, 2018, China released a film "The Class of One", which describes a real story of an ordinary rural teacher who has been working at a school in mountainous areas for more than 20 years. In facing the last student, the teacher still adheres to the teaching position and helps the student complete his studies. In China, there are quite a few teachers like him. Mr. Song in the film is just one of the millions of rural teachers. They root in the countryside and stick to the public paradox of "for the country" or "away from the country". They have played an important role in ensuring equity of education in China.

In 2016, China has a total of 229,800 schools in public compulsory education stage, 142,000,000 students and 9,276,900 full-time teachers, in which there are 177,600 primary schools, 99,130,100 students, 5,537,300 school staffs in primary schools[1] (excluding primary sections of combined primary and lower secondary schools

[1] The numbers of complete secondary schools and their educational personnel are calculated into the number of senior secondary education, the numbers of combined primary and lower secondary schools and their educational personnel are calculated into the lower secondary education, the numbers of the combined primary and secondary schools and their educational personnel are calculated into senior secondary education. The fulltime teachers are classified by educational level. So, school staffs are less

and combined primary and secondary schools), 5,789,100 full-time teachers; student-teacher ratio is 17.12:1. There are 52,100 lower secondary schools, 43,293,700 students, 3,997,500 school staffs in lower secondary schools (including combined primary and lower secondary schools, excluding lower secondary sections of complete secondary schools and combined primary and secondary schools), 3,487,800 full-time teachers; student-teacher ratio is 12.41:1. The number of rural migrant workers' children[2] in the city is 13,947,700 in whole national compulsory education stage, in which 10,367,100 students study in primary schools and 3,580,600 students study in lower secondary schools (Ministry of Education of the PRC, 2016). In whole national compulsory education stage, there are 20,192,400 left-behind children[3] lived in rural areas, 13,836,600 students in primary schools and 6,355,700 in lower secondary schools (Ministry of Education of the PRC, 2015)[4]. In addition to public schools, China has a total of 5,975 private primary schools admitting 7,563,300 students and 5,085 private lower secondary schools admitting 5,328,200 students (Ministry of Education of the PRC, 2016). Obviously, schools and students of private schools are much less than public ones. This research focuses only on public schools, so all kinds of private schools at all levels are not involved. All of the compulsory education schools in China, 67.04% of primary school students and 70.03% of primary school teachers are located in townships and villages; 65.60% of lower secondary school students and 66.71% of lower secondary teachers are located in townships and villages (Ministry of Education of the PRC, 2016). It can be seen that, in China, the main body of compulsory education is still in rural areas.

Basically, the rural population is large. Among the 31 provinces, autonomous regions, municipalities and military personnel[5] of mainland China, the population who lived in cities and towns is 666 million, accounting for 49.68%; the population who lived in villages is 674 million, accounting for 50.32% (The National Leading Group Office of the Second National Agricultural Census, 2010). But the population quality is not reasonable. Concerning the educational level and the average education age, there is a significant difference between urban and rural areas, which is a heavy burden for

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than full-time teachers.

[2] Rural migrant workers' children, refers to the adolescents living together with their parents and studying in the city, but their household registration also in rural areas.

[3] Left-behind children, refers to adolescents who are under 16 years old, which parents or one parent went out to work without custody.

[4] The relevant statistics were not published in 2016, so the 2015 data was used.

[5] Chinese military personnel are independent of the household registration management system. Once enroll, household registration is canceled, turn to be military management. After withdrawal of active duty, military membership will be canceled, and then apply for household registration again.

Chinese modernization. Rural education has been the key and difficult problem for Chinese education reform and development. Its popularity and educational quality directly affect the development of Chinese basic education. However, rural education has faced many problems such as shortage of teachers, small scale, and lack of resources. The unbalanced distribution of quality education resources between urban and rural areas is a topic for discussion that cannot be avoided. An annual report (Wu & Qin, 2017) provides a set of survey data: In 2015, there were 283,560 primary schools and teaching sites in the country, including 200,199 in rural areas, which accounted for 70.6% of the total country. There are still 111,420 rural small-scale schools with less than 100 students in all of China, accounting for 55.7% of the total number of rural primary schools and teaching sites. There are 9,667 no-student schools across the country and 33,900 rural teaching sites with less than 10 students. This group of figures shows that more than half of rural primary schools in China are small-scale schools. Most of the small-scale schools are located in poverty counties and mountainous counties, with the poorest families. Chinese rural education has a long way to go.

In order to transform heavy burden of human resources into advantages, a series of policies and measures have been adopted to increase investment in rural education. Firstly, the Construction of New Socialist Countryside in 2005 and the Rural Revitalization Strategy in 2017 have provided important resource support, policy support and system support. Secondly, some economic policies have been conducive to the development of rural education. For instance, exempting from compulsory education tuition and fees, the rural compulsory education was guaranteed by comprehensive national finance. Finally, a series of special projects have been carried out to improve rural school conditions and improve the quality of teaching staffs (Ke, 2010). Today, the difference on funding and hardware facilities between urban and rural education is gradually narrowing, and the rural education environment has been further improved. However, in the modernization process that is centered on urbanization and industrialization, the city has become the leading and main body of modernization whilst the countryside passively follows. The urban-rural division and binary contradiction left over from the 1950s to the 1970s artificially increased the split between urban and rural areas (Wen, 1999). The unbalanced development of education in urban and rural areas in China is still very clear. The researcher received primary and lower secondary education in rural areas. In a 22-year career of studying and engaged in teacher education, the researcher deeply experienced the backwardness of rural

education. How to change this status and promote the balanced development of urban and rural education is a question that the researcher has been thinking about all the time.

Teacher is the foundation of education. Rural teachers are the backbone of Chinese basic education. The national-level training plan for primary and secondary school teachers started in 2010 is an important measure to improve the overall quality of primary and secondary school teachers, especially rural teachers. The *Rural Teachers Support Program (2015-2020)* proposed that efforts should be made to create a contingent of teachers of high quality who are willing to dedicate themselves and take root in the countryside. This will provide strong teacher support for basic education modernization. This plan is the first of its kind for the construction of a team of rural teachers in the history of the People's Republic of China. It means that the construction of rural teachers has risen to a national strategy (General Office of the State Council of the PRC, 2015). *The Opinions on Comprehensively Deepening the Reform and Development of the Teaching Staff in the New Era* promulgated in January 2018 is the first document devoted to the construction of the ranks of teachers since the founding of the People's Republic of China. It clarified the special importance of teachers and proposed to improve the protection mechanism of teachers in primary and secondary schools to enhance the treatment of rural teachers (CPC Central Committee & State Council, 2018). *The Action Plan for the Promotion of Teacher Education (2018-2022)* issued jointly by the five ministries such as the Ministry of Education of the PRC, clearly put forward actions to improve the quality of rural teachers (Ministry of Education of the PRC, National Development and Reform Commission of the PRC, Ministry of Finance of the PRC, Ministry of Labour and Social Security of the PRC, & State Commission Office of Public Sectors Reform, 2018). School principals occupy an influential position in society and shape the teaching profession. They are lead professionals and significant role models within the communities they serve. The values and ambitions of school principals determine the achievements of schools (Department for Education, 2015). Soviet educator Sukhomlinsky said: a good president is a good school. Chinese famous educator Xingzhi Tao also pointed out that the principal is the soul of a school. To some extent, what kind of principals brought about what kind of teachers and students and resulted in what kind of schools (Tao, 1983). Baosheng Chen, the Chinese Minister of Education in the afternoon of the 12th National People's Congress 5th conference presented that the teaching quality of rural areas will gradually increase under the leadership of excellent school principals. It can be seen that, the

school principal, as the chief teacher, is the key role and his own change is crucial to school reform and development.

However, development and change is a systematic project that involves the various factors such as knowledge, belief, opinion, attitude, behavior, and interest. The belief is core, governing other aspects (UNESCO, 1996). The real educational change lies in human beliefs and values (Lin, 2005). Education is not only imparting knowledge, and it is more important that one soul affects another soul. Education must be a belief-based activity. If based on belief, education activities could be natural and sincere, with persistence and immersion, rather than perfunctory. Teachers' behaviors should be more spontaneous and initiative, highly conscious, based on living life, rather than forcible, blind, mechanical, numb and indifferent (Xiao, 2002).

In this research, the reasons researchers take Sichuan Province of China as an example are as follows: on the one hand, Sichuan is located in southwest China and as the region includes 21 cities (autonomous prefecture), but the level of education and economic development in the region is unbalanced. It includes both pilot areas of national-level education reform such as Chengdu which represents higher levels of education development in China, and a large number of "old, minority, poor" areas[6]. The situation of unbalanced economic and educational development in various regions is universal in the whole China. Limited to time and energy, we can regard Sichuan as the epitome of China. On the other hand, Sichuan is the place where the researcher was born, grew, learned, worked and lived. She is emotionally attached to Sichuan, especially the rural areas, so she wants to try her best to contribute to Sichuan's rural education.

1.2 Theoretical foundation

This research is based on two theoretical foundations: the theory of professionalization of school principals and the ecological systems theory. The former provides a theoretical basis for the content analysis of the principals' educational beliefs, and the latter provides an analysis framework for the issues of formation, change, and promotion of principals' educational beliefs.

1.2.1 The theory of professionalization of school principals

Researchers, represented by Professor Chu Hongqi, have published a series of

[6] It mainly refers to the old revolutionary base areas, ethnic autonomous areas and underdeveloped areas.

research papers focusing on the professionalization of principals since 2002. They take specialization as the dynamic process of which an ordinary professional group gradually conforms to the professional standards, and becomes a specialized profession and obtains the corresponding professional status. From the professional status of principals, the career of principals has not yet reached the standard of professional occupation and is still at a semiprofessional stage (Chu, 2005). The professionalization of the principal is divided into two levels. From the perspective of the professional group's level, it refers to the process of the development of the principal's profession from the semiprofessional stage to the professional stage, that is, the whole professional group has gradually reached the professional standard. From the perspective of principal's individual level, it also refers to principal professional development, which means the process of renewal, evolution, and enrichment of principal's inner professional structure. The core of principal's professionalization is the process of the continuous development of the principal's occupation group and individual，which would meet the professional standards. The two guarantee factors for this process are the principal management system and the principal's professional knowledge. Accordingly, Yang (2006) proposed two ways for the professionalization of principals: first, the construction of principals management system, and the second is principals training.

Many countries have established their own professional standards for school principals. This research is based on the Chinese issue, therefore it refers to the professional standards for compulsory education school principals, in order to promote the professional development of compulsory school principals, build a high-quality school principals group, and promote the urban-rural balanced development of compulsory education. The Ministry of Education of the PRC issued *Professional Standards for Compulsory Education School Principals* on February 4, 2013. The standards are the basic requirement for the professional quality of the qualified principals in compulsory education schools. It is an important basis for the formulation of the qualification standard, the standard of the training course and the evaluation standard for the principals of compulsory education. The professional standards consist of five basic concepts, six professional duties and four aspects of implementation suggestions. Among them, the principals' six professional duties are refined to 60 professional requirements. There are 10 requirements for each professional duty which consist of three aspects: professional comprehension and understanding (three items), professional knowledge and method (three items), and professional ability and behavior

(four items). The professional comprehension and understanding cover the whole contents of principals' educational beliefs. Based on this, the researcher designed a self-designed questionnaire—"Questionnaire of Educational Beliefs of Primary School Principals". The standards provide a theoretical framework for the analysis of the principals' educational beliefs. The specific contents of the professional comprehension and understanding of the six professional duties are as follows:

> Set the development plan of school: 1. Make clear the orientation of school running, fulfill the mission of implementing compulsory education, guarantee the equal acceptance of good compulsory education for children, and ensure the right to receive education for the children from migrant workers' families, children with disabilities and children with economic difficulties. 2. Pay attention to school's strategic development, gather the wisdom of teachers and students, set up the common goal of school's development, and shape the decision-making force for school's development. 3. Respect school's tradition and school realities, refine school's running concepts and create school's characteristics.
>
> Construct the school culture: 11. Put moral education in the primary position of quality education, and comprehensively strengthen the construction of school moral education system. 12. Taking the school culture construction as the important aspect of the school moral education work, attach importance to the implicit educational function of the school culture, and take the cultural education as the important content and way of running school. 13. Have a good sense of the traditional culture, give full play to the contemporary significance and educational value of the traditional culture, and pay attention to the important role of the regional culture.
>
> Leading curriculum and teaching: 21. Adhere to all students, teach students in accordance with their aptitude and personality, and improve the quality of education and teaching. 22. Respect the law of education and teaching, and cultivate students' sense of responsibility and the spirit of innovation and practical ability. 23. Respect teachers' teaching experience and wisdom, and actively promote teaching reform and innovation.
>
> Guide professional growth of teachers: 31. Teachers are the most valuable human resources in the reform and development of schools, and the principal should respect, trust, unite and appreciate every teacher. 32. Principal is the first person responsible for the

professional development of teachers who would take school as the main field for teachers to achieve their professional development. 33. Respect the law of teachers' professional development and stimulate the internal motivation of teachers.

Optimize internal management: 41. Operate school by law, and consciously accept the supervision from teachers, staff, and society. 42. Run school with morality, treat people and things objectively and fairly, discipline oneself strictly, and form the spirit of honesty and dedication. 43. Advocate democratic management and scientific management, insist on teaching, managing and serving all for educating people.

Coordinate the external environment: 51. Insist on serving the society (community) as an important function of the school, and take the social responsibility. 52. Persist in win-win cooperation as a criterion for school external relations, and actively carry out cooperation and communication with the external environment. 53. Firmly believe that the positive interaction between school, family, and society is the important embodiment of school running level. (Translated from *Professional Standards for Compulsory Education School Principals.)*

1.2.2 Ecological systems theory

Ecological systems theory was developed by Urie Bronfenbrenner (1979), who identified five environmental systems with which an individual interacts to explain how the inherent qualities of an individual and his environment interact to influence how he will grow and develop. Bronfenbrenner stressed the importance of studying an individual in the context of multiple environments. Each of five systems inevitably interacts with and influences each other in every aspect of the individual's life. The levels of systems are categorized from the most intimate level to the broadest. The theory is also commonly referred to as the ecological systems framework. (see Figure 1)

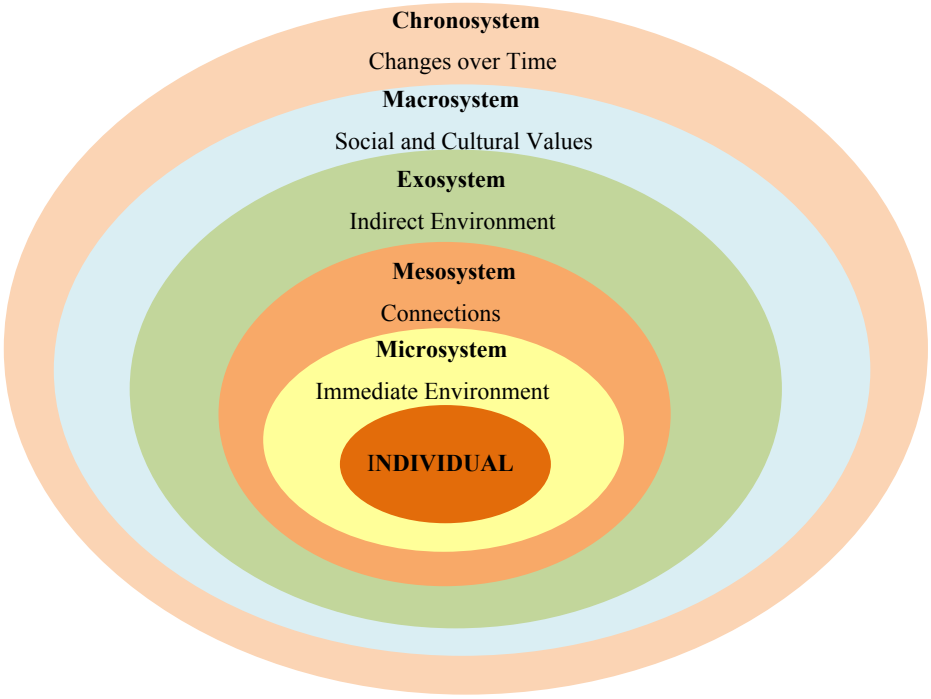

Figure 1: Bronfenbrenner's ecological systems theory

Microsystem: The institutions and groups that most immediately and directly impact the child's development (family, school, religious institutions, neighborhood, and peers).

Mesosystem: Interconnections between the microsystems, such as interactions between the family and teachers, relationships between the child's peers and the family.

Exosystem: Involves links between a social setting in which the individual does not have an active role and the individual's immediate context.

Macrosystem: Describes the culture in which individuals live. Cultural contexts include developing and industrialized countries, socioeconomic status, poverty, and ethnicity. A child, his or her parent, his or her school, and his or her parent's workplace are all part of a large cultural context. Members of a cultural group share a common identity, heritage, and values. The macrosystem evolves over time, because each successive generation may change the macrosystem, leading to their development in a unique macrosystem (Kail & Cavanaugh, 2010).

Chronosystem: The patterning of environmental events and transitions over the life course, as well as sociohistorical circumstances.

Per this theoretical construction, each system contains roles, norms, and rules which may shape psychological development. Since its publication in 1979,

Bronfenbrenner's major statement of this theory, the ecology of human development has had widespread influence on the way psychologists and others approach the study of human beings and their environments (Jeronimus et al., 2014). As a result of his groundbreaking work in "human ecology", these environments—from the family to economic and political structures—have come to be viewed as part of the life course from childhood through adulthood.

This research attempts to use this theoretical framework to analyze the issues of formation, change, and promotion of educational beliefs. Microsystem, the institutions and groups, most immediately and directly impacts the principal's development including family, school, community, education administrations, friends (working or non-working relationship), students, staffs, and parents. Mesosystem is the interconnections between the microsystems, for instance, interactions between the school and family, parents and teachers, teachers and students. Exosystem is to involve links between a social setting in which the individual does not have an active role and the individual's immediate context, for instance, the influences from other schools and principals. Macrosystem means to describe the culture in which individuals live. In this research, cultural contexts include the level of economic development, modern civilization, and educational development in Chengdu, Dujiangyan, and Longxiang of Sichuan, China. Chronosystem is the patterning of environmental events and transitions over the life course as well as sociohistorical circumstances. In this research, the "2008 Sichuan earthquake"[7] probably is the important factor.

1.3 Definition of terms

All scientific researches must be based on precise statements of the concepts used to clearly express understanding and the criteria used to specify the relevant terms. In this research, several concepts related to the research topic are defined as follows:

(1) Belief: In this research, belief refers to the concept that individual believes in firmly and undoubtedly. The core of belief is cognition, but often accompanied by profound emotional experience. It can express a strong willpower, show a certain

[7] 2008 Sichuan earthquake also known as 5.12 earthquake or Wenchuan earthquake, occurred at 14:28:01 China Standard Time on May 12, 2008. Measuring at 8.0 Ms, the earthquake's epicenter was located 80 kilometres (50 mi) west-northwest of Chengdu, the provincial capital, with a focal depth of 19 km (12 mi). Over 69,000 people lost their lives in the quake, including 68,636 in Sichuan Province. 374,176 were reported injured, with 18,222 listed as missing as of July 2008.

attitude, and ultimately lead to changes in individual behaviors.

(2) Educational beliefs: "Educational beliefs refer to the confirmation and adherence to the certain educational career, educational theories, basic education views and principles (Gu, 1998, pp. 1863-1864)." In this research, educational beliefs refer to the educational views and ideas that individual believes in firmly and undoubtedly.

(3) Rural area: The definition of "rural area" by the UN Food and Agriculture Organization has two criteria. One is the place and manner of residence, and the other is the type of work that the residents are engaged in. At present, the academic community divides China into urban and rural areas mainly in three ways: firstly, city, county-level town, and countryside; secondly, city (including county-level town) and countryside; thirdly, city and countryside (including county-level town) (Deng, 2013). This research uses the second way. This research considers rural area as a geographical concept. It is an agricultural economy area that is far from city. Specifically, all villages and townships except the cities (including county-level towns) belong to rural area.

(4) Rural primary school principal: *Professional Standards for Compulsory Education School Principals* points out that the principal is the professional who performs the duties of school leadership and management (Ministry of Education of the PRC, 2013). In this research, rural primary school principal refers to professional who performs the duties of school leadership and management in primary schools located in villages and townships below the county level.

(5) Educational beliefs of school principals: In this research, the educational beliefs of school principals refer to the educational views and ideas that school principals believe in firmly and undoubtedly. It includes six aspects: school planning, school culture, curriculum and teaching, development of teachers, internal school management, and external school environment etc.

Chapter 2 Content of related research

The educational beliefs of rural primary school principals are based on an accumulating knowledge from multiple fields and knowledge itself is related to belief, educational belief and primary school principals. In order to provide a complete theoretical framework for further discussion, the researcher has combined the previously related literature, which is divided into three parts.

2.1 Related research on belief

2.1.1 Research on the connotation of belief

To accurately grasp the connotation of educational beliefs, the understanding of the connotation of belief is the foundation. The concept of belief originated from ancient Greece. Since Plato's idea of belief in the book *The Republic*, it has been repeatedly proposed in the history of modern philosophy and is enriched by Hegel and his successors (Encyclopedia of China, 1991, p. 462). Later, not only philosophers but also psychologists began to study this concept. From the early psychological literature, the study of belief and belief systems began in the early twentieth century, especially by social psychologists (Thompson, 1992). However, due to the increase in the influence of the behaviorist idea of learning, more researchers turned to observable human behavior, and the interest in belief was getting cold. With the new development of cognitive science in the 1970s, concerns about beliefs and belief systems reappeared (Abelson, 1979). Since there are many referents of "belief", the definition of this term is very diverse and people cannot agree on this term. Many researchers have created their own terms: conceptions, philosophy, ideology, perception, world view, image, disposition, and so on.

(1) The semantic explanation of belief

According to the *Oxford English Dictionary*, the word "belief" mainly has the following two explanations: 1. An acceptance that something exists or is true, especially one without proof. 1.1 Something one accepts as true or real; a firmly held opinion. 1.2 A religious conviction. 2. (belief in) Trust, faith, or confidence in (someone or something). It can be seen from the above explanation, belief should be understood from three aspects: ① the standard of discerning belief, to accept it as true and real; ② the content of belief, its referent to people, fact and opinions; ③ the external manifestations of belief, namely, trust on the emotion level and determination on the

volition level. Chinese culture also tends to regard belief as a noun, and mainly concern about the content. *New Contemporary and Ancient Chinese Dictionary* (1995, p. 140) gives such a definition: "belief is convinced ideas and opinions." The interpretation of belief in semantics suggests that we should define it from three dimensions: judgment criteria, content, and expressions of emotion and volition.

(2) The philosophical explanation of belief

Plato (Z. M. Zhang, Trans. 2006, p. 102) argued that belief is a state of mind, and he suggested that knowledge is the true belief that is proved or defended. The British philosopher Russell (J. Y. Zhang, Trans. 1983, p. 137) suggested that belief is a state of mind that includes both psychological and physical status. It is a combination of cognition, emotion, and volition. German philosopher Rahner (as cited in Liu, 1982, p. 445) believed that belief is faith. It is an ultimate concern, it is the inner transcendence of the real world, and it manifests itself as an infinite eternal desire for space-time structure. Kant (Z. M. Wei, Trans. 1991, p. 615) suggested that belief in the authenticity divides convince and confidence. He pointed that if the judgment made is valid for all who is rational, then its basis is objectively sufficient, and it is true and called convince, and if it is believed, the judgement is based on only the main character of the subject, it is confidence. *Encyclopedia Britannica (2)* (in Chinese, 2002, p. 345) pointed out that belief refers to accept or agree with a psychological set or attitude, with the lack of sufficient knowledge to ensure that a proposition is true.

In these philosophical explanations, the following points are worth noting: First, the definition concerns the premise of belief is "without sufficient reasonable understanding", indicating that belief may be "not logically true". Second, the definition emphasizes its psychological state is "a psychological set or attitude". Third, it is emphasized that the content of belief is a proposition rather than a specific person or thing.

(3) The psychological interpretation of belief

Soviet Union's psychologist Kluttsky (B. R. Zhao, Trans. 1984, pp. 71-72) pointed out that the important motive of behavior is belief. Belief and ideal are linked with each other. Belief involves doctrines, views, opinions, and knowledge of nature and society. People do not doubt their truth, knowing that they are inarguably conclusive, and try to use them as a guideline in their lives. The emotional aspects of belief are associated with the deep feelings toward it, and belief itself is not only easy to understand and comprehend, but also deeply felt and experienced. This definition reveals the cognitive

and emotional component of belief, and clearly points out that belief can be realized and experienced.

Reber (B. S. Li, Trans. 1996) pointed out that belief refers to the affective acceptation of a proposition, statement or doctrine. Philippou and Christou (2002) pointed out that belief is an individual assessment, judgment, and opinion that constitutes the subjective knowledge of the self and the environment. From these two definitions, it can be seen that belief has the following characteristics: first, the belief is subjective with a clear personal color; second, belief contains cognitive, affective and evaluative components.

Encyclopedia of China (Psychology) (1991, p. 462) pointed out that "belief is people's attitude tendency toward someone, something or some ideas." This definition regards the content of belief as "an attitude tendency" that includes both attitudes toward people and things, as well as ideas. Obviously, this is different from the judgment that the content of belief is just a proposition.

In *Psychology Dictionary* (1986, p. 122) compiled by Yuan and You, belief is understood as "the principles and ideals that people should follow in their lives." And it pointed out: "This belief is profound and solid. With ideal as its center, a belief is gradually formed because people take a positive attitude to the reality, do reliable independent thinking of knowledge and have a strong sense of responsibility to their duties. Belief is usually fused with emotion and volition, manifested as a human life stand, dominating the human action." This definition emphasizes the content of belief, that is, "certain principles and ideals", beliefs are characterized by "stability" and the "relationship" associated with emotion, volition, and action.

Yu and Xin (2000, p. 16) believed that "belief can be understood as individual's firm view on an opinion and insight about nature and society." This definition also highlights the content is "opinion and insight", the feature is "firm", and the essence is "individual's view".

Li believed that belief refers to the guidelines of an internal decision and external behavior. Its content is quite extensive; it is what the individual sticks to, somewhat similar to the constructivists' original knowledge, although it will be changed, the change will not happen easily; a part of it is not difficult to detect, but there is a considerable hidden part, and even the individual itself is not aware of it (as cited in Lu, 2004, p. 6). Zhu and Ye (2003) defined belief as a personal psychological filter to help individuals define their own environment; to affect people's acceptance and

interpretation of information; and it is the basis for people's choice and action. These two definitions are made primarily from the functions and characteristics of belief.

From the above three different perspectives of belief, we can see that from the perspective of semantics, belief is the acceptance and trust of people, opinions, and things; from a philosophical point of view, it is emphasized that the content of belief is a proposition, and belief highlights the subject of a certain theory and the truth of the idea of an inner confidence, mainly related to cognition; from the psychological point of view, belief refers to the views and principles that are motivating and supporting people's behavior, and it has cognitive components and stresses the affective, volitional and attitudinal components, and its relationship with behavior. When we define it, we need to focus on its different components and need to define it from multiple perspectives.

2.1.2 Research on the structure of belief

It is generally believed that the belief system is a system of individual beliefs and evidence that are consistent, mutually reinforcing or mutually supportive.

Rokeach (1980), in his book *Belief, Attitude and Value*, pointed out that belief is expected, conceived and implicit tendency. The belief system makes individuals have stable and sustained personal characteristics of speeches, behaviors, personalities, and attitudes. Researchers can speculate on individual belief from his or her words and deeds, and personal belief cannot exist without the belief system. He described the belief system in terms of the "center-edge" dimension, proposing three hypotheses: ① Not all beliefs are of equal importance to everyone, and there will be core belief and edge belief. ② The closer to the core, the more stable and sustained, and it can withstand the impact of various changes. ③ The closer to the core, the more extensive and profound the response and impact will be to the whole belief system, when there is a change.

Green (1971) introduced three dimensions, believing that the belief system has three characteristics: ① Quasi-logicalness. Belief is not made up of the prerequisites and conclusions of the logic of law but arranged by someone's opinion. It is because when the belief system lacks logic, contradictory beliefs would be held. ② Psychological centrality. Belief can be organized according to psychological importance, so in the belief system, there is a hierarchical relationship between central and edge belief. The former is the strongest, and the latter is the easiest to change. ③ Cluster structure. Beliefs are aggregated in the form of clusters, more or less

independent of other combinations and protected by other beliefs.

2.1.3 Summary

In summary, the concept of belief is very complex. In this research, belief refers to the concept that individual believes in firmly and undoubtedly. The core of belief is cognition but often accompanied by profound emotional experience. It can express a strong willpower, show a certain attitude, and ultimately lead to changes in individual behavior. Although there is no unanimous definition, it still has the following characteristics, which will help us understand educational beliefs:

Authenticity. From the philosophical point of view, belief is the subject's presupposed true judgement of a proposition. This judgment is not verified and manifests a hypothetical authenticity.

Consciousness. Some people think that belief can be understood, experienced and stated; others believe that some beliefs are conscious and can be perceived, and the others exist in the subconsciousness and cannot be perceived, but they will become manifested in behavior.

Evaluation. The definition of many beliefs points out that beliefs are closely related to attitudes and values, highlighting the evaluative and affective components of beliefs.

Content composition. Beliefs are complex, and many definitions contain elements of cognition, emotion, volition, attitude, values and evaluation.

Structure. The belief system is based on individual's psychological centrality and arranged propositions in the cluster structure in accordance with the "center-edge" rules.

The relationship between belief and behavior. Most definitions suggest that beliefs affect or guide people's minds and actions.

2.2 Related research on educational beliefs

Before summarizing the relevant research of educational beliefs, there is a phenomenon worthy of clarification. On the current research on educational beliefs, teachers' educational beliefs are widely concerned and become the core of educational beliefs research. Researchers commonly adopted the two concepts of educational beliefs and teachers' beliefs, the specific meaning of which is different but closely linked. There are mainly three relationships. First, educational beliefs include teachers' beliefs, believing that teachers' beliefs refer to teachers' educational beliefs. Xie (2006) pointed out that because the activities of teachers are not limited to the classroom, their beliefs exist in all the activities of the school which affect a variety of educational practice, so

the study of teachers' beliefs must go beyond the study of teaching beliefs. Second, teachers' beliefs include educational beliefs, believing that teachers' beliefs are a large belief system. Ma (2012) proposed teacher beliefs include the three layers: life belief, educational belief, and teaching belief. Life belief means teachers' understanding of life and its highest value pursuit. The educational belief means teachers' understanding of the social value of his or her profession. The teaching belief means teachers' understanding of teaching significance and process. Among above three layers, educational beliefs are the core part and backbone of teachers' beliefs. Third, educational beliefs and teachers' beliefs are used equally. It is clear that no matter what kind of relationships, no matter educational beliefs or teachers' beliefs is adopted, the core is the same, that is, subject's education-related beliefs. Only in existing researches, the subject is mostly the teacher.

2.2.1 Research on the connotation and structure of educational beliefs

In the 1970s, educational academia began to change the research direction of teacher education. Researchers in Britain and the United States and other western developed countries turned from teachers' explicit behavior to the internal psychological and cognitive process in their teaching and professional development. With this turn, teachers' beliefs have become a subject of much concern (Richardson & Pleasant, 2002). Chinese scholars began to pay attention to the problem of teachers' beliefs in the early 1980s. The articles devoted to the issue of teachers' beliefs appeared in educational journals. Since then, a special discussion on teachers' beliefs in China is devoid until 2000.

Philippou and Christou (2002) regarded belief as an integral part of the overall emotion, pointing out that it should not be seen as a component against knowledge, but should be an important and independent field of educational research. Zhao (2004) believed that teachers' beliefs are the ideas, viewpoints, and suppositions about people, nature, society and education, which is confirmed and believed by teachers themselves. It is the inner guide to teacher's internal mental state, deep existence significance and their teaching activities. Lin (2008) thought that teachers' beliefs are teacher's assumptions about education and teaching. Su defined teachers' teaching beliefs (as cited in Xie, 2006, p. 38) from three aspects: the structure of the beliefs, the degree of confirmation and the component of belief content. According to the definition in *Education Dictionary*, educational belief refers to the confirmation and adherence to the certain educational career, educational theories, basic education views and principles.

Its formation is affected by both an individual's received education and the individual's educational practice. The educational belief of each person varies from one another according to the era they live in, their social status and philosophy. People from different societies, times, classes and experiences will have different educational beliefs. Porter and Freeman (as cited in Xie, 2006, p. 38) suggested teachers' beliefs encompass beliefs about the student, learning, the role of schools in society, the role of teachers, curriculum, and teaching in the education process. Song (2004) believed that the educational belief is people's confirming and believing on educational ideals, views, theories and basic education stands, including the educational belief of the public, the education managers, and the teachers.

The subject of this research is the school principals' educational beliefs, which, together with teachers' and others' educational beliefs, becomes a cluster of belief system, which is a combination of beliefs about education. At the same time, the teacher's educational beliefs and their beliefs about people, nature, and society together, constitute teachers' combination of beliefs; the school principals' educational beliefs, together with their beliefs about the people, nature, and society, constitute school principals' combination of beliefs. Educational beliefs, teachers' beliefs, and school principals' beliefs belong to a large belief system, and they encompass one another but are relatively independent. The relationships are as Figure 2. "A" means teachers' educational beliefs; "B" means school principals' educational beliefs, which is the subject of this study; "C" means the common educational beliefs of teachers and principals.

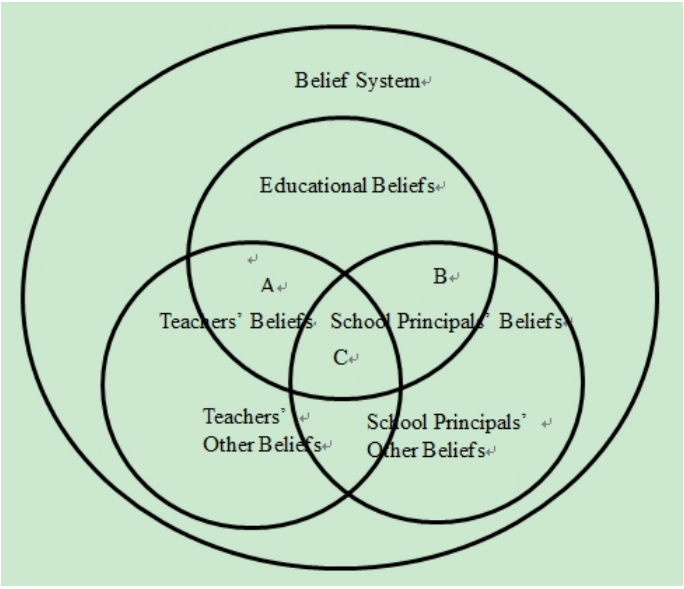

Figure 2: The relationships of educational beliefs system

From current researches, most of the researches on educational beliefs system focus on teachers, especially teachers' teaching beliefs, and the other educational beliefs are often ignored. This research needs to stimulate the change from "teachers' teaching beliefs" to "educational beliefs", and then to "school principals' education beliefs".

If teachers' behavior of teaching is an act of education in nature, then school principals' behavior is, in essence, a kind of management behavior. The theme of this research is school principals' educational beliefs, and it is different from teacher's beliefs or teaching beliefs. Based on above definitions, this research refers educational beliefs as the educational views and ideas that individual believes in firmly and undoubtedly. Lin (2005, pp. 79-84) generalized the characteristics of teachers' belief system. School principals' beliefs system has the similar characteristics: ① School principals' education belief itself is a system, which lies in a certain level of the school principals' individual belief system. ② School principals' beliefs are also organized in "center-edge" rules, and the closer to the center, the more difficult to change. ③ The change of school principals' central beliefs will lead to changes in the school principals' belief system; the continuous changes of school principals' marginal beliefs will also lead to the change of central beliefs and then the change of the whole belief system. ④ Some school principals' beliefs can be recognized and expressed effectively in words, while others cannot. ⑤ There is a presumptuous, hypothetical quasi-logical relationship between the beliefs within school principals' beliefs system.

Focusing mainly on subject teaching, Caldhead (1996) pointed out that teachers' beliefs are often used to refer to teachers' beliefs in teaching methods, or those beliefs associated with individual teaching, which includes five areas: ① beliefs about learners and learning; ② beliefs about teaching activities; ③ beliefs about disciplines;④ beliefs about how to teach; ⑤ beliefs about teachers themselves and teacher's role.

Williams and Burden (1997) pointed out that teachers' beliefs mainly include three kinds of beliefs about students, learning, and teachers themselves. Zhou and Yu (2003, p. 52) stated "There are four basic teachers' beliefs, namely, the teacher's sense of efficacy, the teacher's attribution style, the teacher's control of the student and the teacher's pressure of the work." This classification focuses on individual teacher's psychological content.

Zhao (2004) pointed out that teachers have a lot of beliefs in their life and teaching experience. These beliefs merge together and connect closely to form a coherent belief system with "personal meaning". The beliefs related to teachers' teaching life mainly

include: beliefs of teaching purpose, beliefs of teaching activities, beliefs of teacher's role, beliefs of subject content and self-learning, beliefs of the learning environment and teaching mode, cognitive beliefs, teaching efficacy, self-efficacy and so on.

According to the research questions and research object of this research, referring to the division of the *Professional Standards for Compulsory Education Schools Principals*, we constructed the basic structure of school principals' educational beliefs, which were divided into six aspects. The six aspects include: school planning, school culture, curriculum and teaching, development of teachers, internal management, and external environment etc. This structure will be the main framework for the content of this research.

2.2.2 Research on the mechanism of formation and change of educational beliefs

There are three main approaches to the study. The first focuses on the factors influencing the formation and change. Strike and Posner believed that the change of teacher educational beliefs is influenced by many factors, including internal factors such as teaching ability and motivational factors, and external factors such as social and cultural context, the subject of teaching, student's grade and characteristics and so on (1992). Research (Xie, 2006) from the perspective of observing the relationship between school culture and teachers' beliefs reveals the influence of school colleagues and their school culture on teachers' beliefs and changes. A case study shows the main factors that hinder teachers' beliefs are examinations, textbooks, and the real environment including school culture (Jiang, 2005). The researcher conducted a questionnaire survey on the intrinsic factors influencing teachers' beliefs and revealed that teachers' work input, reflective intelligence, critical thinking tendency, job satisfaction, and teacher's sense of efficacy play an important intermediary role (Lu, 2004). Ma (2012) explored the root causes of the problems of teachers' beliefs from the perspective of Chinese historical and cultural, contemporary educational factors and social factors. It is believed that the excessive negation of traditional culture in the process of Chinese historical development and the hardheaded introduction of western education contents have led to teacher group's loss of the original cultural beliefs and the understanding of the ultimate goal of education. Pre-service teacher's development of beliefs lacks effective guidance because of the pursuit of knowledge and skills in contemporary basic education and teacher education, and the neglect of the "human

problem" and educator's affective education. In-service teacher's development of beliefs is under negative influence because of the contradiction among contemporary consumerism values, inappropriate management system, and various interest conflicts.

The second focuses on changing the conditions and mechanisms. Strike (1992) pointed out that in the face of the conflict between old and new beliefs, teachers mainly change original beliefs based on the following conditions: dissatisfaction with the existing beliefs, the intelligibility of the new beliefs, the plausibility of the new beliefs, the fruitfulness of new beliefs and so on. There are studies believing that seven factors will cause most people to rethink a problem, even the most convinced people are no exception. They are reason, research, resonance, representational redescription, resources and rewards, real world events, and resistances. In sum, the change of beliefs must be the battle between old and new beliefs (as cited in *Reference News,* June 13, 2003).

The third focuses on dividing the process of educational beliefs' formation and development. On the basis of the interview, Berden and others stated that the development of teachers' beliefs needs to go through the survival stage, the adjustment stage and the maturity stage. He believed that new teachers must first survive in a strange environment after one year, and gradually get familiar with basic knowledge and skills, and establish their own professional status. In the first two to four years, teachers gradually noticed the complexity of students, tried to meet their various needs, and become confident with teaching. After five years of teaching, teachers feel better about controlling the teaching process with their own professional insights and teaching beliefs. Fessler put forward the development of teachers' beliefs from the perspective of career planning and development, which includes pre-service education stage, guidance stage, ability-building stage, zeal and growth stage, career frustration stage, stability and stagnation stage, career downturn and career withdrawal stage. Steffy, based on Fessler et al., divides the development process into preliminary career stage, expert career stage, retreat career stage, renewed career stage, and withdrawal career stage. Huberman et al. proposed the development of teachers' beliefs includes entrance, stabilization, experiment and variation, calmness and reluctance, conservation and complaining, and retirement, trying to reflect the true process of teacher's professional growth. In the view of Berliner, the development of teachers' beliefs includes beginning stage, skilled stage, competent stage, highly capable stage and expert teacher stage. (as cited in Ye, 2003, pp. 265-307).

2.2.3 Research on the relationship between educational beliefs and behaviors

The existing researches have mainly analyzed the relationship between educational beliefs and behaviors from three aspects.

Firstly, a large number of studies have confirmed that educational beliefs do affect teaching behaviors and student development. Many scholars believed that principal leadership has an impact on school effectiveness, teacher's self-efficacy, and student outcomes (Hallinger & Heck, 1998; Nir & Kranot, 2006; Robinson, Lloyd, & Rowe, 2008; Day, Gu, & Sammons, 2016; Zheng, Li, Chen, & Loeb, 2017). Many scholars have emphasized that teachers' beliefs refer to the judgment of some kind of theories, viewpoints, and opinions about the phenomenon of teaching and learning. It affects teacher's perception and judgment and then influences teacher's educational practice and the physical and mental development of the students (Yu & Xin, 2000; Zhou & Yu, 2003; Gao, 2004). Gao also agreed that teacher's behavior is mainly influenced and even decided by teacher's thinking process. The process here is closely related to the psychological background including teacher's personal theory, beliefs, the value of their role, the initiative of teaching and learning, and their concepts of teaching (2004). At the same time, research shows that belief has become an obstacle to the implementing the notion of educational reform. Fang (1998) revealed that the beliefs teachers have now are conflicting with constructivist curriculum reform. Most of the teachers are still teaching with the original point of view, and the concept of curriculum reform cannot be effectively implemented. Contrasted with teacher's change, the change of belief is deep-seated, and teacher's behavior without the change of belief means the change is superficial. Teachers' beliefs largely affect teacher's perception of teaching context, choice of curriculum, decision-making in teaching and choice of teaching methods. Therefore, only with the change of teacher's beliefs can teachers make real changes, which may lead to the reform of classroom teaching (Lin, 2008).

Secondly, teachers' beliefs and teaching behaviors are interdependent. After summing up many studies on teacher beliefs, Fang (1998) pointed out that teacher belief is considered to be able to guide teaching practice, but the experience and reflection from the results of teaching practice may also lead to changes in teachers' beliefs. There is a two-way influence, interaction and causation between teacher's belief and teaching practice. Thompson (1992) pointed out that once the belief is formed, an individual

builds an orientation around belief, regardless of whether the orientation is correct or not, and it can influence cognition, and cognition can influence behavior. If the behavior is consistent with the original belief, it will strengthen the original belief.

Thirdly, there is a discord between teachers' educational beliefs and the observed educational practices. This type of research is mainly found in the early study of educational beliefs. Duffy (as cited in Xie, 2006, pp. 50-51) insisted that the teacher's theoretical conceptions are not relevant to their reading practice. Hoffan and Kugel (as cited in Xie, 2006, p. 51) explained the existence of opposing relations between teachers' beliefs and practices. Kuhs and Ball (1986) also pointed out that there is no simple causation between belief and practice. Jiang (2005) also found that teachers' beliefs are in accord with the new curriculum concept, but are in disaccord with teaching practice. Lin (2008) reviewed the study of the relationship between teachers' beliefs and teaching practice in the West: some studies support the idea that teachers' beliefs determine the practice; others find that in the context of real school education, teachers' beliefs do not necessarily guide teaching practice, and teachers' beliefs and teaching practice is not necessarily consistent. Definitely, the complexity of education life will limit teacher's ability to practice their own beliefs. Many teachers will choose teaching behavior according to the relationship between teachers and students, the regularities of classroom teaching, the needs of different levels of students, the context of school education, teacher's physiological state, textbooks and other practical factors. Devine et al. (2013) also stated that contradictions are evident, between teacher beliefs and observation of their practice, the latter mediated by the sociocultural context of the school (gender, social class, and migrant children), teacher expectations for different types of students and leadership practices within the school.

2.2.4 Summary

Based on the above research, we believe that the whole educational belief is a complex system of assembled clusters, which is dynamic and can be changed. Educational beliefs are closely related to educational practice. They interact with each other, but not in a simple linear causal relationship. The formation and change of educational beliefs are influenced by many factors, including the results of educational practice. On the contrary, educational practice is influenced by many factors, including educational beliefs. So, we both want to see the close relationship between the two, especially the educational belief's important impact on educational practice, and

recognize the consistency of educational practice and beliefs is also influenced by other factors.

2.3 Related research on school principals

2.3.1 Qualities and educational beliefs of school principals

School principals' qualities are essential to the development of school and education. Since 1985, China's primary and secondary schools began to implement the "school principal responsibility system", the quality of school principals has been the focus of education management researchers. According to Zhang and Wang (2007), the research on the quality of primary and secondary school principals can be divided into three aspects: the research on the overall quality, the research of certain qualities, the research of quality and quality education, and the construction of schools. The majority of the research results are about the overall quality of school principals.

Researches about the overall quality of primary and secondary school principals can be divided into three stages. The first stage ends in 1991, the representative viewpoints of this stage are as follows: Xiao (1997) put forward four basic qualities that school principals should have political quality, professional quality, ideological quality and physical quality. The research group of school principals' quality (1987), after making a large number of investigation on primary and secondary school principals in Beijing, Shanghai, Sichuan and other five provinces and cities, believed that there are 38 qualities that school principals should endow with, in which political ideas, moral quality, work style, work ability and professional knowledge are particularly important. In 1991, the former Chinese State Education Commission issued the *National Primary and Secondary School Principals' Conditions and Requirements*, and put forward 17 basic requirements for school principals in three categories: the basic political quality, knowledge, and skills.

The second stage is between 1991 and 2000. Research on the quality of primary and secondary school principals moved into a new stage. The connotation of the quality of school principals is constantly expanding, and each quality has a specific and rich interpretation. For example, Qu (1999) pointed out that in addition to several basic qualities, it is necessary to include new qualities like the consciousness of "managing school by law" and "making good decisions". Zhang (1998) proposed leadership consciousness specially. She pointed out that leadership consciousness includes senses of strategy, foresight, competition, and coordination. The book, named *The Handbook*

of School Principal's Quality, stated that school principals' quality structure including the moral quality, cultural quality, ability, physical quality, and personality characteristics (Xie & Liao, 1999). *The Primary and Secondary School Principals Training Regulations* issued in 1999 also highlighted school principals' quality. Some researchers also put their research in specific time range such as "21st Century" and "Cross Century", and put forward their own views.

The third stage begins in 2008. *Outline of the National Medium and Long Term Education Reform and Development Plan (2010-2020)*, the research and development work has been launched since 2008 and was officially released in 2010. Outline proposed to formulate the qualifications standards of school principals, promote the professionalization, and improve school principals' management abilities. In 2013, the *Professional Standards for Compulsory Education School Principals* was issued. This is a programmatic document for the development of school principals. It is the basic requirement for the professional quality of qualified principals of compulsory education schools. It is a milestone. Before and after it, a large number of monographs and articles began interpreting school principals' professional standards.

The research on school principals' certain quality is focused on three aspects. First, the study of the psychological quality of school principals mainly concerns about what psychological quality school principals should have and how to improve these qualities, and it involves the investigation of the actual psychological status and the impact on teacher's attitude toward working and so on. Second, school principals' quality as a researcher. Third, take the study of school principals' legal quality.

Researches on school principals' quality and quality education believe that school principals' quality is the key to the implementation of quality education. The level of the quality of principal is the key to success or failure of quality education. Combined with quality education, some requirements on school principals' qualities were put forward. For example, Kang (2001) believed that, in order to meet the requirements of quality education, school principals should possess: a high sense of responsibility and mission, the correct conception of education, a strong sense of autonomy, the unique ideas of school management, a good grasp of educational theory and strong research ability, the competence of organizing and implementing quality education, scientific attitude, and pragmatic working style. Related research generally agreed that the school principals' quality is essential for the success or failure of school construction. While some content was added to the requirements of school principals' quality based on

previous studies. For instance, He (1998) believed that the construction of a characteristic school requires the school principals to have profound professional knowledge, mature ideas of school management, unique way of thinking, perfect personality characteristics, and superior management skills.

Western countries have set requirements for the qualities in the professional standards of principals, qualified standards or excellence standards, which involved in educational beliefs.

National Policy Board for Educational Administration (2015) issued *Professional Standards for Educational Leaders*. Under ten standards, each item is divided into different specific indicators. The ten standards are as follows:

STANDARD 1. MISSION, VISION, AND CORE VALUES

Effective educational leaders develop, advocate, and enact a shared mission, vision, and core values of high-quality education and academic success and well-being of each student.

STANDARD 2. ETHICS AND PROFESSIONAL NORMS

Effective educational leaders act ethically and according to professional norms to promote each student's academic success and well-being.

STANDARD 3. EQUITY AND CULTURAL RESPONSIVENESS

Effective educational leaders strive for equity of educational opportunity and culturally responsive practices to promote each student's academic success and well-being.

STANDARD 4. CURRICULUM, INSTRUCTION, AND ASSESSMENT

Effective educational leaders develop and support intellectually rigorous and coherent systems of curriculum, instruction, and assessment to promote each student's academic success and well-being.

STANDARD 5. COMMUNITY OF CARE AND SUPPORT FOR STUDENTS

Effective educational leaders cultivate an inclusive, caring, and supportive school community that promotes the academic success and well-being of each student.

STANDARD 6. PROFESSIONAL CAPACITY OF SCHOOL PERSONNEL

Effective educational leaders develop the professional capacity and practice of school personnel to promote each student's academic success and well-being.

STANDARD 7. PROFESSIONAL COMMUNITY FOR TEACHERS AND STAFF

Effective educational leaders foster a professional community of teachers and other professional staff to promote each student's academic success and well-being.

STANDARD 8. MEANINGFUL ENGAGEMENT OF FAMILIES AND COMMUNITY

Effective educational leaders engage families and the community in meaningful, reciprocal, and mutually beneficial ways to promote each student's academic success and well-being.

STANDARD 9. OPERATIONS AND MANAGEMENT

Effective educational leaders manage school operations and resources to promote each student's academic success and well-being.

STANDARD 10. SCHOOL IMPROVEMENT

Effective educational leaders act as agents of continuous improvement to promote each student's academic success and well-being.

National Standards of Excellence for Headteachers (Department for Education, 2015) replaced the *National Standards for Headteachers* 2004 and 1998. The standards are set out in four domains:

- Qualities and knowledge
- Pupils and staff
- Systems and process
- The self-improving school system

Within each domain, there are six key characteristics expected of the nation's head teachers. The first domain, qualities and knowledge require head teachers:

1. Hold and articulate clear values and moral purpose, focused on providing a world-class education for the pupils they serve.
2. Demonstrate optimistic personal behavior, positive relationships and attitudes towards their pupils and staff, and towards parents, governors, and members of the local community.
3. Lead by example - with integrity, creativity, resilience, and clarity - drawing on their own scholarship, expertise and skills, and that of those around them.
4. Sustain wide, current knowledge and understanding of education and school systems locally, nationally and globally, and pursue continuous professional development.
5. Work with political and financial astuteness, within a clear set of principles centered on the school's vision, ably translating local and national policy into the school's context.

6. Communicate compellingly the school's vision and drive the strategic leadership, empowering all pupils and staff to excel.

Australian Professional Standard for Principals and the Leadership Profiles (Australian Institute for Teaching and School Leadership, 2014) has provided a public statement setting out what school principals are expected to know, understand and do to succeed in their work. The standard is an integrated model that recognizes three leadership requirements that a principal draws upon, within five areas of professional practice.

The standard is based on three leadership requirements:

- Vision and values
- Knowledge and understanding
- Personal qualities and social and interpersonal skills

This requirement recognises the importance of emotional intelligence, empathy, resilience and personal wellbeing in the leadership and management of the school and its community.

These requirements are enacted through the following five key professional practices:

- Leading teaching and learning
- Developing self and others
- Leading improvement, innovation and change
- Leading the management of the school
- Engaging and working with the community

There are many other concise and easy ways to understand statements about the quality of principals. For example, Meador (2018) believed the characteristics of a highly effective school principal include: a principal must exhibit leadership, a principal must be adept at building relationships with people, a principal must balance tough love with earned praise, a principal must be fair and consistent, a principal must be organized and prepared, a principal must be an excellent listener, and a principal must be a visionary. Kelly (2018) presented the qualities of a good principal involve: providing

support, highly visible, effective listener, problem solver, empowering others, a clear vision, fair and consistent, discreet, and dedicated.

2.3.2 Leadership and educational beliefs of school principals

This part reviews leadership researches related to educational beliefs. Wang (2016) pointed out that the factors influencing school principals' leadership can be roughly divided into external and internal factors. The internal factors are mainly the differences among school principals' qualities, abilities, and ideas. The external factors mainly involve the shortcomings and deficiencies in school principals' management system. She also pointed out that one of the contents of the school principals' leadership index system is the leadership qualities, including school principals' knowledge, abilities, and values. Once formed, the value will exert a subtle influence on people's thinking and behavior. Fan (2002) proposed that school principals' values are reflected in many aspects, specifically the two aspects of school principals' cognition and understanding of the value of school and the cognition of managing a school. The former mainly refers to school principals' cognition and view on school's function and role. School principal's view determines the objective, direction, and way of leadership, which also determines the overall school climate and the status of teacher's and student's development. The latter refers to school principals' theoretical thinking about school development from the macro vision. School principals' rational notions developed from his or her insight into the overall trend of social development, and his or her own education and teaching experience. The school principals' notion of school management directly determines the school's direction of development. Yufang Li (2009) pointed out in her research that although the knowledge and values of school principals cannot directly determine the progress of their leadership activities, they can restrict the scope, direction, and effectiveness of the result of it. It can be said that school principals' leadership is the trinity of school principals' knowledge, ability, and values. Among them, knowledge is the foundation, ability is the core, and value is the soul. The three coexist in school principals' leadership activities and contributed to the operation of the leadership.

The western country is very concerned about the influence of the principal's leadership on student achievement, so the related research is very rich. For instance, a research (Preston et al., 2015) found that effective leadership of school principal has great merit for fostering educational success for all learners. The finding indicated that the principals' philosophy for education, emphasis on student safety and belonging,

promotion of relationships, and relevancy of school content are seminal for aboriginal student success. *Principal Quality Practice Guideline* (Alberta Education, 2009) applies to all formal school leaders, including assistant and vice principals. All school leaders are expected to commit to fulfilling the leadership dimensions contained in the PQPG throughout their careers. The dimensions include: fostering effective relationships; embodying visionary leadership; leading a learning community; providing instructional leadership; developing and facilitating leadership; managing school operations and resources; and understanding and responding to the larger societal context.

2.3.3 Related research on rural school principals

Based on the huge differences between urban and rural education in China, this section focuses on the review of Chinese literature. Similar to the overall situation of research on primary and secondary school principals, the research on rural principals mainly involves the professional development, role, quality, leadership, evaluation, and training of rural school principals. The following review is mainly about the closely-related aspects of school principals' quality, leadership, and professional development.

As for research on principals' quality, *Rural Primary and Secondary School Principals Quality and Training* edited by Liu (2000) is a monograph of the study of rural primary and secondary school principals' quality. It takes rural primary and secondary schools as a special group and selects Changping district of Beijing as a case for in-depth study. It pointed out that the school principals' in rural areas in the new period should have the following qualities: ① The characteristics of the new era put forward new requirements for school principals with advanced running school thoughts, managing education by law, scientific decision-making ability, social communication ability and democratic working style. ② The particularity of school principals' quality requires them to have devotion and dedication, sticking to the reality in rural areas, practical and realistic working style, strong social communication ability to coordinate with villages, education administration, and teachers and students. Good image and appearance are also important besides these professional abilities.

Research on rural school principals' leadership, such as Xu (2010) described the core leadership abilities of rural school principals, including the ability to judge the value, the ability to promote work, the ability to lead in the profession and the ability of self-improvement. Jian (2010) investigated teaching leadership of rural principals, and believed that the four aspects of school principals' teaching leadership are formulating teaching objectives, guiding classroom teaching, introducing rules and regulations of

education and teaching, and guiding teacher development. Xin (2012) described the structure of rural school principals' leadership, and the criteria of evaluating school principals' leadership are whether school principals hold the scientific concept of development, the spirit of advancing with the times, and the ability to use these two qualities in planning and coordinating school development. Zhu and Yuan (2014) examined school principals' information leadership and considered it consists of five aspects: awareness of information, knowledge and skills, integration, and application of technology, the ability of planning, evaluating, organizing and managing. It is not difficult to find out that the current research on school principals' leadership in rural areas is relatively concentrated. Most of them are discussing the elements of leadership ability, especially information leadership, curriculum leadership, teaching leadership and so on, while the value component of leadership is often ignored. This also reflects that emphasis is on abilities rather than values in rural school principals' professional development.

In the research on the professional development of rural primary school principals, Jiang (2013, pp. 18-24) put forward that the professional connotation of school principals in rural areas includes five aspects: connotation of professional ideas, the connotation of professional knowledge, professional competence, professional ethics, and consciousness of professional development. Chu and Yang (2009) pointed out that the professional ethics include professional morality, the code of conduct, the professional attitude and motivation which contains school principals' professional ideals, devotion to the profession, initiative in working and job satisfaction. Based on Chu and Yang's theory, Jiang (2013, p. 23) further proposed the connotation of rural primary and secondary school principals' professional ethics which specifically includes the following three parts: First part is about professional morality. The school principals must strictly fulfill the duties and legal obligations of the job, the responsibility of being the school's legal person, and be brave to solve the difficulties in the development of the school. The school principals should strictly abide by the teacher's professional ethics. The school principals should have clear beliefs, values and independent ideas at work. Secondly, the code of conduct is also important. School principals should be noble-hearted, an inspiring example for teachers and students. School principals should have democratic ideas and spirit while working in school, make school administration as open and fair as possible, encourage all staff members to participate in school affairs, and show great affinity and treat everyone with modesty. Thirdly, the professional

attitude. School principals should work wholeheartedly and make contributions to the development of school, teachers, even the students. School principals should be fair and clean, and school funds should not be embezzled or misused. School principals should be able to bear great pressure, and be brave to face challenges in the work.

2.3.4 Summary

Based on previous research, it is found that existing researches on school principals rarely specialize in their educational beliefs, but this issue has never been neglected. School principals' educational beliefs widely existed in qualities, leadership, mission, vision, core values, characteristics, personality, philosophy and practices because belief is a complex concept that contains cognitive, affective, volitional, attitudinal, and evaluative components. The requirements for educational beliefs are reflected in the professional standards of principals in every country, but it may be expressed in other terms. The influencing factors and indicators of the principals' leadership involve the educational beliefs as well. The qualities, leadership and professional development of rural school principals have shown certain characteristics, suggesting that we should pay special attention to rural education practice.

Chapter 3 Research design

3.1 Research aims

The aims of this research are to explore educational beliefs of primary school principals in Chinese rural areas, to improve the level of professional development, with the wish to improve the efficiency of management which in turn to promote the reform and development of rural primary education. The specific objectives are as follows:

To describe the current status of educational beliefs.

To seek for the mechanism of formation and change of educational beliefs.

To explore the influence of the educational beliefs on school-running practice.

To put forward the promotion suggestions of educational beliefs of rural primary school principals.

3.2 Research questions

Based on the research aims, this research plans to answer the following questions about the educational beliefs of rural primary school principals in China:

(1) What is the current status of educational beliefs of rural primary school principals?

(2) What are the differences of educational beliefs of primary school principals with different background variables (origin, gender, ethnicity identity, region, age, teaching age, educational background, professional title)?

(3) What are the factors that affect the formation and change of educational beliefs of rural primary school principals?

(4) How do the factors affect the formation and change of educational beliefs of rural primary school principals?

(5) How do the educational beliefs of rural primary school principals affect their school-running practice?

(6) What are the actual effects of principals' beliefs on school-running practice?

(7) How to promote the educational beliefs of rural primary school principals?

3.3 Research hypotheses

There are several research hypotheses on the basis of relative research results and practical experiences by previous scholars:

H1: There is no significant difference in all levels of educational beliefs of rural primary school principals.

H2: There is no significant difference in overall educational beliefs and the various levels between urban and rural primary school principals.

H3: There is no significant difference in overall educational beliefs and the various levels between rural primary school principals of different genders.

H4: There is no significant difference in overall educational beliefs and the various levels between rural primary school principals of different ethnicity identities.

H5: There is no significant difference in overall educational beliefs and the various levels among rural primary school principals of different regions.

H6: There is no significant difference in overall educational beliefs and the various levels among rural primary school principals of different ages.

H7: There is no significant difference in overall educational beliefs and the various levels among rural primary school principals of different teaching ages.

H8: There is no significant difference in overall educational beliefs and the various levels among rural primary school principals of different educational backgrounds.

H9: There is no significant difference in overall educational beliefs and the various levels among rural primary school principals of different professional titles.

H1 corresponds to research question 1; H2, H3, H4, H5, H6, H7, H8, and H9 correspond to research question 2.

3.4 Methodology

Mixed research methodology takes pragmatism as its philosophical underpinning. The present study adopts the mixed research methodology, that is to say, it combines quantitative and qualitative research.

Traditionally, quantitative and qualitative researches appeared quite different and they sometimes seemed to be at war. Indeed, there existed fundamental distinctions between two research paradigms in knowledge claims, strategies of inquiry and methods of data collection and analysis (Creswell, 2003).

> A *quantitative* approach is one in which the investigator primarily uses postpositivist claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test

> of theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data (Creswell, 2003, p. 18).

> A *qualitative* approach is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e., the multiple meanings of individual experiences, meanings socially and historically constructed with an intent of developing a theory or pattern) or advocacy/participatory perspectives (i.e., political, issue-oriented, collaborative. or change oriented) or both. It also uses strategies of inquiry such as narratives, phenomenology, ethnographies, grounded theory studies, or case studies. The researcher collects open-ended emerging data with the primary intent of developing themes from the data (Creswell, 2003, p. 18).

However, today most researchers apparently see qualitative and quantitative approaches as complementary rather than antagonistic. More and more researchers tend to use quantitative and qualitative research in supplementary and complementary forms (Murray, 2003).

> A *mixed methods* approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problems. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews) so that the final database represents both quantitative and qualitative information (Creswell, 2003, pp. 18, 20).

Certain types of social research problems call for specific approaches. For example, if the problem is identifying factors that influence an outcome, the utility of an intervention, or understanding the best predictors of outcomes, then a quantitative approach is best. On the other hand, if a concept or phenomenon needs to be understood because little research has been done on it, then it merits a qualitative approach. Qualitative research is exploratory and is useful when the researcher does not know the important variables to examine. Consequently, the best choice in research method is the match between question and approach (Creswell, 2003).

The reason why this research adopts mixed method is also based on the match

between question and approach. Both quantitative and qualitative researches have their own advantages and limitations, so neither quantitative nor qualitative research is superior to another. Both of them have a special role in this research. Specifically, this research includes two types of subquestions of different nature: the first type of subquestions, namely question 1 and 2, are quantitative questions addressing current status (subquestion 1: What is the current status of educational beliefs of rural primary school principals?) and comparison of differences between different variables (subquestion 2 : What are the differences of educational beliefs of primary school principals with different background variables such as origin, gender, ethnicity identity, region, age, teaching age, educational background, professional title etc.). Obviously, the two questions discussed here can only be examined in numerical form and statistical ways, so quantitative approach is preferred here. Oppositely, the rest of the questions, namely subquestion 3, 4, 5, 6, and 7, aim to examine the mechanism of formation and change (subquestion 3: What are the factors that affect the formation and change of educational beliefs of rural primary school principals? subquestion 4: How do the factors affect the formation and change of educational beliefs of rural primary school principals?), explore the influence of the educational beliefs of rural primary school principals on school-running practice (subquestion 5: How do the educational beliefs of rural primary school principals affect the school-running practice? subquestion 6: What are the actual effects on school-running practice?), and attempt to put forward the promotion suggestions of educational beliefs of rural primary school principals (subquestion 7: How to promote the educational beliefs of rural primary school principals?). Definitely, a qualitative approach is more suitable for these subquestions. In sum, the nature of the research questions, the mixing of quantitative questions and qualitative questions contributes to the choice of the mixed methodology.

3.5 Methods

In this research, three kinds of specific research methods are used. In general, literature method will be applicable to the analysis of related theories and literature; investigation method is manifested in general conclusions, and fieldwork concentrates more on the depth and extension of general conclusions.

The study begins with the literature method. First of all, it reviews the related research finding and its tendency, and finds the starting point of research from the perspective of theory. Then, it conducts macro-investigation and gets related

quantitative data. Data statistics and analysis are conducted. Finally, this research conducts a case study around the case school principal, and obtains more detailed information through the qualitative interview, observation and documents inspection, meanwhile qualitative analysis are conducted.

3.5.1 Literature method

Literature method is to collect and analyze existing literature, understanding the current findings in the related research field, and grasps research dynamic and trends. This research collects literature from multiple forms of media, such as journals, newspapers, monographs, album of conferences, academic dissertations, government publications, electronic literature and network data etc. In this research, through the review of the literature, firstly, it contributes to understanding the current status and development trends of domestic and international studies, finding existing problems, and seeking a foothold for the research. Secondly, by defining the core concepts, such as “belief”, “educational beliefs”, “rural area”, “rural primary school principal” and “educational beliefs of school principals”, it lays down an important foundation for research. Thirdly, it provides a theoretical basis and a guide for the questionnaire design and analysis framework.

3.5.2 Investigation method

(1) Investigation areas

Figure 3: Map of Sichuan Province

The scope of this research is limited in Sichuan Province (see Figure 3). Sichuan Province is referred to as Chuan or Shu, and enjoys the reputation of "Land of Abundance", which is a province in southwest China occupying most of the Sichuan Basin and the easternmost part of the Tibetan Plateau between the Jinsha River on the west, the Daba Mountains in the north, and the Yungui Plateau to the south. It is in the upper reaches of the Yangtze River, 1,075 km from east to west, and over 900 km from its north to south. It neighbors Chongqing to the east, Yunnan, Guizhou to the south, Tibet to the west, Qinghai, Gansu and Shanxi provinces to the north. Sichuan's capital city is Chengdu. Sichuan covers the area of 486,000 square kilometers， 21 cities (autonomous prefecture)， 183 counties (county-level city, district). The population of Sichuan reaches 83,020,000, including urban population of 42,170,000， rural population of 40,850,000 (Sichuan Yearbook, 2016) .

By the end of 2017, the province had a total of 24,000 schools of various types at all levels. There were 15,460,000 students and 1,087,700 staff members, including 888,000 full-time teachers. There are 5,721 primary schools with 5,518,000 students. There are 3,722 lower secondary schools with 2,491,000 students (The Provincial Bureau of Statistics, 2017).

According to research questions and conditions, this research uses random sampling. The sample should reflect the internal diversity in traditional practice and the administrative district, geographic location, economic life type, and regional scale etc. in order to ensure representativeness as much as possible.

(2) Investigation respondents

Due to the comparison between urban and rural areas, the scope of the investigation is not limited to rural schools. The types of primary schools include: urban school, central school，basic school, village school, and primary section of the combined primary and lower secondary school. The levels of quality cover from high to weak schools. All principals who are employed in above schools probably become respondents of this research.

(3) Investigation instrument

The investigation uses "Questionnaire of Educational Beliefs of Primary School Principals", which is produced by the researcher. The scale has two parts. One is demographics including school location, school type, position, gender, age, teaching age, ethnicity identity, educational background, professional title, and major etc. The second part is an instrument that is the main body of the questionnaire, which includes

measurement dimensions: school planning, school culture, curriculum and teaching, development of teachers, internal management, and external environment etc. All of the six measurement dimensions in the scale are respectively investigated by different questions. The items include positive and negative expressions. The items take the form of Likert five-point scale. Every sentence contains only one complete thought whilst every of which carried a five-point range of responses as follows: ① fully disagree, ② disagree, ③ neither agree nor disagree, ④ agree, ⑤ fully agree. In the investigation, according to their actual situations, "fully disagree" to "fully agree" amount to corresponding 1-5 points，reversing items amount to corresponding 5-1 points.

(4) Statistical analysis

The data uses statistical software SPSS 22.0 for analysis. In response to question 1, mean and standard deviation are adopted. In response to origin (urban and rural), gender, and ethnic identity issues of question 2, this study implements independent sample t-test. In response to the rest of question 2, this study adopts one-way ANOVA.

(5) Research stages

The research would be divided into three stages. The first stage was from January to June 2017, and the primary missions were preparing questionnaire and sampling plan. The second stage would begin in September 2017, the main mission was distributing and collecting questionnaires. The final stage would start in November 2017, the mission was statistics analysis and investigation report.

3.5.3 Fieldwork

The reasons why the study utilizes fieldwork are as follows: On the one hand, school principals probably would hide their real attitudes deliberately because of the investigation, and the validity and reliability of questionnaire would be lowered. Therefore, it is necessary to go to the actual education field where the rural school principal lives and works to examine their education beliefs. On the other hand, the questionnaire survey manifests general characteristics about educational beliefs of rural primary school principals, which cannot focus on one typical school principal and make an in-depth analysis. In order to respond to questions 3, 4, 5, 6, 7, fieldwork would go into the micro-world of a typical principal, reveal the realistic performances and influence factors of educational beliefs, then explore impacts on his school-running practice and the actual effectiveness. Obviously, the questionnaire cannot answer these questions. Therefore, it is necessary to explore real life and work of the principal by semi-structured and unstructured interviews with the principal and relevant people,

observing the real school life and inspecting the relevant documents.

(1) Case school principal

According to research aims and the researcher's own situation, this research chose Mr. Liu as the case school principal. He comes from an ordinary rural primary school. He has worked in a rural school for 32 years whose rich experience is worth exploring. Mr. Liu is honest and frank, and these personalities are very important for this research. The school's research tradition and basic condition are very suitable for fieldwork.

(2) Qualitative interview

Qualitative interviews, an important data collection method in qualitative research, refer to the process in which a researcher and participant engage in a conversation focused on questions related to a research study (DeMarrais, 2004). It allows researchers to gain in-depth knowledge from participants about particular phenomena or experiences, and can provide the researcher with information from various perspectives (Hays, 2004).

Qualitative interviews are used to collect comprehensive data about four types of questions about educational beliefs of rural primary school principals. Firstly, the realistic performances—what educational beliefs does the principal have? Secondly, the influence factors—what are the factors that affect the formation and change of educational beliefs of rural primary school principal? How do the factors affect the formation and change of educational beliefs of rural primary school principal? Thirdly, the impacts on school-running practice—how do the educational beliefs of rural primary school principal affect school-running practice? What are the actual effects? Fourthly, the promotion suggestions—how to promote the educational beliefs of rural primary school principals?

The interviewees include the school principal, teachers and parents etc. The interview is carried out face to face by the researcher, and both semi-structured and unstructured interviews are used. All the interviews are recorded, and the recording and notes are used for further data analysis. When a saturation point is achieved, the data collection phase is stopped.

(3) Observation

Observation, an important method to collect data, is used to collect information about the topic of interest with direct observation in the field. In this research, it contributes to understanding the performances and meanings of principal's educational beliefs. The researcher adopts the role of a participant observer: engaging in school

principal's regular activities of the school, and periodically withdrawing from the setting to checking perceptions, recording field notes and analyzing data.

The researcher tries to observe the related educational field, for instance, classroom, sports ground, school principal's office, teacher's office, canteen, dormitory, school gate, library and other educational field as well as all kinds of special field, such as morning exercise, exercise between classes, going to school, going home after school, teacher meeting and flag-raising ceremony etc. All in all, all activities related to principal's work, from morning to night, may be observed. In observation, field notes are taken. When a saturation point is achieved, the data collection through observation is stopped.

(4) Documents inspection

Documents inspection is a common method of collecting data in qualitative research as well. Researchers obtain first-hand information by collecting, reviewing archives and files related to research. In this research, the documents researchers need to collect include Mr. Liu's work plans, summary, work notes, learning and reading notes, school magazines, research reports, the program and summary of major events, Longxiang town annals, as well as Dujiangyan county annals. Agreement from school principal is acquired before scanning and taking pictures for further data analysis. When the information of the data is exhausted and a saturation point is achieved, the data collection phase is stopped.

(5) The process of analyzing the qualitative data

This study follows the generic process of data analysis proposed by Creswell (2003, pp. 190-195):

Step 1: Organize and prepare the data for analysis. This involves transcribing interviews, optically scanning material, sorting and arranging the data into different types depending on the sources of information.

Step 2: Read through all the data to obtain a general sense of the information and to reflect on its overall meaning.

Step 3: Begin detailed analysis of a coding process including organizing the material into "chunk", taking text data into categories, labeling those categories with a term.

Step 4: Use the coding process of constant comparison to generate categories or themes for analysis. Those themes are the ones that appear as major findings in qualitative studies.

Step 5: Advance how the description and themes will be represented in the qualitative narrative or use a narrative passage to convey the findings of the analysis.

Step 6: A final step in data analysis involves making a personal interpretation or meaning of the data, for example, comparing the findings with the information gleaned from literature or bringing the findings to a particular culture or social context etc.

3.6 Research ideas

Firstly, to review on belief, educational beliefs, and primary school principals which is focusing on research issues. This is the foundation of research.

Secondly, through quantitative analysis of questionnaire, macroscopically describe the current status of rural primary school principals， manifest the differences among different background variables.

Thirdly, to go deep into the field of school education by qualitative interview, observation and documents inspection, describe the realistic performances of principal's educational beliefs, seek for the influence factors of principal's educational beliefs, explore the impacts of educational beliefs of school principals on school-running practice and the actual effect.

Finally, to collect the research findings, draw the conclusions, and put forward the promotion suggestions with respect to educational beliefs of rural primary school principals.

3.7 Ethical considerations

Research ethics is an indispensable part of research considerations. In this research, the following procedures are taken to ensure the study ethical. Firstly, to make sure all participants are voluntary. Secondly, the participants' rights are respected. They can decide opinion, attitude and put forward doubts in communication. Agreement from the participants is acquired before recordings and taking pictures. Thirdly, confidentiality is maintained in this research. The identity of all participants is kept anonymous, and readers of the research are not able to deduce their identities.

Chapter 4 A macro-investigation on educational beliefs of rural primary school principals

4.1 Participants

420 primary school principals from Sichuan Province, China were selected by random sampling.

4.2 Research methods and procedure

4.2.1 Preparation for the pretesting questionnaire

(1) Theoretical construction of the pretesting questionnaire

• Literature review

The basic concepts of this research were established based on a review of relevant literature such as ERIC, CNKI, Chengdu University library, and Palacky University library. Then, some measurements similar to this research were discussed and analyzed. Some teachers' educational beliefs questionnaires similar to this research (Zhu & Ye, 2000; Yu, 2000; Lu, 2004; Li, 2009) were referred to understand the basic structure and format of the school principals' questionnaire.

• Interviews

Based on the literature review, researchers conducted formal and informal interviews with six primary school principals, three primary education experts, and two education management experts in various ways such as face-to-face, telephone, and online video[8]. Typical educational beliefs and views on related educational theory and practice issues were collected.

• Construction of questionnaire dimension

On the basis of literature review and multiple interviews, by taking the *Professional Standards for Compulsory Education School Principals* as a reference, the typical beliefs collected from the principals and experts are placed into the six dimensions of the principals' professional standards: school planning, school culture, curriculum and teaching, development of teachers, internal school management, external school environment, etc. After comparing the typical beliefs and standard

[8] Because preparation for questionnaire could be time-consuming, the researchers used face-to-face interviews and telephone interviews in China and used online video interviews in the Czech Republic.

dimensions again, a preliminary draft of "Questionnaire of Educational Beliefs of Primary School Principals" was constructed.

Wu (2010) pointed out: "Expert validity is a kind of content validity. It is mainly tested by experts, scholars, and practitioners in the field on the suitability of the measurement items contained in various aspects, including the meaning of measurement item expression, the fluency and completeness of the items, and the suitability of the potential features of the facets to be measured, etc." (p. 476). Therefore, the first draft of the pretesting questionnaire needs to be tested and be modified by the expert validity. The researchers invited relevant professors and associate professors from Sichuan Normal University and Chengdu University, and principals from primary schools to form a group of experts (see Table 1). The expert group mainly revised individual ambiguous statements, deleted insignificant items, and added new items from the evaluation of readability and applicability. Finally, the revised predictive questionnaire by the expert panel can reasonably reflect the research content and have certain validity (see Table 2). At this point, the pretesting questionnaire was completed and could be used for the next pretesting.

(2) Structure of pretesting questionnaire

The questionnaire is divided into two parts: the first part is the background information of the primary school principals, and the second part is the main questionnaire of the primary school principals' educational beliefs. The demographics include school location, school type, position, gender, age, teaching age, ethnicity identity, educational background, professional title, and major etc. The main body of the pretesting questionnaire consists of six aspects, for a total of 60 prediction items. The dimension of "school planning" is composed of Item 1-9; The dimension of "school culture" is composed of Item 10-20; The dimension of "curriculum and teaching" is composed of Item 21-35; The dimension of "development of teachers" is composed of Item 36-45; The dimension of "internal school management" is composed of Item 46-55; The dimension of "external school environment" is composed of Item 56-60 (see Appendix 2). The items take the form of Likert five-point scale. Every sentence contains only one complete thought whilst every of which carries a five-point range of responses as follows: ① fully disagree, ② disagree, ③ neither agree nor disagree, ④ agree, ⑤ fully agree. In the investigation, according to their actual situation, "fully disagree" to "fully agree" amount to corresponding 1-5 points，reversing items amount to corresponding 5-1 points.

4.2.2 Pretesting questionnaire analysis

Using a random sampling method, the pretesting questionnaire survey was conducted among 76 primary school principals in Chengdu, Mianyang, Ganzi, Dazhou, Yibin and Liangshan. More information is shown in Table 3. It shows the internal diversity in traditional practice and the administrative district, geographic location, economic life type, and regional scale etc.

In the pretesting process, the researchers first identified the above six cities as the sampling range, and then randomly distributed and collected the questionnaires. Questionnaires issuance methods include on-site distribution and network distribution. A total of 78 questionnaires were distributed, 78 were collected, and the collection rate was 100%. 76 valid questionnaires were collected and the valid rate was 97.44%. Statistics of pretesting questionnaires distribution and collection are shown in Table 4.

Wu (2010) pointed out: "When the pretesting questionnaires are completed, pretesting questionnaires items should be analyzed, validity tests and reliability tests should be conducted as the basis for the preparation of formal questionnaires" (p. 158). The steps of the pretesting questionnaire analysis are shown in Figure 4.

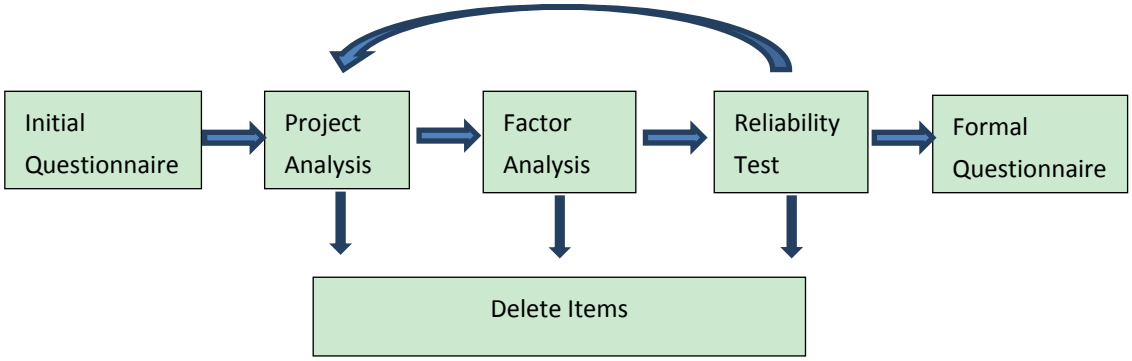

Figure 4: The pretesting questionnaire analysis process

Each step of the above analysis process has certain criteria for judgment. The general criterion for the decision value (CR value) is ≥ 3.00, and reaches a significant level ($p < 0.05$); the correlation value between the item and the total score is ≥ 0.400, and reaches a significant level ($p < 0.05$); in the homogeneity test, the factor loading of the item is ≥ 0.45, the communality is ≥ 0.2, and the extraction factor can explain 20% of item; in the reliability test, the alpha value of each item of the scale is less than that of the scale reliability, and the alpha coefficient of the scale reliability is ≥ 0.6 (Wu, 2010, pp. 191-192).

(1) Critical ratio analysis

Among the discriminant indexes of project analysis, the critical ratio method is the most commonly used, and the main purpose is to obtain the decision value (CR value) of the individual questionnaire item. By calculating the total score of the scale, ranking the total scores, finding the scores at the upper and lower 27% of the high and low groups, and dividing the scale into high and low groups according to the scores, the high and low groups were tested by an independent sample t-test, to tell the difference in the item, from which the decision value is obtained, that is the absolute value of "T". The higher the decision value, the higher the degree of discrimination of the subject. If CR < 3, it means that the discrimination of the item is poor and should be deleted. The pretesting questionnaire is based on the above procedure. After the test on the questionnaire items, the research finds that: Q1 decision value = 2.457 < 3, significant probability p = 0.015 < 0.05; Q15 decision value = 0.458 < 3, significant probability p = 0.648 > 0.05; Q22 decision value 1.054 < 3, significant probability p = 0.293 > 0.05; Q55 decision value = 0.677 < 3, significant probability p = 0.499 > 0.05, these four items are deleted because of no discrimination. The remaining 56 items of the decision value are greater than 3, and the significance of the probability p = 0.000 < 0.05, so the items have a good discrimination and are retained. The specific calculation results are shown in Table 5.

After the critical value test, Item Q1, Q15, Q22 and Q55 are deleted, and 56 items are retained.

(2) Correlation analysis between the item and the total score

The correlation between the item and the total score is to test the correlation between each item and the total score of the scale by bivariate correlation analysis. If the correlation between an individual item and the total score is higher, it means that the homogeneity of the item and the overall scale is higher, and the psychological trait or potential behavior to be measured is closer. The correlation coefficient between the individual item and the total score is not significant, or the two are a low-degree correlation (the correlation coefficient is less than 0.4), indicating that the homogeneity of the item and the overall scale is not high, and it is better to delete (Wu，2010, p. 181）. If the factor structure of a scale has been determined at the beginning of the study (based on a specific theory or the designation of a researcher), then the topics of different factors should be separated to perform this test; if you combine the different factors of the items together to perform the relevant score of the project, it may cause

the problems with underestimation（Wu，2010，p. 476）. Therefore, in the analysis of the correlation between the item and the total score, the study was conducted in six dimensions.

• Questionnaire items and total score correlation analysis of school planning (pretesting)

As shown in Table 6, the correlations between the eight items (Q2-Q9) and the total score are 0.461-0.771, which are all greater than 0.400; and $p < 0.05$. All eight items are retained.

• Questionnaire items and total score correlation analysis of school culture (pretesting)

As shown in Table 7, the correlations between the 10 items (Q10-Q14, Q16-Q20) and the total score are 0.446-0.776, which are all greater than 0.400; and $p < 0.05$. All 10 items are retained.

• Questionnaire items and total score correlation analysis of curriculum and teaching (pretesting)

As shown in Table 8, the correlations between the 12 items (Q23-Q30, Q32-Q35) and the total score are 0.423-0.664, which are all greater than 0.400; and $p < 0.05$. All 12 items are retained. The correlations between the two items (Q21, Q31) and total score are 0.356 and 0.370, which are all less than 0.400. These two items are deleted.

• Questionnaire items and total score correlation analysis of the development of teachers (pretesting)

As shown in Table 9, the correlations between the nine items (Q36-Q37, Q39-Q45) and the total score are 0.487-0.608, which are all greater than 0.400; and $p < 0.05$. All nine items are retained. The correlation between Q38 and total score is 0.391, which is less than 0.400. Q38 is deleted.

• Questionnaire items and total score correlation analysis of internal school management (pretesting)

As shown in Table 10, the correlations between the nine items (Q46-Q54) and the total score are 0.465-0.565, which are all greater than 0.400; and $p < 0.05$. All nine items are retained.

• Questionnaire items and total score correlation analysis of external school environment (pretesting)

As shown in Table 11, the correlations between the five items (Q56-Q60) and the total score are 0.748-0.858, which are all greater than 0.400; and $p < 0.05$. All five items

are retained.

After the correlation analysis, Item Q21, Q31 and Q38 are deleted, and 53 items are retained.

(3) Factor analysis

The exploratory factor analysis mainly examines the construct validity of a questionnaire. The degree to which the trait or concept of the theory can be measured, that is, how much a certain psychological trait can be explained by the actual test score (Wu, 2010, p. 195). An exploratory factor analysis was conducted on the self-designed "Questionnaire of Educational Beliefs of Primary School Principals (pretesting)", to examine the degree which the data measured by the questionnaires conformed to the theoretical basis of this research, to evaluate the items of the pretesting questionnaire. After checking the KMO (Kaiser-Meyer-Olkin) value of the questionnaire, the communalities, the extracted components after the torque, and the factor load, the redundant items were deleted. The criteria for the determination of KMO indicators are shown in Table 12 (Wu, 2010, p. 208). The criteria for factor load and communalities are shown in Table 13 (Wu, 2010, p. 201).

This research used principal component analysis and maximum variance method to extract the main structural factors. According to the dimension of the questionnaire design, six factors were directly set to be selected. The exploratory factor analysis results are as follows: KMO coefficient reaches 0.948; Bartlett's sphere test shows that its chi-squared value Sig. = 0.000, which has reached a significant level, indicating that the sample is very suitable for factor analysis (see Table 14); the cumulative explanatory variance of the questionnaire is 53.320% (see Table 15); the communality of each item is greater than 0.200; the factor load of Q3, Q5, Q7, and Q46 are 0.391, 0.392, 0.381, and 0.407, respectively, so they are deleted. All the rest of items are greater than 0.45 and are retained (see Table 16).

Item Q3, Q5, Q7 and Q46 are deleted after factor analysis. Therefore, a total of 11 items have been deleted and the questionnaire retains 49 items.

(4) Reliability test

Reliability refers to the stability and consistency of the results measured by the test or the scale tools. A measure is said to have a high reliability if it produces similar results under consistent conditions (Wu, 2010, p. 237). In the field of social science, the Cronbach alpha coefficient is most commonly used in Likert scales. The reliability test aims to examine the change in the reliability coefficient of the overall scale after the

item is deleted. If the overall reliability coefficient of the scale after the item is deleted is much higher than the original reliability coefficient (internal consistency α coefficient), attributes or psychological characteristics to be measured for this item and other items may not be the same, indicating that the homogeneity of this item and other items are not high, so it should be considered deleting this item during project analysis (Wu, 2010, p. 184). It is generally accepted that the criteria for subscale reliability values are as shown in Table 17, and the criteria for total scale reliability values are as shown in Table 18 (Wu, 2010; Hair et al., 1998).

Through the reliability test of the remaining 49 items of the pretesting questionnaire, the internal consistency α coefficient of the total questionnaire is 0.917, and the questionnaire reliability is "very good" (see Table 19). Therefore, the pretesting questionnaire is reliable.

Next, reliability tests were conducted from six sub-questionnaires.

• Reliability test of school planning

Through the reliability analysis of the five items in the "school planning", the results are shown in Table 20. The internal consistency of the questionnaire is 0.802, and the reliability of the questionnaire is "very good"; after the items are deleted, the alpha values are between 0.721-0.795, all being less than 0.802. Therefore, the questionnaire is reliable.

• Reliability test of school culture

Through the reliability analysis of the 10 items in the "school culture", the results are shown in Table 21. The internal consistency of the questionnaire is 0.780, and the reliability of the questionnaire is "good". An alpha value of Q10 after deletion is 0.819, which is greater than 0.780, so it is deleted. The alpha value of Q13 after deletion is 0.781, which is slightly greater than 0.780. But given that Q13 has a certain practical significance; the reliability of the questionnaire itself is already "good"; if it is deleted, the reliability will not increase significantly and will not change the reliability rating, so it is retained. The alpha values of the remaining items after deletion are between 0.740 and 0.763, which are less than 0.780. Therefore, after deleting Q10, the questionnaire is reliable.

• Reliability test of curriculum and teaching

Through the reliability analysis of the 12 items in the "curriculum and teaching" questionnaire, the results are shown in Table 22. The internal consistency α coefficient of the questionnaire is 0.744, and the reliability of the questionnaire is "good"; the alpha

values of each item are between 0.696-0.740, all being less than 0.744. Therefore, the questionnaire is reliable.

• Reliability test of development of teachers

Through the reliability analysis of the nine items in the "development of teachers" questionnaire, the results are shown in Table 23. The internal consistency coefficient of the questionnaires is 0.657, and the reliability of the questionnaire is "acceptable". When Q43 is deleted, the alpha value is 0.664, which is greater than 0.657, so it is deleted. The alpha values of the remaining items are between 0.597 and 0.644, all being less than 0.657. Therefore, after the deletion of Q43, the questionnaire is reliable.

• Reliability test of internal school management

Through the reliability analysis of the eight items in the "internal school management" questionnaire, the results are shown in Table 24. The internal consistency coefficient of the questionnaire is 0.628, and the reliability of the questionnaire is "acceptable"; the alpha values of each item are between 0.566-0.620, which are all less than 0.628. Therefore, the questionnaire is reliable.

• Reliability test of the external school environment

Through the reliability analysis of the five items in the "external school environment" questionnaire, the results are shown in Table 25. The internal consistency coefficient of the questionnaire is 0.855, and the reliability of the questionnaire is "very good". The alpha value of Q58 after deletion is 0.864, which is greater than 0.855, so it is deleted. The alpha values of the remaining items are between 0.806-0.840, which are all less than 0.855. Therefore, after the deletion of Q58, the questionnaire is reliable.

Through the questionnaire reliability test, Item Q10, Q43 and Q58 are deleted. Therefore, a total of 14 items have been deleted so far, and the questionnaire retains 46 items.

4.2.3 The formation of a formal questionnaire

Before the formal questionnaire is formed, it is necessary to conduct a comprehensive test on the 46 items retained in the pretesting questionnaire, including determination of decision value, correlation analysis between the item and total score, communalities test, factor load, and alpha value test after item deletion. The results of the analysis are detailed in Table 26: In determination of decision value, all the items are up to the standard and are retained. In correlation analysis of the item and total score, Q23, Q25, Q27, Q28, the correlation coefficients of these four items are less than 0.400, so they are deleted. In factor analysis, KMO coefficient reaches 0.946; Bartlett's

spherical test shows that the chi-squared value is Sig. = 0.000, which has reached a significant level; the cumulative explanatory variance of the questionnaire is 57.310%; the communalities and factor loading all reach the standard, so the items are retained. In reliability test, the alpha value after deletion of Q13 will increase from the original 0.819 to 0.850; the alpha value after deletion of Q34 will increase from the original 0.745 to 0.760; the alpha value after deletion of Q40 will increase from the original 0.664 to 0.691; the alpha value after deletion of Q60 will increase from the original 0.864 to 0.881. Taking into account the practical significance of these items, the overall questionnaire reliability has been "very good", the reliability of each sub-questionnaire has reached the standard, and deletion of items do not affect the reliability rating, so these four items are retained.

Through the comprehensive test, Item Q23, Q25, Q27, Q28 are deleted and 42 items of the questionnaire are retained.

At this point, the "Questionnaire of Educational Beliefs of Primary School Principals" is formally completed. Formal questionnaire consists of six dimensions and a total of 42 items: school planning（B1, B2, B3, B4, B5 corresponding to Q2, Q4, Q6, Q8, Q9 respectively）, school culture (B6, B7, B8, B9, B10, B11, B12, B13, B14 corresponding to Q11, Q12, Q13, Q14, Q16, Q17, Q18, Q19, Q20 respectively), curriculum and teaching (B15, B16, B17, B18, B19, B20, B21, B22 corresponding to Q24, Q26, Q29, Q30, Q32, Q33, Q34, Q35 respectively）, development of teachers (B23, B24, B25, B26, B27, B28, B29, B30 corresponding to Q36, Q37, Q39, Q40, Q41, Q42, Q44, Q45 respectively), internal school management (B31, B32, B33, B34, B35, B36, B37, B38 corresponding to Q47, Q48, Q49, Q50, Q51, Q52, Q53, Q54 respectively), external school environment (B39, B40, B41, B42 corresponding to Q56, Q57, Q59, Q60 respectively). For detailed components and corresponding items, see Appendix 3.

4.2.4 Formal testing

4.2.4.1 Questionnaire issuance and collection

The responses of questionnaires are primary school principals in Sichuan, China. The questionnaires were distributed by network delivery and personal service, as well as collecting. A total of 435 questionnaires were distributed, 426 were collected, a 97.93% collection rate. Six questionnaires that did not meet the requirements were eliminated, 420 valid questionnaires, a 98.59% valid rate. It is shown in Table 27.

Questionnaire survey was conducted among 420 primary school principals in 13

cities (autonomous prefectures) and 75 counties (county-level cities, districts) in Sichuan Province (see Figure 5). The sample shows internal diversity: ① From the view of traditional practices and the administrative district, the sample included Dazhou, Nanchong, Suining in East Sichuan, Luzhou in Southwest Sichuan, Meishan, Leshan in South Sichuan, Liangshan in Southwest Sichuan, Ganzi in West Sichuan, Aba in Northwest Sichuan, Guangyuan, Deyang, Mianyang in North Sichuan, and Chengdu in Central Sichuan, covering the provincial capital region, minority region and other region. ② According to the geographic location, the sample covered three major parts: the Sichuan basin, the northwest plateau of Sichuan, and the southwestern mountains of Sichuan. ③ From the view of economic life types, the sample covered urban and rural areas. ④ From the view of regional scale, the sample covered four levels of regional system structure: megacities, such as Chengdu; big cities, such as Mianyang; medium cities, such as Dazhou; and many other small cities. Among them, 329 primary school principals come from rural areas and 91 from the cities.

Figure 5: Sample selected areas

4.2.4.2 The reliability and validity of the questionnaire

(1) Reliability test

Through the reliability analysis of the 42 items of the questionnaire, the internal consistency alpha coefficient of the total questionnaire is 0.922, and the questionnaire reliability is "very good" (see Table 28). Therefore, the total questionnaire is reliable.

Reliability tests were conducted from six sub-questionnaires.

• Reliability test of school planning

Through the reliability test of the six items in the "school planning" questionnaire, the results are shown in Table 29. The internal consistency coefficient of the questionnaire is 0.831, and the reliability of the questionnaire is "very good". When the items are deleted, alpha values are between 0.759-0.829, which are all less than 0.831. Therefore, the questionnaire is reliable.

• Reliability test of school culture

Through the reliability test of the nine items in the "school culture" questionnaire, the results are shown in Table 30. The internal consistency coefficient of the questionnaire is 0.851, and the reliability of the questionnaire is "very good". The alpha value of deletion of B8 is 0.875, which is greater than 0.851. However, because both of reliability of total questionnaire and sub-questionnaire have been "very good", it can be ignored. The alpha values of the remaining items after deleting are between 0.819-0.848, which are all less than 0.851. Therefore, the questionnaire is reliable.

• Reliability test of curriculum and teaching

Through the reliability test of the eight items in the "curriculum and teaching" questionnaire, the results are shown in Table 31. The internal consistency coefficient of the questionnaire is 0.779, and the reliability of the questionnaire is "good". The alpha value of deletion of B21 is 0.793, which is greater than 0.779. However, because the total questionnaire reliability has been "very good" and the reliability of the sub-questionnaire has been "good", it can be ignored. The alpha values of the remaining items are between 0.729-0.761, which are all less than 0.779. Therefore, the questionnaire is reliable.

• Reliability test of development of teachers

Through the reliability test of the eight items in the "development of teachers" questionnaire, the results are shown in Table 32. The internal consistency coefficient of the questionnaire is 0.699, and the reliability of the questionnaire is "acceptable". The alpha value of deletion of B26 is 0.733, which is greater than 0.699. Because the total questionnaire reliability has been "very good" and the reliability of the sub-questionnaire has been "acceptable", it can be ignored. The alpha values of remaining items are between 0.647-0.676, which are all less than 0.699. Therefore, the questionnaire is reliable.

• Reliability test of internal school management

Through the reliability test of the eight items in the “internal school management” questionnaire, the results are shown in Table 33. The internal consistency coefficient of the questionnaire is 0.676, and the reliability of the questionnaire is “acceptable”. When the items are deleted, alpha values are between 0.628-0.670, which are all less than 0.676. Therefore, the questionnaire is reliable.

• Reliability test of the external school environment

Through the reliability test of the four items in the “external school environment” questionnaire, the results are shown in Table 34. The internal consistency coefficient of the questionnaire is 0.887, and the reliability of the questionnaire is “very good”. The alpha value of deletion of B42 is 0.891, which is greater than 0.887. However, because both of the reliability of the total questionnaire and the sub-questionnaire have been “very good”, it can be ignored. The alpha values of the remaining items are between 0.835- 0.858, which are all less than 0.887. Therefore, the questionnaire is reliable.

In summary, the results show that the “Questionnaire of Educational Beliefs of School Principals” is reliable.

(2) Validity test

The exploratory factor analysis results are as follows: KMO coefficient reaches 0.952; Bartlett’s sphere test shows that its chi-squared value Sig. = 0.000, which has reached a significant level, indicating that the sample is very suitable for factor analysis (see Table 35); the cumulative explanatory variation of the questionnaire is 60.417% (see Table 36); the communality of each item is greater than 0.200; the factor loading is greater than 0.45 (see Table 37).

In summary, the results show that the “Questionnaire of Educational Beliefs of School Principals” is valid.

4.2.5 Data processing

The research used SPSS 22.0 to process and analyze the effective questionnaires. To carry out descriptive analysis with percentage which involves all background variables; to carry out descriptive statistics of total scores, sub-dimensions and items by mean and standard deviation; to carry out independent sample t-test and one-way ANOVA to test the differences of educational beliefs on different variables (origin, gender, ethnicity identity, region, age, teaching age, educational background, and professional title). The method of multiple comparisons was used for further study if there was a significant difference.

4.3 Research results and analysis

4.3.1 Basic situation description of school principals

• Locations of schools

Table 38 shows that, in this effective investigation of rural primary school principals, 126 persons come from provincial capital area (accounting for 38.3%), 138 persons come from minority area (accounting for 41.9%), and 65 persons come from other area[9] (accounting for 19.8%).

• Positions of school principals

Table 39 shows that, in this effective investigation of rural primary school principals, 216 persons are principals (accounting for 65.7%), and 113 persons are deputy principals (accounting for 34.3%).

• Genders of school principals

Table 40 shows that, in this effective investigation of rural primary school principals, 268 persons are male (accounting for 81.5%), and others are female (accounting for 18.5%).

• Ages of school principals

Table 41 shows that, in this effective investigation of rural primary school principals, 22 persons are between 21 and 30 years old (accounting for 6.7%), 124 persons are between 31 and 40 years old (accounting for 37.7%), 171 persons are between 41 and 50 years old (accounting for 52%), and the other 12 persons are beyond 51 years old (accounting for 3.6%).

• Teaching ages of school principals

Table 42 shows that, in this effective investigation of rural primary school principals, 11 persons have less than 5 years' teaching age (accounting for 3.3%), 22 persons' teaching age is between 6 and 10 years (accounting for 6.7%), 110 persons' teaching age is between 11 and 20 years (accounting for 33.4%), 164 persons' teaching age is between 21 and 30 years (accounting for 49.8%), and the other 22 persons have more than 31 years' teaching age (accounting for 6.7%).

• Ethnic compositions of school principals

Table 43 shows that, in this effective investigation of rural primary school principals, 220 persons are Han (accounting for 66.9%), 80 are Tibetan (accounting for 24.3%), 26 are Yi (accounting for 7.9%), one is Hui (accounting for 0.3%), one is Buyi

[9] It refers to all areas except the provincial capital and minority areas.

(accounting for 0.3%), and one is Qiang (accounting for 0.3%). The total of 109 ethnic minorities, account for 33.1%.

• Educational backgrounds of school principals

Table 44 shows that, in this effective investigation of rural primary school principals, four persons hold the degree of senior high school or technical secondary education (accounting for 1.2%), 115 persons hold the degree of junior college (accounting for 35%), 208 persons hold undergraduate degrees (accounting for 63.2%), and other two persons hold postgraduate degrees (accounting for 0.6%).

• Professional titles of school principals

Table 45 shows that, in this effective investigation of rural primary school principals, 34 persons have been awarded the professional titles of level 3 of primary teacher or have no titles (accounting for 0.9%), 29 persons are with titles of level 2 of primary teacher (accounting for 8.8%), 47 persons are with titles of level 1 of primary teacher (accounting for 14.3%), 145 persons are with titles of senior primary school teacher (accounting for 44.1%), 105 persons are with titles of senior secondary school teacher (accounting for 31.9%). None of them have been awarded the top-level professional title.

4.3.2 General analysis of educational beliefs of rural primary school principals

This descriptive statistical analysis was conducted on the rural school principals' educational beliefs from three different levels (entirety, dimensions, and items), to know the principals' performance according to the mean and standard deviations in entirety educational beliefs, six dimensions and all items, to test hypothesis 1. The mean of principals' scores is categorized as five levels which are "excellent", "good", "fair", "passing", and "poor"（see Table 46[10]）.

Table 47 shows the analysis results of principals' educational beliefs from general and dimension levels. The result shows that the mean score of principals' educational beliefs is 4.329, and the scores of the dimensions are between 3.626 and 4.667. The lowest dimension is curriculum and teaching belief, followed by internal school management belief, teacher development belief, external school environment belief, school culture belief, and school planning belief successively. The score of curriculum and teaching is significantly below the mean score of educational beliefs, and the latter

[10] It was converted by five points.

three dimensions are significantly beyond the mean score. The mean scores of entirety educational beliefs and five dimensions are ranked as “good”, one dimension as “fair”, which means that the educational beliefs of rural primary school principals are still ranked as “good” in general, instead of “excellent”. So hypothesis 1 is not proven.

Table 48 shows the descriptive statistics of each item in rural primary school principals’ educational beliefs. The result shows that the means of most items are as good. The means of most items in curriculum and teaching are below “4”, and two items are even below “3”. One item in development of teachers is below “3.5”, and one item in internal school management is below “4”.

Among the six dimensions, the score of school planning belief is the highest, which shows that rural primary principals have clear cognition of school planning. Of all the items, B4 gets the highest scores followed by B3, which means that principals have a clear understanding of school’s orientations, philosophy and planning, and take efforts to make their schools acknowledged as excellent and desirable; B2 gets the lowest scores, which probably because some principals do not approve of the participation of all the stuff, students, parents and communities in schools’ planning, instead, they consider that schools’ planning only should be attended by the internal staff of the school, even just by school principals.

On the dimension of school culture belief, B12 gets the highest scores of all the items, suggesting that principals want to develop schools with principals who dare to think and dare to act, and treat affairs with fairness and justice, with teachers who love their students as well as their jobs, and with students who are optimistic and love to learn. B11 gets the lowest scores, suggesting that some principals hold that the negative educational beliefs that not every student can be excellent even if with opportunity.

On the dimension of curriculum and teaching belief, results demonstrate that: ① This level serves as the lowest one in the six dimensions, which shows the educational beliefs of principals are “fair” in terms of curriculum and teaching. ② The highest score is B21, which reflects the relatively right recognition of rural principals for reform on teaching by applied information technology. ③ The scores of B17 and B19 are lower than “3”, which means majority of rural principals insist that teachers should teach completely as the curriculum progress planned by school and demonstrates that they only stress the evaluation function of teaching study, but ignore the fundamental objective of teaching study lied in helping teachers improve their teaching quality and level. ④ B22 achieves less than “3.5”, which suggests that most of the principals still

agree with the traditional idea that it is more important "how teachers teach students" than "how students learn". The conception of "valuing teaching over learning" is conventional and negative. ⑤ Scores of B15, B16 and B20 are less than "4", which indicates that: Some principals still believe that teachers and students do not need to question the content of textbook, disregarding the initiative of teachers and students in teaching activities. Insisting it is impossible to achieve a class that both the teacher and the student are satisfied, which reflects that some principals are unconfident about the construction of ideal classes. Some principals do not realize their key role and responsibility in problems of reduction for students load.

In terms of teacher development belief, B30 achieves the highest scores, which shows all the principals well agree with the idea that teachers should learn from each other, communicate with each other, inspire each other and make progress together. B26 hits the lowest scores, which means most of the principals have not rightly recognized the problem of physical punishment yet, and have not understood physical punishment is forbidden in any circumstance. This is the bottom line that teachers should stick to.

On the dimension of internal management, B32 earns the highest scores, which means all principals hope to persistently pursue their teaching dreams, constantly explore and optimize the internal management, improve the management level. B37 has the lowest scores, which shows many principals still propose student attend after-school activity as less as possible to avoid students safety accident. This is obviously a show of giving up eating for fear of choking.

On the dimension of external school environment belief, B41 hits the highest scores, which shows all principals have the same recognition and hold the same view about setting an example in forming a good school image and striving for the understanding, trust, support and cooperation of the public. B42 has the lowest scores, which suggests some principals may be pessimistic about the constraint effect of external school environment on school's development, and do not completely recognize its positive function in promoting school development.

4.3.3 Variances analysis of educational beliefs of rural primary school principals

4.3.3.1 Variance analysis of educational beliefs of principals with different demographic characteristics

This part analyzes principals' difference in educational beliefs by taking

principals' demographic variables as independent variables and the mean scores of educational beliefs questionnaire as dependent variables. Independent sample t-test and one-way ANOVA are utilized in different situations to test the difference of primary school principals with different demographic characteristics. If the value of ANOVA reaches the significant level, then Scheffe's post hoc tests are used to find the difference among different groups in order to test hypothesis 2 to 7. "Since it is the strictest method among all post hoc tests, it is too conservative that sometimes the post hoc test will not get significant result even though the F value is significant" (Wu, 2010, p. 349). Under such circumstances LSD post hoc test is used so that the results will be correspondent with the significance of F value. Principals' demographic variables consist of eight variables, which are origin (urban-rural), gender, ethnicity, region, age, educational background, and professional title. The origin difference is analyzed utilizing 420 samples, but only 329 samples are utilized to analyze the effect of other demographic variables.

(1) Origin (urban-rural) and educational beliefs

This research utilized the independent sample t-test to analyze the educational beliefs and each dimension difference between principals with different origins. The results of descriptive analysis are shown in Table 49.

The results find that, principals from different origins have significantly different educational beliefs, and there is significant difference on the 3rd, 4th and 5th dimensions, but no significant difference on the 1st, 2nd and 6th dimensions (see Table 50). Furthermore, Table 49 shows that principals from urban areas get higher scores than those from rural areas in general educational beliefs and each dimension. So hypothesis 2 is not proven.

(2) Gender and educational beliefs

This research utilized the independent sample t-test to analyze the educational beliefs and each dimension difference between principals with different genders. The results of descriptive analysis are shown in Table 51.

The results find that, principals with different genders have significantly different educational beliefs only on the 3rd dimensions, but no remarkable difference on the general level or other dimensions (see Table 52). Furthermore, Table 51 shows that female principals get higher scores than males on the 3rd dimension. So hypothesis 3 is not proven.

(3) Ethnicity identity and educational beliefs

China is a multinational country, and Sichuan is a multinational province. This research utilized the independent sample t-test to analyze the educational beliefs and each dimension difference between principals with different ethnicity identities. The results of descriptive analysis are shown in Table 53[11].

The results find that, principals with different ethnicity identities have significantly different educational beliefs, and there is extremely significant difference on the 3rd and 5th dimensions, and significant difference on the 4th and 6th dimensions, but no significant difference on the 1st and 2nd dimensions (see Table 54). Furthermore, Table 53 shows that principals with Han ethnicity get higher scores than minority in the above educational beliefs. So hypothesis 4 is not proven.

(4) Region and educational beliefs

This research utilized ANOVA to analyze the educational beliefs and each dimension difference among principals from different regions, and the mean and standard deviations of variables are shown in Table 55. No further elaboration will be made.

By the difference analysis of regions of school principals（see Table 56）, it is found that: ① There is extremely significant difference in principals' general educational beliefs. ② There is extremely significant difference on the 3rd and 5th dimensions, but no difference on other dimensions. So hypothesis 5 is not proven.

Scheffe's post hoc test was utilized. It can be seen in Table 56: ① From the perspective of general educational beliefs, the scores of the provincial capital group are significantly higher than minority concentrated region groups. ② From the perspective of curriculum and teaching belief, principals from minority concentrated regions get the lowest scores. From the perspective of internal school management, the scores of the provincial capital group still are significantly higher than the minority concentrated region group, and LSD test shows that principals from other region get significant higher scores than from minority concentrated region. Hence it can be considered that the region difference of educational beliefs does exist.

(5) Age and educational beliefs

This research utilized ANOVA to analyze the educational beliefs and each dimension difference among principals with different ages, and the mean and standard deviations of variables are shown in Table 57. No further elaboration will be made here.

By the difference analysis of ages of school principals（see Table 58）, it is found

[11] Data of Tibetan, Yi, Hui, Buyi and Qiang ethnicity involved in this research is collectively computed and known as minority.

that: ① There is extremely significant difference in principals' general educational beliefs. ② There is extremely significant or significant difference on the 3rd, 4th and 5th dimension, but no difference on other dimensions. So hypothesis 6 is not proven.

Scheffe's post hoc test was utilized. It can be seen in Table 58: ① From the perspective of general educational beliefs, the scores of 41-50 years old group are significantly higher than 21-30 years old group, and LSD test shows that the scores of 41-50 years old group are significantly higher than 31-40 years old group, and the scores of 31-40 years old group are significantly higher than 21-30 years old group. ② From the perspective of curriculum and teaching belief, the scores of 41-50 years old group are significantly higher than 21-30 years old and 31-40 years old groups; from the perspective of teachers' development, the 21-30 years old group get the lowest scores, which means that these young principals may not prepare well for leading teachers' development; from the perspective of internal school management belief, the scores of 41-50 years old group are significantly higher than 21-30 years old group. In general, principals who are 21-30 years old still need to improve their educational beliefs and principals who are 41-50 years old hold the best educational beliefs. Therefore, principals' educational beliefs are significantly related to their ages, and the older they are (before 51 years old), the higher educational beliefs they hold.

(6) Teaching age and educational beliefs

This research utilized ANOVA to analyze the educational beliefs and each dimension difference among principals with different teaching ages, and the mean and standard deviations of variables are shown in Table 59. No further elaboration will be made here.

By the difference analysis of age of school principals（see Table 60）, it is found that: ① There is extremely significant difference in principals' general educational beliefs. ② There is extremely significant or significant difference on the 3rd, 4th and 5th dimension, but no difference on the other dimensions. This result is similar to the result of age. So hypothesis 7 is not proven.

Scheffe's post hoc test was utilized. It can be seen in Table 60: ① From the perspective of general educational beliefs, the scores of the group with 21-30 years teaching age are significantly higher than the group with 6-10 years teaching age, and LSD test shows that the longer the principals' teaching age is, the higher beliefs they hold. ② From the perspective of curriculum and teaching belief, teachers' development, and internal school management, similar results as general educational beliefs are

observed. In general, young principals with less than 5 years of teaching age have the lowest beliefs and principals with 21-30 years teaching age have the highest. Similar to the analysis of age, the general trend suggests that beliefs get higher with the growth of teaching age, and reach at the highest level in 21-30 years teaching age.

(7) Educational background and educational beliefs

This research utilized ANOVA to analyze the educational beliefs and each dimension difference among principals with different educational backgrounds. The mean, standard deviations and F value of variables are shown in Table 61. It can be seen that there is no difference on general educational beliefs and each dimension. Hypothesis 8 is proven.

(8) Professional title and educational beliefs

This research utilized ANOVA to analyze the educational beliefs and each dimension difference among principals with different professional titles, and the mean and standard deviations of variables are shown in Table 62. No further elaboration will be made here.

By the difference analysis of professional title of school principals（see Table 63）, it is found that: ① There is extremely significant difference in principals' general educational beliefs. ② There is extremely significant or significant difference on the 3rd, 4th, 5th and 6th dimension, but no difference on the 1st and 2nd dimensions. So hypothesis 9 is not proven.

Scheffe's post hoc test was utilized. It can be seen in Table 63: ① From the perspective of general educational beliefs, the scores of group with titles of senior primary school teacher and senior secondary school teacher are significantly higher than group with titles of level-2 and level-1 of primary teacher, and principals with titles of senior primary school teacher hold the highest level of educational beliefs. ② From the perspectives of curriculum and teaching, development of teachers, internal school management, and external school environment, similar results as general educational beliefs are observed. In general, the higher titles the principals have, the higher beliefs they hold, and reach the highest in senior primary school principals. Besides, principals with lowest professional titles do not always get lowest scores in beliefs, e.g., they get the highest scores on the 6th dimension.

4.3.3.2 Summary of demographic differences in principals' general educational beliefs and each dimension

(1) Summary of demographic differences in rural primary school principals'

general educational beliefs

There is no gender difference or educational background difference in rural primary principals' general educational beliefs; the differences of origin (urban or rural), ethnicity, region, age, teaching age and professional title are significant. To be specific, the analysis of general educational beliefs shows that:

• The scores of urban group are significantly higher than rural group.

• There is no gender difference.

• The scores of Han group are extremely significantly higher than minority group.

• The scores of provincial capital group are significantly higher than minority concentrated region group.

• The scores of 41-50 years old group are significantly higher than those of the 21-30 years old and 31-40 years old groups, the scores of 31-40 years old group are significantly higher than 21-30 years old group.

• The scores of group with 21-30 years teaching age are significantly higher than groups with less than 5 years teaching age, 6-10 years teaching age and 11-20 years teaching age. The scores of group with more than 31 years teaching age are significantly higher than groups with less than 5 years teaching age and 6-10 years teaching age. The scores of group with 11-20 years teaching age are significantly higher than group with 6-10 years teaching age.

• There is no significant difference among different educational background groups.

• The scores of group with titles of senior primary school teacher are significantly higher than group with titles of level-1 primary teacher and level-2 primary teacher; the scores of group with titles of senior secondary school teacher are significantly higher than groups with titles of level-1 primary teacher and level-2 primary teacher.

(2) Summary of demographic differences in rural primary school principals' school planning belief

On the dimension of school planning belief, there is no difference among rural primary school principals with different origins (urban or rural), genders, ethnicities, regions, ages, teaching ages, educational backgrounds and professional titles.

(3) Summary of demographic differences in rural primary school principals' school culture belief

On the dimension of school culture belief, there is no difference among rural primary school principals with different origins (urban or rural), genders, ethnicities,

regions, ages, teaching ages, educational background and professional titles.

(4) Summary of demographic differences in rural primary school principals' curriculum and teaching belief

On the dimension of curriculum and teaching belief, there are significant differences among rural primary school principals with different origins (urban or rural), genders, ethnicities, regions, ages, teaching ages, and professional titles; however, there is no difference among principals with different educational background. To be specific, the analysis of curriculum and teaching belief shows that:

- The scores of urban group are significantly higher than rural group.
- The scores of females are significantly higher than males.
- The scores of Han group are significantly higher than minority groups.
- The scores of provincial capital group are significantly higher than minority concentrated region group, and scores of other region group are significantly higher than minority concentrated region group as well.
- The scores of 41-50 years old group are significantly higher than 21-30 years old and 31-40 years old groups, and the scores of older than 51 years old group are significantly higher than 21-30 years old group.
- The scores of the group with more than 31 years teaching age are significantly higher than groups with less than 5 years teaching age, 6-10 years teaching age and 11-20 years teaching age. The scores of the group with 21-30 years teaching age are significantly higher than groups with less than 5 years teaching age, 6-10 years teaching age and 11-20 years teaching age. The scores of the group with 11-20 years teaching age are significantly higher than the group with less than 5 years teaching age. The scores of the group with 6-10 years teaching age are significantly higher than the group with less than 5 years teaching age.
- There is no significant difference among different educational background groups.
- The scores of the group with titles of senior primary school teacher are significantly higher than groups with titles of level-1 primary teacher, level-2 primary teacher, and level-3 primary teacher. The scores of the group with titles of senior secondary school teacher are significantly higher than groups with titles of level-1 primary teacher, level-2 primary teacher, and level-3 primary teacher.

(5) Summary of demographic differences in rural primary school principals' teacher development belief

On the dimension of teacher development belief, there are significant differences among rural primary school principals with different origins (urban or rural), ethnicities, ages, teaching ages and professional titles; however, there are no differences among principals with different genders, regions, and educational background. To be specific, the analysis of teacher development belief shows that:

• The scores of urban group are significantly higher than rural group.

• There is no gender difference.

• The scores of Han group are significantly higher than minority groups.

• There is no difference among principals with different regions.

• The scores of 31-40 years old group, 41-50 years old group, and older than 51 years old group are significantly higher than 21-30 years old group.

• The scores of the group with 11-20 years teaching age is significantly higher than groups with less than 5 years teaching age and 6-10 years teaching age. The scores of the group with 21-30 years teaching age are significantly higher than groups with less than 5 years teaching age and 6-10 years teaching age. The scores of the group with more than 31 years teaching age are significantly higher than groups with less than 5 years teaching age and 6-10 years teaching age.

• There is no difference among principals with different educational backgrounds.

• The scores of the group with titles of senior primary school teacher are significantly higher than groups with titles of level-1 primary teacher and level-2 primary teacher. The scores of the group with titles of senior secondary school teacher are significantly higher than groups with titles of level-1 primary teacher and level-2 primary teacher.

(6) Summary of demographic differences in rural primary school principals' internal school management belief

On the dimension of internal school management belief, there are significant differences among rural primary school principals with different origins (urban or rural), ethnicities, regions, ages, teaching ages and professional titles; however, there are no difference among principals with different gender and educational background. To be specific, the analysis of internal school management belief shows that:

• The scores of urban group are significantly higher than rural group.

• There is no gender difference.

• The scores of Han group are significantly higher than minority groups.

• The scores of provincial capital group are significantly higher than minority

concentrated region group, and scores of other region group are significantly higher than minority concentrated region group.

• The scores of 41-50 years old group are significantly higher than 21-30 years old and 31-40 years old groups.

• The scores of the group with more than 31 years teaching age are significantly higher than groups with less than 5 years teaching age and 6-10 years teaching age. The scores of the group with 21-30 years teaching age are significantly higher than groups with less than 5 years teaching age, 6-10 years teaching age and 11-20 years teaching age. The scores of the group with 11-20 years teaching age are significantly higher than the group with 6-10 years teaching age.

• There is no difference among principals with different educational backgrounds.

• The scores of the group with titles of senior primary school teacher are significantly higher than groups with titles of level-1 primary teacher and level-2 primary teacher. The scores of the group with titles of senior secondary school teacher are significantly higher than groups with titles of level-1 primary teacher and level-2 primary teacher.

(7) Summary of demographic differences in rural primary school principals' external school environment belief

On the dimension of external school environment belief, there are significant differences among rural primary school principals with different ethnicities and professional titles; however, there is no difference among principals with different origins (urban or rural), genders, regions, ages, teaching ages and educational backgrounds. To be specific, the analysis of external school environment belief shows that:

• There is no origin difference.

• There is no gender difference.

• The scores of Han group are significantly higher than minority groups.

• There is no difference among principals from different regions.

• There is no difference among principals with different ages.

• There is no difference among principals with different teaching ages.

• There is no difference among principals with different educational backgrounds.

• The scores of the group with titles of senior primary school teacher are significantly higher than groups with titles of level-1 primary teacher and level-2 primary teacher. The scores of the group with titles of senior secondary school teacher

are significantly higher than groups with titles of level-1 primary teacher and level-2 primary teacher.

4.4 Conclusions of macro-investigation

4.4.1 The overall level of educational beliefs of rural principals is "good", while it is uneven in other levels

Statistics shows that the overall average of rural primary principals' educational beliefs is 4.3291. Of them, the average of each level range from 3.6261 to 4.6675. They are, in ascending order, curriculum and teaching belief, internal school management belief, teacher development belief, external environment belief, school culture belief, and school planning belief. Curriculum and teaching belief is significantly lower than the average of educational beliefs, and the last three items are significantly higher than the average of educational beliefs. In general, the results indicate the overall level of rural principals' beliefs is "good", yet other levels are uneven. School planning, school culture and external environment belief dimension have reached "excellent". But the belief dimensions closely related to principals' practical work, including curriculum teaching, internal school management and teacher development, score low, especially the average in curriculum teaching level just reaches "fair".

4.4.2 Urban primary principals' educational beliefs are obviously higher than those of rural principals'

There is a huge gap between urban and rural education in China. The Central Government had given a series of economic and policy support to rural schools and rural teachers, gradually narrowing the difference between urban and rural educational equipment. Statistics shows there is an obvious difference in principals' educational beliefs between urban and rural areas, indicating there is still a huge gap in the software level between urban and rural areas. It is much easier to find the difference in hardware aspects, but the difference in software level is usually ignored. Software can make up for the lack in hardware to some degree, but hardware cannot make up the backwardness in software. In this regard, the story of the Southwest Associated University in China is a good example. The Southwest Associated University was formed during the war period, so all equipment and facilities were simple and crude, materials and goods were in extremely shortage. However, many talents still kept

turning up and it created a miracle in Chinese educational history. Apparently, this is closely related to the educational beliefs of its teachers and students.

4.4.3 Rural primary principals' educational beliefs basically have nothing to do with gender

In this research, there are 268 male teachers, taking up 81.5%, and 61 female teachers, taking up 18.5%. This is consistent with Chinese reality: although majority of primary teachers are females, principals are mainly males. As the research result shown, basically there is no obvious difference of educational beliefs among rural principals with different genders, which proves that gender is not the main factor affecting the belief level. The research result shows, female principals are evidently higher than male principals only in the level of curriculum and teaching, which may be the result of the fact that majority of female principals are originally the excellent teachers and they are the experts of curriculum and teaching.

4.4.4 The educational beliefs of the rural principals with Han ethnicity are obviously higher than those of principals of minorities

China is a country with multiple ethnicities. There are the same and unique ethnic cultures among these ethnic groups. The ultimate value and pursuit of education should be consistent among different ethnic groups. However, it has been found that whether it is the overall educational belief, curriculum and teaching, teacher development, internal school management, or external environment, etc., principals with Han ethnicity are greatly higher than that of minority principals. This kind of outstanding ethnic difference should result in the reflection of education management department.

4.4.5 The educational beliefs of rural principals in minority region are the lowest

As the provincial capital of Sichuan, Chengdu City is the provincial political, economic and cultural center, as well as a national-level central city. Minority region refers to the three ethnic autonomous prefectures in Sichuan Province. They are located far away from Chengdu with concentrated minority population. Except for these, there are other vast regions, containing large cities, medium cities and small cities. The research shows that the educational beliefs of the rural primary principals in Chengdu is greatly higher than that of principals in minority regions, and on some other belief

dimensions, other region also shows higher levels than minority region. Thus, it can be concluded that principals' educational beliefs are different in different regions.

As a national education comprehensive reform pilot zone, Chengdu has an obvious advantage be it in terms of educational hardware equipment and facilities, or the software factors, like teacher resources and management level than other region and minority region. In Chengdu, there are many well-known principals. Each of their occupation mobility would exert huge influence on the educational community in Chengdu. Due to the difference on region, many families living outside of Chengdu send their kids to Chengdu from primary school, middle school, or even since from kindergarten to provide their children with better educational resources. The limited openings in public schools are not able to meet these demands, so private schools become the best choice of many families. These families would choose among boarding school, boarding-day school or day school with parents accompanying students.[12]

4.4.6 Rural principals' educational belief level generally goes up with the increase of principals' age

The statistics shows the belief level of principals aged 41 to 50 is obviously higher than that of principals aged 31 to 40 whose belief level is obviously higher than that of principals aged 21 to 30. It indicates that the belief level is closely related to the increase of principal's age. Before the age of 51, generally speaking, the older the principals are, the higher educational beliefs they hold. The educational beliefs of principals aged over 51 show a relatively high level, but the only question is that compared with younger principals, it is harder for them to accept new things. The overall educational beliefs level of principals aged 41 to 50 is the highest, because they have not only the energy and learning ability of the younger generation, but also the advantage of accumulated experiences.

4.4.7 Educational beliefs of rural primary school principals get higher with the growth of teaching age

Research result shows that the belief level of principals with over 31 teaching age is high, but the principal with 21 to 30 teaching age is the highest for their energy,

[12] Boarding school refers to that all students stay in school for whole semester, and there are particular life teachers to help them. Board-day school means students study and live in school from Monday to Friday, with their lives being arranged by particular life teachers during this period, and on weekend, student would come back home. Day school means a certain family member, mother or father or other family member, accompanies student by living with them in somewhere close to the school.

learning ability and experiences. Young principals with less than 5 years teaching age get the lowest beliefs in curriculum and teaching, teacher development and internal school management dimensions. It may be the result of their lack of experiences since they have been principals for not too long. In general, in accordance with the analysis of age, educational beliefs of rural primary school principals get higher with the growth of teaching age. This is because principals with the longer teaching age, the longer they have teaching experiences.

4.4.8 The educational background does not affect the rural principals' educational beliefs

In this research, the principals received investigation mainly hold undergraduate degree, as well as some senior high school or technical secondary education, junior college and postgraduate degree. The result demonstrates that the rural principals' with different educational backgrounds show little difference in the overall educational beliefs level and all other dimensions. It indicates that educational background is not the main factor that affects principals' educational beliefs. Chinese traditional school education stresses more knowledge and skills, and does not give priority to teaching process, teaching methods, emotion, attitude and value. While educational beliefs not only contain recognition, but emotion, will, attitude, etc., so it cannot be constructed only by recognition learning.

4.4.9 The higher the rural principals' professional title, the better principals' educational beliefs level

The result shows that the principals' beliefs level of senior secondary school teacher is high, yet that of senior primary school teacher is the highest. Like the trend of age and teaching age, the level of principals' educational beliefs enhances with the increase of professional title. This is because principal with high title usually is comparatively old and has longer teaching experience. In general, Chinese professional title evaluation system is connected not only with educational background, work performance and research achievements, but with the time of working. The time of working usually is an essential requirement for a low title to promote to a higher title. Suppose the primary teacher wants to reach senior title, he usually needs five years of working experience at least. Only people with exceptional ability could be an exception.

Chapter 5 A micro-case on educational beliefs of rural primary school principals

5.1 Introduction

5.1.1 Basic education in rural China

Since 1979, there have been three major events in China's rural reform: first, the reform of farmers' land rights starting with household contract management; second, the market-oriented agricultural reform; and third, the overall urban-rural reform initiated by rural tax and fee reform. These reforms mobilized the peasants' enthusiasm for production, reduced the burden on farmers, and promoted the development of the rural economy. In 2005, the Fifth Plenary Session of the 16th Central Committee of the Communist Party of China proposed to the Construction of New Socialist Countryside with "producing development, affluent life, rural civilization, clean villages, and democratic management". The Rural Revitalization Strategy was proposed in 2017 (Xi, 2017b). The Central Rural Work Conference clearly defined the objectives and tasks of the implementation of the rural revitalization strategy: significant progress has been made in rural revitalization, and the institutional framework and policy system will have basically taken shape by 2020; the rural revitalization will have been achieved decisive progress, and modernization of agriculture and countryside will have been basically achieved by 2035; the countryside will have been fully rejuvenated, with strong agricultural development, beautiful environment, and rich farmers by 2050. Driven by these plans, Chinese rural areas have continued to develop. Correspondingly, Chinese rural education reform has also gone through nearly 40 years.

(1) The comprehensive education reform continues

In the 1980s, the comprehensive reform of rural education began in China. Among them, the most prominent was the "three education co-ordination" of basic education, vocational and technical education, and adult education, and it formed a new rural education system. In this way, China vigorously promoted agriculture, science and technology. The "combination of agriculture, science, and education" work gave full play to the advantages and enthusiasm of agriculture, science, and education. It created a strong synergy, and established an operational mechanism that promoted the overall progress of the rural economy and rural society. Almost in sync with this, the

comprehensive implementation of “three major plans”, namely, the “Starfire Plan” of the education department, the “Spark Plan” of the science and technology commission system and the “Harvest Plan” of the agricultural sector, cooperated by the three departments closely, effectively promoted the development of the rural economy and rural society. Progress has promoted the in-depth implementation of the strategy of rejuvenating the country through science and education and the strategy for sustainable development. So far, from the countryside to the city, the strategy of comprehensive education reform has been thoroughly implemented.

(2) Efforts should be made to ensure fair and high-quality education

China consistently adheres to the strategy of giving priority to the development of education throughout the country’s development strategy. In the entire equitable education development strategy, it has always grasped expansion of educational opportunities and unwaveringly inclined toward rural areas, especially in remote villages. At the same time, make sure to improve education quality and that the people are satisfied with education. In recent years, rural education in China has yielded some achievements in the pursuit of equity and quality.

• **The comprehensive index of education rose.** According to People’s Daily, the gross enrollment rate in the three years before school reached 77.4%, which was higher than the average level of 69.2% in upper-middle-income countries; the net enrollment rate in primary schools was 99.9%, the gross enrollment rate in lower secondary schools was 100%, and the popularizing rate of compulsory education exceeded the average of high-income countries in the world. Among the nine large developing countries with large populations, the goal of achieving education for all was the highest; the gross enrollment rate for education in high school reached 87%, which exceeded the average level of upper-middle-income countries by nearly 11%; the gross enrollment rate for higher education reached 42.7%, exceeding the average level of upper-middle-income countries. The investment of funds consecutively accounted for more than 4% of the GDP in five years (Chen, 2015).

• **Balanced development of compulsory education.** At present, a total of 1824 counties (county-level cities, districts) throughout the country have passed the assessment of the supervision of the balanced development of national compulsory education, accounting for 62.4% of the total number of the country. It means that the national compulsory education has changed from “resolving a school with learning” to “quality balanced development.” The development of Chinese compulsory education

strategy is divided into three phases: the implementation of compulsory education beginning in 1985 mainly addresses the issue of "learning at school". In 2013, the State initiated the balanced development of the compulsory education supervision and assessment, which is the second stage, and that is the equalization and standardization of public services. The task at this stage is basically realized. It is about to enter the third stage, meaning balance quality from county to city, and perfect supervision mechanism.

• **Further increase the development of small-scale schools in rural areas and boarding schools in townships.** In recent years, due to urbanization, school layout adjustment, and urban-rural education gaps, a large number of rural schools and teaching sites have been removed. Rural small-scale schools and boarding schools in rural areas have become the primary form of education in rural education. In 2015, the country launched a special project to improve the basic conditions for the compulsory education of disadvantageous schools in poverty areas, which has achieved certain results by now. In order to improve the health of students in rural areas, especially in poverty areas and families, the country started to implement the nutritional improvement plan for rural compulsory education students from the fall semester of 2011. The main content includes: the Central Government provides nutrition and dietary subsidies to rural compulsory education students in pilot areas according to the standard of three yuan per student per day. The subsidy standard for boarding students with economic difficulties is increased by one yuan per day, reaching four yuan per day for primary school students and five yuan per day for lower secondary school students. The plan starts from the poorest and most remote pilot areas. It has become a major public project after the *Construction Project of Rural Boarding Schools*[13], *Overall Plan for Schoolhouse Renovation Project in Rural Middle Schools of Central and Western regions*[14], and "Two exemptions and one supplement"[15].

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[13] Since 2004, the Central Government has invested 10 billion yuan in four years to help build, rebuild, and expand the number of boarding schools based on rural lower secondary schools in the western region. Meanwhile, the boarding schools with poor conditions and the schools that do not have boarding conditions need to implement the project are to be rebuilt and expanded so that students who really need boarding can enter boarding schools with basic conditions.

[14] This project has been started since 2007. It has focused on supporting approximately 7,000 rural lower secondary schools independently set up in the central and western regions to build or rebuild living facilities such as student dormitories, canteens, and toilets, so that the school's residential facilities for boarding students will reach or approach the Standard for the Construction of Rural Ordinary Primary and Secondary Schools, basically eliminates the phenomenon of "Datongpu" and Off-campus Housing.

[15] It refers to the state fully waive the tuition and miscellaneous fees for students in compulsory education (primary and lower secondary schools), provide free textbooks for students in compulsory education in rural areas, and provide subsidy for boarding students of rural family with financial difficulties.

• **Ensure that no student does leave school because of family economic difficulties.** The government attaches great importance to the issue of schooling for students with family economic difficulties. A national student funding policy system that is predominantly government-led has been established, with schools and communities actively participating, covering pre-primary and post-graduate education. The scope of funding has achieved "three full coverages", including full coverage of all school sections, public-private schools, and all students with family economic difficulties. The "three full coverages" was achieved in terms of funding effectiveness, by which students did not need to worry about enrolling school, entering school, and will leave school after entering school, guaranteed that "don't allow a student to be out of school because of family economic difficulties." For example, in 2016, the country has accumulatively funded 91,261,400 students of various types at all levels; the accumulative amount of funding is 168,876 billion yuan (excluding free textbooks and supplementary dietary supplements). Financial arrangements for compulsory education at all levels for national free textbooks amounted to 16.740 billion yuan, and nutritional dietary subsidies stood at 25.1 billion yuan.

(3) Strengthen the construction of teachers, and successively launch a series of teacher support programs

In recent years, some achievements have been made in the construction of rural teachers.

• **Put forward specific measures for the construction of rural teachers.** In order to solve the three problems of rural teachers: "cannot go," "cannot keep," and "cannot teach well", it puts eight initiatives. For example, to comprehensively improve the ideological and political quality and professional ethics of teachers in rural areas; to expand the channels for rural teachers to supplement; to improve the living conditions of rural teachers; uniformly establish standards for urban and rural faculty and staff; professional title is skewed towards rural schools; comprehensively enhance the ability of rural teachers; and establish an honor system for rural teachers.

• **Multi-channels recruitment of rural teachers.** The Central Government has invested special funds to recruit special teachers to cover rural schools in Central and West China; lead local governments to carry out free education for normal students, take free admission and duty refunds, and attract college graduates to teach in rural primary and secondary schools; vigorously guide a large number of excellent school principals and teachers support rural education through regular exchanges and

integrated management of school districts.

• **The status and treatment of rural teachers have improved.** For rural teachers, special subsistence allowances are given; build turnaround dormitories in remote and difficult areas to solve the housing difficulties; establishing a system of honors for rural teachers, governments at all levels issue honorary certificates to long-term rural teachers, and lean toward rural teachers in honors, effectively improving rural teachers' sense of pride and mission.

• **The quality of teachers has greatly improved.** ① The national-level teacher training program continues to be implemented, and the quality of teachers is improved. On the one hand, the countrywide exemplary teacher training, to train the backbone of primary and secondary school teachers in China, to develop a number of high-quality curriculum and teaching resources, to support the "Central and Western Rural Backbone Teacher Training Project" and the professional development of primary and secondary school teachers. The content mainly includes: training for backbone teachers, head teachers, weak disciplines teachers and remote training in primary and secondary schools. On the other hand, targeted training of rural compulsory education teachers in the central and western regions, to increase rural teacher training and improve rural teachers' teaching ability and professional development. The training plan mainly includes: out-of-job training, short-term intensive training and remote training. ② Rural schools (kindergartens) principals training became normative, and governments at all levels increased the training of leaders. Especially since the implementation of the national training plan reforms in 2015, it focuses on supporting the training of rural school principals in the central and western regions. School principals' abilities of running a school are continuously improved in rural schools and kindergartens. ③ Implementation of information technology application capability upgrading project, giving priority to rural teachers. ④ Promote professional title system reform of primary and secondary school teachers: increase the proportion of middle-level and senior-level posts in rural teachers; establish top-level professional title for primary and secondary school teachers and broaden the career development channels for rural teachers.

However, while seeing the achievements of rural education in China, it must be soberly recognized the problems in rural education: at present, rural compulsory education basically presents the pattern of small-scale rural schools, boarding schools in townships, and large-scale schools in county-level towns. In order to pursue higher

education quality, some rural children choose to go to large-scale schools in counties farther away from home. Some of them need parents to pick them up every day, some stay at the school, and some parents rent apartments and accompany them nearby the school, which virtually increases the burden on the family. However, the small-scale rural schools near the home still face the problems of relatively poor schooling conditions, insufficient operation funds, serious loss of students, an urgent need to strengthen teaching staffs, and a low quality of education. Boarding schools in township still need to further strengthen the promotion of standardization construction, improvement of management systems, guarantee of boarding students' food, housing, and transportation, provision of necessary service personnel and enrichment of students' campus cultural life.

5.1.2 The purpose and questions of case study

Researchers believe that educational beliefs exist in living people. To fully explore the educational beliefs of rural primary school principals, we should understand them from the macros and micro perspectives. After surveying and analyzing the 420 primary school principals in Sichuan Province in China, the researchers turned macro perspective into micro scenario, entered the real working and living world of a rural primary school principal, and explored the ins and outs of his educational beliefs. This study attempts to use ecological systems framework to analyze the issues of formation, change and promotion of Mr. Liu's educational beliefs.

The purpose of the case study is to manifest the realistic performances of Mr. Liu's educational beliefs, explore the influence factors, and analyze the impacts of educational beliefs on school-running practice. The results on the principal's educational beliefs from the micro perspective should serve as a useful complement to macro research. Therefore, this study should provide a comprehensive picture of the educational beliefs of Chinese rural primary school principals.

Four types of specific questions are discussed. Firstly, what education beliefs does the principal have? Secondly, what are the factors that affect the formation and change of educational beliefs of rural primary school principals? How do the factors affect the formation and change of educational beliefs of rural primary school principals? Thirdly, how do the educational beliefs of rural primary school principal affect school-running practice? What are the actual effects? Fourthly, how to promote the educational beliefs of rural primary school principals?

5.1.3 Field

When researchers decided to explore educational beliefs of school principals with the case study paradigm, they started with following two points: first, to be typical, it means that the target principal must have educational beliefs that expressed in his daily work, and are willing to share his beliefs with others. Second, to be ordinary, meaning that the target school and school principal must be ordinary, like the vast rural primary schools and principals, and they are not the best but not the worst. In fact, in the opinion of the researchers, each school principal is not ordinary. The so-called ordinary people here just want to make the choice of schools and principals representative as possible, so as to monitor the situation of rural primary schools and principals. Only in this way can the research data obtained from individual case reflect the themes, and can the research conclusions be applied to other rural primary schools to some extent. Obviously, researchers' choice is not much, because they are studying the school principal. In many Chinese people's minds, the principal is the leader which is not easy to close, especially to ordinary people like researchers who are strangers, even trying to study him. With the help of Professor Wang, the researcher chose Longxiang Primary School[16] at Dujiangyan, Chengdu, Sichuan Province as research field, and Mr. Liu as the case principal (see Figure 6).

Figure 6: The location of case school

[16] According to research tradition, the researcher did not use the formerly name of this case school and its located town, but called Longxiang Primary School and Longxiang, respectively. In a similar way, case school principal —Mr. Liu and other persons involved in this article are also not authentic names.

In this research, researchers' vision is mainly concentrated on two systems: the first is the school system, which is the school's history, environment, school schedule, curriculum and teaching, characteristic activities and teaching staffs. The principal's educational beliefs are externalized in all aspects of the school system. The second is principal's ecological systems, including microsystem, mesosystem, exosystem, macrosystem and chronosystem. The principal's educational beliefs are formed and evolved in these systems. Fieldwork should take researcher as main research instrument into the living space of case principal. It needs to collect qualitative data through specific methods such as interviews, observations, and document inspections. In the process of data collection and interpretation, researchers need to always maintain value neutrality.

To be able to choose the case school and enter it smoothly, the researcher must have someone recommend it, and also need to get the consent of the executive leadership and school principal. Professor Wang is an expert in the field of education management. With her help, the researcher eventually chose Liu Gang, Principal of Longxiang Primary School, as the case. Firstly, the researcher must ask for the consent of Mr. Liu. His degree of cooperation is the key to the success of this research which field is within his jurisdiction and object is himself. Fortunately, after having contacted Mr. Liu by telephone to indicate intention, he readily agreed, and at the same time told the researcher must follow the procedure to report to the executive leadership of the Education Bureau. It is very hard for the researcher to be able to get the consent of Mr. Liu. The researcher previously was rejected by other principals and even Professor Wang did not succeed in coordinating. Then, according to the procedure, the researcher would like the approval of Director Yao, of the Dujiangyan Education Bureau. Researching on the principals, the education authorities are already more cautious and international affairs is another sensitive topic. So the researcher took up the identity of a foreign university researcher and applied for it as an associate professor at a domestic university. The application passed. Later the researcher learned that Director Yao, who was also a principal, has always been positive about educational research. While expressing gratitude, researchers cannot help but think that this is another representative, from academics to be officers. Later, the researcher sent an interview outline to Mr. Liu via email and agreed to pay a visit to the school.

After everything was arranged, the researcher set off with graduate student Xiaowei. With the support and cooperation of Mr. Liu, the researcher still needed to

find a guide in the target school. The significance of the guide is as follow: on the one hand, the guide should help the researcher go into the case school and have a close look at the expected investigation objects, but not just what the principal shows, which maybe get the in-depth research results. On the other hand, in a strange environment, an acquaintance can provide more convenience. With the help of a guide, it can save both time and effort. When the researcher was looking for it, she turned up on the playground of Longxiang Primary School.

On the first day at Longxiang Primary School, Mr. Liu and I were observing the children's exercises at the interval of classes on the playground. A young teacher ran over to me with a smile and took the initiative to say hello and called out my surname. I was very surprised, because originally both did not know each other. Her name is Xiaoqin. She has short hair, bright and big eyes, and very white teeth. She wore a yellow down jacket, jeans, white sneakers, and a cute decoration on her mobile phone. She is particularly young and her enthusiasm and initiative have left a deep impression on me. Later I learned that the week before I went to Longxiang Primary School, Mr. Liu had already told the teachers about it. So, she noticed me when I first arrived at Longxiang Primary School. She secretly took my picture and sent to her teacher who is my colleague. It confirmed that she graduated from the university where I worked in China. Fate is always wonderful. She became the guide.

Xiaoqin, Longxiang Primary School Young Pioneers counselor, female, 26 years old, Han ethnicity, bachelor degree. She is one of the few young people at the school. Xiaoqin is not a local person, recruited to Longxiang Primary School when undergraduate graduated. In addition to being responsible for the work of the young pioneers of the school, she is also responsible for the teaching of the Chinese language and morality and life classes in the third grade. Judging from the administrative power of the school, the counselor has not yet reached the level of the director, but it is already one step closer than the general teacher, which means that Xiaoqin may be the director of the school in the future. During the research of Longxiang Primary School, with the help of Xiaoqin, we interviewed five teachers and more than 10 parents[17], collected a large number of Longxiang Primary School characteristics of activities and faculty construction information. When Xiaowei was ill because of not adapting to the climate of Longxiang, she also gave us a hand. So far we have maintained friendship.

At Longxiang Primary School, researchers spent most of time with Mr. Liu. The

[17] It does not include interviewees arranged by the Principal.

interview with Mr. Liu was interspersed with the time when he stopped working and could chat. Interviews with teachers and parents were usually arranged when the needed to evade and he was busy, or after school. Interviews were conducted using semi-structured or unstructured interviews. Recordings were obtained after consent was obtained. Researchers hoped that they could observe the entire picture of the day-to-day running of rural primary schools. Therefore, they observed every corner of Longxiang Primary School, including: classroom, sports ground, school principal's office, teacher's office, canteen, dormitory, school gate, library and other educational field as well as all kinds of special field, such as morning exercise, exercise between classes, going to school, going home after school, teacher meeting and flag-raising ceremony. In short, starting from 06:50 to 20:50, when the dormitory went out, all was time for fieldwork. After that, the interview records and observation diaries were reorganized. In the meantime, after obtaining consent, researchers read through Mr. Liu's work plan, summary, work notes, learning and reading notes, school magazine, research reports, the program and summary of major events, Longxiang town annals， as well as Dujiangyan county annals. Through the above methods, researchers collected sufficient qualitative data for the analysis of Mr. Liu's educational beliefs.

Researchers told each respondent frankly： Firstly, participating or not in interviews would be voluntary. Secondly, with regard to the individual privacy, the researcher would take their advice if they do not want to expose some information to the public. The researcher would record just interviews agreed. Thirdly, the identity of all participants would be kept anonymous, and readers of the research would not be able to deduce their identities. The purpose was to respect all interviewees, dispelling their concerns in order to obtain more comprehensive and truthful information. Very fortunately, up till now, researchers did not receive any feedback from the respondents which was the request they did not want to be exposed to the public.

Mr. Liu accepted that the researcher studied his school and himself with such an open attitude, which is very commendable. This type of privacy-related case study is generally not easy to accept, let alone an experienced principal. The researcher thought that was related to the personality of his honor and frank. It also stemmed from his 32 years of rural education. However, the responses of teachers and parents were not the same. In terms of teachers, some of them could express their views fairly and candidly, and some were slightly unnatural. There were several teachers who had been arranged by Mr. Liu to receive group interviews. They are all young and less than 30 years old.

They answered each of my questions seriously. The speeches were full of praise and admiration for Mr. Liu. A 55-year-old teacher found by the researcher, felt very cautious. After understanding the general intention, he said that he needed time to think about it and would reply in a "quiet place" after school. In the interview, he sounded like taking a draft in mind and answered all the questions the researcher mentioned earlier. Although the researcher had previous confidentiality promises, he only allowed the researcher to use paper and pen to record, no use of recording pen. This was the only one teacher who did not allow the researcher to use the recording pen. There was another middle-aged teacher, who ended the interview on the grounds of having to attend classes after two simple sentences. On the parent side, most parents were more cooperative. A few parents used the phrase "do not ask me, I do not know the word" or "his mother is taking care of him and I do not know anything" to reject researchers.

Before researchers went to Longxiang Primary School, we expressed our wish to Mr. Liu that we would not interfere with the normal work and study of teachers and children because of our arrival. Obviously, he told the teachers about the news that we would come, and told them "do not go abroad to lose their faces". Maybe this is why the 55-year-old teacher was cautious. In this school where many senior leaders, scholars and experts had been received, the teachers treated the researcher as "another expert," and a "provincial expert".

5.1.4 The structure of the narrative

The micro-case section was based on the macro investigation and further penetrates into a rural school to analyze the educational beliefs of a rural primary school principal. In the face of Longxiang, the researcher thought about a village in China. Faced with Mr. Liu, the researcher thought about more than 200,000 primary school principals in Chinese rural areas.

This case study of educational beliefs mainly includes three parts: introduction, research findings and analysis, and conclusions. The introduction section mainly introduces rural basic education in China, the purpose, questions and specific methods of case studies, and the situation of the research field. The research findings and analysis section mainly describe the situation of schools, including schools' environment, school schedule, curriculum and teaching, characteristic activities and teaching staffs, the realistic performance of Mr. Liu's educational beliefs, using Bronfenbrenner's ecological systems theory to analyze the factors affecting Mr. Liu's educational beliefs, and manifest the actual results of educational beliefs. The last part

draws the conclusions based on the findings and analysis of the case study.

5.2 The rural primary school

5.2.1 A school at the foot of the mountain

There is a charming place called Dujiangyan, located in the northwestern of Chengdu, the capital of Sichuan Province. Dujiangyan City is well known for the world-famous Dujiangyan Water Conservancy Project, and is reputed as the “Source of the Land of Abundance”. Dujiangyan covers an area of 1,208 square kilometers, with a population of 680,000, spanning 34 km from east to west and 68 km from north to south. Longxiang is a small town in Dujiangyan. Xiaowei and the researcher set out from Chengdu, drove nearly 90 kilometers to Dujiangyan City, and then continued to drive for half an hour to Longxiang (see Figure 7). Even at the beginning of January, both sides of the way were surrounded by green hills, trees, and pleasant scenery. According to the navigation, Longxiang Primary School was found, located at the foot of the mountain. This is a school that “condenses the love of the world”.

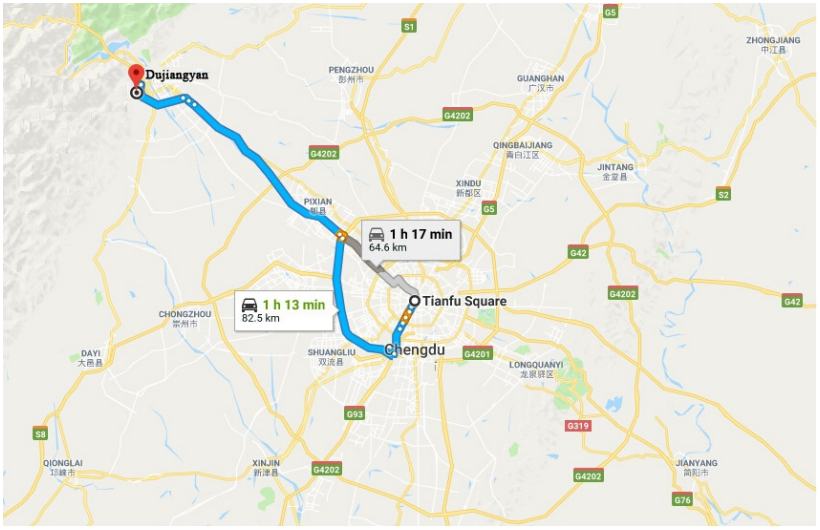

Figure 7: The roadmap of the fieldwork

Longxiang Combined Primary and Lower Secondary School of Dujiangyan City was built in 1952. It administered one central primary school, one small village school, 13 classes and 358 students. There were 8 teaching classes in the lower secondary school and 450 students. The 5.12 earthquake in 2008 caused tremendous damage to the school. The lower secondary school collapsed, the central primary school was seriously damaged, the 13,192-square-meter school building and teaching facilities and

equipment were completely destroyed, and the direct economic loss exceeded 10 million yuan. The school running was interrupted. The total number of deaths in the entire school was more than 300. After the disaster, with various help, the school promptly organized teachers to take the lead in resuming classes at the village school on May 15. The central primary school resumed classes in tents on June 4, and entered boardroom school on June 23.

After the earthquake, Longxiang Combined Primary and Lower Secondary School set up a central primary school, a small village school, 13 teaching classes and 349 students. There were three classes in the lower secondary school and more than 80 students and one year in board room school transition. Afterwards, according to the disaster reconstruction planning of Dujiangyan and Longxiang township, the school was integrated into Longxiang Primary School. The students of lower secondary school moved into Yangxiang Lower Secondary School, and the original pupils in village school moved into the new Longxiang Primary School. The service area of the school was for entire Longxiang township, and with half-boarding school system.

At present, Longxiang Primary School has a total of 443 students, including three disabled children and 197 boarding students. There are 38 staff members in the school (including five temporary staff members[18] and one special post teachers[19]). Today, school building adopts all-wood structure. The project started in October 2008, was completed on August 25, 2009, and was delivered on September 1, 2009. The school covers an area of 21,744 square meters and a building area of 5,456 square meters (including teaching building: 1,067 square meters; office building: 1,628 square meters; functional building: 696 square meters; dormitory: 1,277 square meters; canteen: 788 square meters), and is divided into three parts including teaching and office area, living area, and sports area.

The teaching and office area has 12 classrooms that can accommodate 540 students. Library, computer room, multi-function hall, music, art, science room and other functional rooms are available; facilities and equipment in each room are basically

[18] Temporary staff members are not formal teacher, who are paid 39,800 yuan per person per year by the Dujiangyan Education Bureau for relieving the pressure of teacher shortage. The insurance premium is borne by school funds.

[19] Special post teacher is a special policy for compulsory education in rural areas in the western region. Through open recruitment of college graduates to teach in rural schools in the western regions, guide and encourage college graduates to engage in compulsory education in rural areas, innovate the complementary mechanism for teachers in rural schools, gradually solve problems such as insufficient teacher and irrational structure in rural schools, improve the overall quality of rural teachers, and promote the balanced development of urban and rural education.

in place, especially the art room and music room donated by a Sichuan earthquake relief foundation. The living area consists of a canteen and an accommodation building. The canteen has 828 square meters and is divided into two floors, where students and teachers can dine together. The three-floor accommodation building has 38 dormitory rooms, each with a toilet and a water heater, and can accommodate 200 students. All sports areas are covered with plastic runways equipped with basic sports facilities.

The beautiful school at the foot of the mountain has three characteristics. First, it is a green school. All-wood school buildings located in the campus of green mountains and waters, give birth to Longxiang Primary School's "Green Education" philosophy. It is the first all-wood schoolhouse in China, which is characterized by "green, energy saving, and environmental protection". The school building consists of a total of three units, a dormitory, a canteen, and a teaching building. Except that the kitchen uses reinforced concrete structure, the rest are light-wood buildings. All the timbers are processed in Canada according to the design of the school. They are fireproof, heatproof and waterproof and then transported to the school to complete the assembly. "According to Canadian experts, this school has more than 600 tons of charcoal, because it is all wood." Mr. Liu introduced this school building with some pride. To encourage students and enhance their awareness of sustainability, the Chinese Academy of Sciences X academician team used a prize of national science and technology progress to set up a scholarship for the earth at Longxiang Primary School. So the school holds "Green Education" philosophy of sustainable education development. Such a school building is definitely very good in the Chinese rural primary schools.

Second, it is a safe school. After the Sichuan earthquake in 2008, according to national standards, schools and hospitals demanded Richter-Eight earthquake resistance. This school is resistant to nine. The school conducts evacuation drills once a month for fire, stampede and earthquake prevention. The school has a set of advanced equipment. Mr. Liu introduced that the school's geological monitoring system is connected to the national seismic station. Before the earthquake transverse waves come, the alarm will begin to ring and everyone will be organized to orderly evacuation. Liu added: "Actually, if the earthquake happens again, instead of going outside, the inside is safer." The vast majority of rural schools have almost no such advanced earthquake prediction equipment, even in urban schools. Such regular and formal evacuation drills are rare in other schools as well. In Longxiang, the researcher noticed that the corridors in the school buildings are particularly spacious. Mr. Liu explained that it was also designed

for evacuation in care of disaster. This school puts safety in a very important position.

Third, this is a school of love gathered in the world. It constructed with the assistance of Shanghai Municipal Party Committee and Municipal Government, designed by Shanghai Tongji University, and donated by Canada. It was constructed by the Shanghai Greenland Construction Group. The art room was donated by an earthquake rescue foundation of the United States and the artistic wall with creativity by Professor Z from one University. This wall consists of 882 bricks, which are made of eight cities from China and the United States. More than 3,000 children who came from the Kentucky cities of Louisville, Lexington, Danville, and Bardstown, Guangdong, Jiujiang, Chengdu and Longxiang painted on the adobe, and sent it to the school to build a wall after firing it in the local area. The name was “we are family”, which implied the children from all over the world were all family members. When encountered difficulties and disasters, they would care for each other and help each other. The music classroom has a set of Orff percussion instruments donated by the same rescue foundation, which is used for Orff music therapy and music teaching. Hence, the reconstruction of this school depends on the love of the whole society and the tenaciousness of the teachers and students.

5.2.2 Daily schedule

The school day starts at 6:50 in the morning. Students should get up, was hand clean at that time. Morning exercises（7:15-7:30） is in the sports ground, which participants are all the boarding students, one teacher on duty and one director. The main content of the morning exercise is running around the playground for about 15 minutes. After the students arrive at the playground, they first need to collect and count the number of students, then start running, and finally gather again. The on-duty director or teacher sums up the performance of morning exercises. Morning exercise starts at 7:15 when the playground is almost dark and there is no street light. With the faint light of the canteen in the distance, I could barely see the children gathered together. According to Longxiang town annals, the average temperature of Longxiang at the beginning of January is 3.5 degrees. Due to its location in the mountains, the temperature difference between morning and evening is particularly great. The temperature during morning exercise should be around 0 degrees. Xiaowei struggled very hard when she got up at 6:50. She felt too cold to get up. Because I got up, she was embarrassed to continue to sleep, so she got up. On the same day, she caught a cold. Symptoms such as dizziness, diarrhea, stomachaches, etc., all appeared. With the help

of Xiaoqin, they went to the township hospital for medical treatment and then slowly recovered after sleeping in the dormitory for a whole day. After two rounds of running with the children in the morning exercise, I stopped to chat with students. Many children said they did not like living in school and wanted to go home. A third-year girl told me that they had cried every day when they first started living in the first grade and now they do not cry. It seemed that I only heard a little boy saying that he likes to live in school, because there are many classmates and more fun. Looking at the 200 pupils and watching their colorful water cup laid a line on the playground, I could not help thinking why they could not go home?

Breakfast (7:35-8:00) is in the canteen next to the playground. The canteen is very spacious and consists of two floors, but usually only the first floor is used. Students are queued up for admission and the chef distributes breakfast. The breakfast is almost the same every day, porridge and steamed bread. The latter changed into steamed buns every Wednesday. Only students who live in the school can have breakfast and dinner at the school. They need to pay eight yuan per day for living expenses. Economic difficult students can apply for assistance. The state gives a subsidy of 1,000 yuan per student per year. At breakfast, most of the teachers have already arrived at school. They can have free breakfast in school. I met Mr. Liu, who came to have breakfast at the canteen. I noticed that the teachers have pickled vegetables[20]. Mr. Liu said it was brought in by the teachers themselves. For food safety reasons, the school must not provide students with such unhealthy food.

The morning meeting (8:20-8:30) is equivalent to the morning reading and is performed in classrooms. Early reading includes: Chinese language, mathematics, and English. It is generally coordinated by the teacher of these three courses. Two days for Chinese language, two days for mathematics, and one day for English. The relevant teacher is on duty. All staffs have already been at work until now.

From 8:35 to 12:15, there are four lessons in the morning. 40 minutes per lesson, break for 10 minutes between classes. The half-hour between the second lesson (9:25-10:05) and the third lesson（10:40-11:20）is called exercise at the interval of classes (10:05-10:35). The five minutes before the fourth lesson is eye exercise (11:30-11:35). At 10:05, the school bell rings and the school radio broadcasts special music to remind all children and teachers to go to the playground for exercises. Longxiang Primary School's exercise at the interval of classes is one of their major features, which will be

[20] A kind of home-cooked dish that is common in Sichuan Province of China, which is to put the vegetables in proper amount of salt water and soak until the time is ripe and pick up for eating.

discussed later. During class this time, all teachers and children will go to the playground to do exercise together. All students, at 11:30, complete a set of eye exercises in the classrooms. Afterwards, the fourth class (11:35-12:15) continues. After the fourth class, students will gather in the entrance of the canteen, and then enter in turn. All students have lunch at school. The lunch is also distributed by the chef. Because the lower grade students move slowly, the order of the meals starts from the lower grades. Lunch is two kinds of meat, one vegetable, and one soup. Every day there will be changes. Because the country implements the nutritious meal program, each rural student only needs to pay three yuan at noon, a state grant of four yuan, and grant of one yuan more per day for utilities and workers' salaries. In other words, every rural student just needs to pay three yuan per day for lunch. At the time after lunch, students are free but all students are not allowed to enter the dormitory. Therefore, during the lunch break, children will play freely in the classroom or on the playground, and some will have a reading or write assignments. Starting from 13:30, the head teacher of each class are responsible for organizing students to sleep in the classroom, reading, and doing homework, etc. The head teacher will take the opportunity to handle some class affairs.

The afternoon class starts from 14:00 to 15:35 for a total of two lessons. There is an eye exercise between classes. After 15:35, it is time for sunshine exercise. The head teacher of each class is responsible for organizing students. In fact, this time is mostly free. As for non-boarding students, 16:20, it is time for going home. In addition to the evening self-study teachers in each class, the school has one on-duty teacher and one on-duty director. The rest of the teachers are off work, and they can go home to accompany and take care of the family.

Boarding students start their dinner at 18:00, procedure same as the breakfast. Beginning at 18:50, evening self-study teachers organize students study in the classroom until 20:10. During this time, students mainly do their homework, read extra-curricular books and occasionally watch movies. The on-duty teacher and the on-duty director would patrol in the teaching building, evaluate the evening self-study teacher's work and handle the student's sudden situation. Students can return to warm dorms after finishing evening study at 20:10. The teacher's work is over. At this time, some of them would write lesson plans, check assignments, and read books in the office. Some would chat with home and friends in the dormitory prepared for evening self-study teachers. And others will drive home. The evening self-study teacher of each class is on duty in

turns, and each teacher is on duty once a week. For this, they can get overtime payment ranging from 35-40 yuan. The specific amount depends on the balance of the year-end school funding.

In the dormitory, the life teachers[21] are responsible for urging students to wash, and go to bed at 20:50. At this time, the life teacher would patrol the dormitories and urge them to keep quiet. Similarly, on-duty teacher and on-duty director are responsible for dealing with emergencies, such as contacting the parents of sick students or sending them to hospitals. At this time of day, the school is quiet down and all the teachers are off work. The night in the mountains is silent and cold. Upon arrival, Mr. Liu had prepared the best duty room and asked the life teacher replaced the clean bedding for us. Because the dormitories are limited, on Wednesday, we have to go to Dujiangyan to live in a hotel. The mountains are too cold, the only heating equipment, electric blankets, but it is always not warm enough. I cannot stand to work on the desk at all. All the interview records and observation diaries are completed in my 90cm wide bed at Longxiang Primary School. The quilt is the warmest place in the world.

5.2.3 Curriculum and teaching

Longxiang Primary School has a total of 13 classes in six grades, including two classes in Grades One, Two, Four, Five, Six, and three classes in Grade Three. Since there are only 47 people in Grade Four, they have merged into one class, so there are actually 12 classes in Longxiang Primary School. Courses offered include: Chinese Language, Mathematics, English, Calligraphy, Music, Art, Sports and Health, Science, Information Technology, Morality and Society, Life and Ecological Security, Thinking Mathematics, and Classical Reading. Except for the two courses of music and art that are undertaken by professional teachers, the rest of the teachers are responsible for at least two courses and it is very common for undertaking three courses. Usually a teacher undertakes one of the Chinese language, mathematics, and English, and then adds other courses. In terms of regular courses, Longxiang Primary School has never had a beautiful performance, and Mr. Liu has not introduced it too much. From the school's work plan and summary, it can be told that in order to get rid of the status of weak schools, the school has thought of many ways. Now it is implementing a plan for improving teaching quality, which is that three principals are responsible for the three

[21] Life teacher refers caretakers who are responsible for management of students' residential matters, caring about students' feelings, and enriching students' school lives in Chinese boarding schools, usually by hiring temporary workers rather than formal teacher service.

main subjects respectively, and each director is responsible for one grade.

In recent years, Longxiang Primary School has initially formed a school-based curriculum system with school characteristics in light of the reality of schools, teachers, and students. Mr. Liu introduced a lot in this regard.

(1) Maintain and promote the tradition of calligraphy. Longxiang Primary School had a good calligraphy education tradition before the earthquake. In order to maintain and promote this advantage, the school specially established a teaching team, developed textbook, set up courses, established an interest group, and edited the couplets to display the calligraphy education achievements. The school takes calligraphy education as a breakthrough, and uses calligraphy education achievements to construct "scholarly campus".

(2) Implement traditional culture education. The school established the Chinese traditional culture lecture and compiled the school-based textbook *300 Must-Recite Poems Longxiang Primary School*, including 24 poems writing Dujiangyan and Qingcheng Mountain, 60 poems praising the lotus, and 216 classic poetries, requiring students to memorize a poem every week. Various channels and methods are used to implementing education of Chinese traditional etiquettes, festivals, and solar terms knowledge at different phases of studying. In the end, every graduate of Longxiang Primary School must recite the *300 Must-Recite Poems Longxiang Primary School*, speak 100 traditional stories, and know the origins, customs, and related poetries of Chinese 24 solar terms and traditional festivals.

(3) Conduct comprehensive practical activities. Because the school is adjacent to the beautiful Lotus Lake, the school has developed a school-based curriculum around the lotus. Through the scientific practice activities, to learn about the lotus, learn the spiritual qualities of the lotus through the moral practical activities, and chanting lotus by Chinese language activities.

The main forms of scientific practice include: launch the Lotus Lake biodiversity survey to form an investigation report utilizing extra-curricular activities and holidays; carry out environmental education activities in the Lotus Lake and propose environmental protection suggestions; produce specimens of indigenous species and establish a database of specimens; record local daily climate conditions, draw annual temperature charts, weather changes charts, and maps of the 24 solar terms climate. All the results were displayed on the school magazine, "*The Green Lotus Lake*". Since it was established in December 2013, it has basically issued once an academic month,

including teacher and student productions, school history, activities, various knowledges, and so on.

5.2.4 School activities

Longxiang Primary School has carefully designed the school's regular and characteristic activities. Regular activities such as the flag-raising ceremony on Monday morning, the opening ceremony at the beginning of each semester, the annual Children's Day celebrations, the annual winter games, etc., are similar to those of other schools. The characteristic activities mainly include:

(1) The series of thematic activities: green and environmental protection season (March-April), colorful art season (May-June), popular science innovation season (September-October), health and sports season (November-December). Each year in the corresponding month, the content of the extracurricular activities is based on the corresponding theme.

(2) English summer camp. This was mainly attributed to some U.S. volunteers brought by Professor Z after the earthquake. The U.S. teachers and students came to Longxiang Primary School to offer courses in music, art, science and technology, and language in summer holidays, and finally showed their achievements in the form of English drama. Such activities are not fixed during the summer holidays every year.

(3) Exercise at the interval of classes. It divided into two types: one is outdoor activities. The first step is training and demonstration of the student's queues. The second part is rhythmic exercises. The third part is the large-scale team dance, "Dati" dance. All teachers and students are involved, and the atmosphere is very harmonious. The fourth sections music sign language exercise: under the accompaniment of grateful inspirational music, all students complete a set of sign language exercises. The theme is "Gratitude and Endeavour". Without password, students consciously complete the activities such as team gathering, entering, exercises, and exits during the accompaniment of different music. The other is indoor activities. If encountering rain or snow, students cannot go to the playground, and they will complete a set of indoor aerobics created by the school in the classroom. The school believes that the exercise at the interval of classes can reflect the school's regular management, academic atmosphere, and the mental outlook of teachers and students. "The healthy and sunny exercises contribute to cultivating discipline, collective sense of honor, class construction, and moral education." Therefore, the school has built it as a school feature and has also attracted a number of peer schools to visit and communication.

(4) Arts education activities. The school through the art class to carry out collage art, painting of masks used in Sichuan opera, ceramic art and other activities. All students participate and love those activities. There are a lot of students productions showed at the hall and corridor. It is particularly worth mentioning the collage art of Longxiang Primary School that is based on the objects familiar to the children's lives. It uses the children's lives as the source of creativity, absorbs the nutrients of the local folklife, and expresses the contents of life in the form of collage. Under the guidance of the art teacher, the children understand the relationship between art and life, feel the beauty of life, and express the children's longing for a better life.

5.2.5 Teaching staffs situation

Longxiang Primary School has 38 teaching staffs. Five are temporary staff, one is special post teacher, and 32 are formal staff. In total of 38 persons, 14 persons (36.8%) are below the age of 30, 15 persons (39.5%) are over the age of 48, 9 persons (23.7%) are aged 30-48. There is one principal, one deputy principal of teaching (serving as director of teaching), one deputy principal of moral education, one director of executive office, one director of moral education, one director of logistics, and one chairman of the labor union. In addition, the brigade counselor, librarian, executive office staff, teaching office staff, cashier, accountant, health and epidemic prevention staff, and dormitory management staff is one person respectively. Except Mr. Liu, the remaining 14 individuals serve as faculty. There are 23 full-time teachers. In addition, three gatekeepers, two cleaners, two life teachers and five canteen chefs are hired, who do not undertake teaching work. Several issues in the teaching staffs of Longxiang Primary School are as follows:

(1) Irrational flow. Outstanding teachers have been outflowed for a long time. Schools have not been supplemented by new teachers, resulting in continuous accumulation of problems of poor teachers. The gap of the teacher quality between Longxiang Primary School and urban schools and large-scale schools is getting bigger.

(2) Insufficient number of teachers and unreasonable professional structure. In the first semester of 2017, due to a serious shortage of teachers, it was impossible to arrange all teaching tasks. Mr. Liu served as a Chinese language teacher. It was that he picked up pointer again after leaving the platform for 20 years. In China, it is very rare that the principal teach in class, let alone the main subjects.

The problem of unfavorable disciplines is relatively prominent, especially in disciplines such as music, art, English, and information technology. In 2010, 2011, and

2012, the school did not have an art teacher and the art class relied on social volunteers. In 2013, there was only an art special post teacher. In 2014, due to maternity leave, another special post teacher was replaced. Although these courses, such as music, art, and physical education were set up, the scope of the grades opened was difficult to guarantee.

(3) The aging of teachers' structure. The structure of the school teachers is dumbbell-shaped, that is, the two ends are large and the middle is small. Now the structure has improved a lot compared to two or three years ago, because nine young teachers were formally recruited in recent years. During the interview, Mr. Liu introduced an evergreens mentor[22], Mrs. Chen, to the researcher. Mrs. Chen is the fourth mentor of Longxiang Primary School. Fortunately, she eventually had a cultivable object in this year. In the past three years, the evergreen mentor had no object because the majority of teachers were over the age of 48, almost the same as the mentor.

(4) Low quality of teachers. ① Many teachers have been working in rural areas for a long time, ten years, 20 years, or 30 years. Because the management is relatively backward, the work and living conditions are arduous, and the attention of the society and parents to education is low, it caused some teachers having no attempt to make progress. ② Some middle-aged and old-aged teachers, despite their rich teaching experiences, have fewer learning opportunities because of various reasons. Some teachers are conservative in their teaching, lacking of professional ability. Although curriculum reforms are surging and school hardware is getting better and better, their educational ideas and teaching methods remain unchanged. Many teachers still use the traditional teaching method of "a piece of chalk + a mouth + a book", and the quality of education is very problematic. For young teachers, because of poor teacher quality and poor teaching quality, it is not effective lead in terms of professional growth. ③ Due to the lack of current management system and investment in education funds, it is difficult to implement effective incentive mechanisms, resulting in lack of sense of competition,

[22] Education Bureau of Chengdu City has implemented batches of "Evergreens - Famous Retirement Teachers in Rural Areas" project since 2010. The silver-haired teachers are sent to outskirts areas, guide local education, teaching, and research to promote the professional development of local teachers, improve the quality of rural education, and accelerate the balanced development of urban and rural compulsory education. The scope is compulsory education schools in the third circle of counties in Chengdu, and the positions are divide into two categories: supervisor and mentor. The former is employed by Education Bureau, and the weak schools are equipped with mentors. Chengdu provides monthly subsistence allowance ranging from 4,600 to 5,200 yuan, and requires local governments or schools to provide temporary housing and necessary living conditions. Since the implementation of the project, more than 100 famous teachers from all over the country have rushed to rural schools in Chengdu. These retired silver-haired teachers are known as rural education's "evergreens".

crisis and responsibility among teachers. At present, although the teacher performance salary system has been implemented, it has always insisted on "stability overriding everything". To avoid conflicts, it is impossible to open a large gap in the distribution of performance wages. As a result, some teachers feel at ease and slippery. The influence of many factors mentioned above makes the combat effectiveness of the rural teachers' team greatly reduced.

In addition to normal teaching tasks, Longxiang Primary School teachers have "additional" reception tasks. Because the school received unprecedented attention after the earthquake, the school's teachers and students have received domestic and foreign officials, politicians and scholars many times. Teachers feel more pressured at this point than other schools.

5.3 Mr. Liu's educational beliefs

5.3.1 "I really do not have certain belief" or "I need to run the school well so as to live up to people's expectations"

On the first work day after New Year's Day in 2018, the researcher met Mr. Liu at the entrance of Longxiang Primary School for the first time. Just relying on the appearance, it was hard to believe the runty, easy-going, and humorous person in front of the researcher is the principal of Longxiang Primary School. After visiting the campus with researchers, he accepted the interview in the principal's office. Mr. Liu personally made tea for researchers. After a few greetings, we seemed to understand each other a little bit more. We were more casual in speaking. After graduating from a secondary normal school in 1986, Mr. Liu was assigned as a Chinese language teacher at Huaxiang Middle School in Dujiangyan City. In 1995, he became the principal of Huaxiang Middle School and later became the principal of Huaxiang Combined Primary and Lower Secondary School. From March 19, 2007 to July 15, 2009, he served as principal of a Combined Primary and Lower Secondary School in Qingxiang. From July 15 to August 27, he was the principal of Liuxiang Primary School. From August 27, 2010 to present, he worked as the principal at Longxiang Primary School. He was born in Juxiang, Dujiangyan, where he used to practice. In his words, "it is a circle drawn on the education map of Dujiangyan." Mr. Liu is 51 years old. For the principals in Dujiangyan City, the age is average. "I have been the principal since I was in my twenties. Talking about passions, I have none. I was forced to be the principal at

the beginning." When the researcher asked him what is belief that kept himself in rural education for 32 years, he replied, "I really do not have certain belief." Does he?

Liu Gang, the teacher—"Walk into the mountains, and walk into everyone's inner world", which revealed the heart of a rural teacher.

In August 1986, he took up a job at the age of 19. At the end of the summer vacation, Huaxiang Middle School started schooling as usual. The teachers hurried to the school, attended the "get back into work meeting", planned the work in this term roughly, and began to clean the dusty school buildings and the pervasive wild grass. A runty young man with a "baby face", carrying a large schoolbag and simple belongings appeared on campus. Everyone thought that he was a transfer student. But, he took out the introduction letter and introduced himself as Liu Gang, a new teacher. At the age of 19, he went on the road of education in the mountains, and has walked on for 32 years.

Living conditions in Huaxiang were arduous back then. With but a small hydropower station in use, blackout occurred quite often, still less movies or TV; due to multiple factors, the school only gave the staff four consecutive days off every month. Consequently, colleagues who lived afar were unable to go home restricted by time, and most people lived in the school. The boundless darkness in Huaxiang turned into witness that tough period, and bestowed different experience upon them as well: in those days when electricity was cut off, they would light the candles and oil lamps as they resumed work unfinished in the daytime and got ready for the next day; they would gather in twos and threes with unhulled peanuts and pungent corn liquor. Tipsily, they talked about dreams, careers and friendship in the refreshing breeze and bright moonlight; most rare were days for reading and writing, when books became a comfort for Mr. Liu and his colleagues, as they held in their hands collections of poems of Tang Dynasty and verses of Song Dynasty, chanted lines composed by Bai Dao and Shu Ting, and reached over to Hugo and Balzac…

Considering his strength, the school made him the Chinese teacher as well as the head teacher of Class Two, Grade Seven. Out of affection towards literature and with solid teaching techniques, he fell in love with this job in no time, where he was able to make the most of his talent. At the school, colleagues could always hear a sonorous voice reading the textbook with enjoyment in authentic Mandarin. His colleagues often joked about that, "Liu Gang is expressing his emotions again." Indeed, exactly because of his wholeheartedness, the students were particularly fond of attending his classes and score of their Chinese improved fast. That impressed his colleagues with seniority and

made them sigh in awe of their junior.

He became an elder brother of the students. At that time, students in Huaxiang tended to be of older age, while he was merely two to three years older than them. A student surnamed Wang was even several months younger than him only. Therefore, in the eyes of the students, he was more an elder brother than a teacher. After class, he would hang out and play with the students by playing basketball, Ping-Pong and volleyball on the small playground. Same as the students, he also came from the rural areas and had gone through the period of poverty. Hence, he could sympathize with students in the village and was always willing to tell them about his impoverished childhood and his bumpy journey of study with openness. Unconsciously, the ordinary interactions between the teacher and the students taught the latter self-esteem, candidness and self-improvement, thus serving as a textbook for them. Many years later, when his students took their children to sign up for the school, standing in front of their former teacher Mr. Liu, they would still look at him with trust and respect. Being a good teacher in the heart of the students had always been his biggest dream. Even when he was promoted to be an executive leader of the school and had to leave his beloved Chinese classes behind, he was still closely following teaching.

Liu Gang, the cadre—Owing to the majesty of the mountain, people in the mountain straighten up their backs. Thanks to the vastness of the sea, people in the mountain long for the sea ever more. So, "stepping outside the mountain, let's go to the sea."

For the Chinese in ancient times, "officialdom is the natural outlet for good scholars." The process for Liu Gang to transform from an ordinary teacher to the principal can be summarized as "officialdom is the natural outlet for good teachers", which is commonplace in the Chinese school education. From a teacher to a mid-level cadre and eventually to principal of the school, as he moved up the rank, there seems to be certain inevitability. The plain-looking principal of a rural school is a mixture of several characteristics.

·A man of industriousness

Be a teacher or an executive leader, it is fair to say that Liu Gang is industrious. In his words, "A person can be short of anything but energy. He can regenerate energy once he runs out of it, and it will never be exhausted." Liu Gang developed a "workaholic-like" personality.

In 1993, in order to lift the school out of the dire financial situation, the Huaxiang

Middle School got into business and established a limestone factory. As Director of Teaching, Liu Gang became “legal person” of the school. Simultaneously, the city of Dujiangyan was requested to past the acceptance of the “popularization nine-year compulsory education” within the year- a mission of historic significance. During the day, he was preoccupied with management over the school and Chinese-teaching of one class, math-teaching of two and history-teaching of two. At night, he would get down to sorting files concerning the “popularization nine-year compulsory education” amounting to hundreds of thousands of characters. Long-time overloaded writing coarsened and deformed joint of the middle finger of his right hand; working deep into the night repeatedly made him succumb to pharyngitis so severe that his coughing became the signal for teachers to rest and wake up… Also in that year, the limestone factory suffered from dismal business and was debt-ridden. However, the teaching of the school stood out as a pace-setter of its peers in the mountainous areas, and successfully passed acceptance of the “popularization nine-year compulsory education”.

Industriousness inspired enormous power in Liu Gang. His workstyle of “experiencing and getting to know in person” influenced the management and was nurtured across the school quietly. In the summer break of 2005, the Huaxiang Combined Primary and Lower Secondary School started with the development of standardization, while Liu Gang smelled spring of education in the place with keen awareness and therefore led the management to work even harder. In six months and more, he forgot about the summer break, Sundays and the Golden Week. Holidays and festivals seemed to have been eliminated from his dictionary. Later on, as the previous dilapidated Huaxiang Combined Primary and Lower Secondary School took on a new look, all sectors of society were surprised and praised the fundamental changes to the school. Mr. Liu said he “had a strong sense of accomplishment. As long as the school moves forward, any pain or tiredness would worth it.”

Such workstyle is kept up till now, as if he never knows what tiredness is. As Teacher R from the Longxiang Primary School recalls, on July 8, 2013, Longxiang was hit by a massive rainstorm, taking a toll on over 100 residential buildings. He rushed to the school to help relocated people affected upon reception of the task and did not stop until midnight. Since he became Principal of the Longxiang Primary School, he never had days off during the summer breaks. Between 2010 and 2014, he was busy with the summer camps; from 2015 to 2017, he was engaged in renovation. He always did it by himself and took command at the scene. According to Teacher Z, he led the faculty and

the students in cleaning and climbed up the ladder to wipe the windows just to save money. Teacher Q said, he often got up at 4:00 or 5:00 am to prepare for lessons and courseware. Teacher S said, to lose weight, he run alone for 30 circles on the playground every morning.

• **A man with management ability**

In his 23 years of school management experience, Liu Gang developed unique management approaches. He said: "The essence of management lies in humans—the school is teacher-oriented, while the teacher is student-oriented." He cared about life of each and every one of the teachers at the school. Whenever the teachers were vexed about something, he would talk with them as a friend and do his utmost to address the problem; even when the female teachers gave birth to their children, he would visit them at the hospital immediately to send his greetings; some young teachers could not go home for the Dragon Boat Festivals and the Mid-autumn Festivals because they lived at the school, which was too far away from their homes. In such cases, Mr. Liu would stay at the school as well, and take them out for dinner at a restaurant on his treat. By inviting the younger ones to drink, he meant to ease their homesickness. For years, he himself did not even know how many holidays he had spent with those young people.

He pays close attention to how the teachers are doing. It will be specifically mentioned later. Most of the newly recruited teachers have bachelor's degrees. Long before, he started to emphasize higher education and he himself was a paradigm. Although a graduate of a secondary normal school, he was learning by himself in spare time constantly and received his associate as well as bachelor's degree after passing the Self-Taught Higher Education Examinations[23] for Chinese Language and Literature in 1989 and 2005 respectively. Spearheaded by him, education of the other teachers at the school elevated in general.

In day-to-day work, he stressed the three principles of "industriousness", "persistence" and "honesty" and took a lead to encourage the faculty as well as the students. According to his explanation, "industriousness calls for willingness to do things. Even as there are boundaries between duties, their nature is intertwined. Everyone, including the faculty and the students, is an administrator of the school; persistence means unyielding efforts. 'A stead of inferiority is able to reach the destination by walking for ten days on end, and its success rests with unremitting

[23] Self-taught higher education examinations，a national higher education examination for self-taught people, primarily to get a degree. Usually it is difficult to pass the exam. It is regarded by the people as a degree second only to full-time undergraduate universities.

endeavors'; honesty refers to walking the walk instead of talking the talk. It is the result that matters." He succinctly put such an idea into a working mode of "Eight As", i.e. going for a walk everywhere, taking a look at every class, having a talk with the faculty, starting a conversation about the concerns of the faculty and the students, delivering a lecture regarding behaviors of the faculty and the students, providing an instruction on wrongdoings, and giving it a second thought always. For quite a long time, he would arrive at the school ahead of time, and the first thing he did upon arrival was show himself around the campus to check on hygienic conditions of the school, student activities, campus facilities, etc. After that, when he returned to the office, work plan for the day was already in his mind. Checking on the classrooms and the teachers' offices were more common for him. Should there be irregularities in the classrooms, he would point them out genially in private and propose measures for improvement; if objects in the offices were in a mess, he would show the teachers how to organize and help them do it; when was paper scrap on the ground, he would pick it up once he saw it and discard it in the trashcan; when the tap was left open, he would close it naturally. Under his guidance, the faculty and the students started to mind their words and deeds with self-consciousness. That silently changed the atmosphere of the school.

- **A man who is constantly learning**

Mr. Liu is a man of bookishness. To him, study is pleasant and should be proud of. He has always been proud of the aforementioned Self-Taught Higher Education Examinations. He said: "Those exams are strict and it is never easy to pass. However, you can truly learn something in preparation for them, thus enlarging your 'RAM'."

He is rapt in learning teaching theories and school management theories. From his perspective, being provided with an opportunity to study and training is the best treatment the teachers can get. Every time he comes back from the training, he puts into practice the advanced teaching and management concepts he has learnt. The teachers usually gasp in admiration privately after hearing him talk, "the old man has progressed again!" The teachers also learn from him hence. What is noteworthy is he often recommends articles and songs to the teachers. During the research at the Longxiang Primary School, Mr. Liu recommended a song called "None is Easy" to the researcher. He said, "The teachers are not easy, the parents are not easy, the students are not easy, the leaders are not easy and I am not easy." Reading more and reading good books is his requirement for the teachers. He strives to create a kind of atmosphere. As he put it, "the school should smell like books, the teachers should look like scholars, while the

students should act like educated people."

• **A man of innovative mind**

Management practice and down-to-earth study of theories over a long run gave him a mindset of keenness, open-mindedness and changeability. As above said, in 2005, as the "integrated development of the urban and rural areas" was launched in Huaxiang and development of standardization at the schools was started, he guided the faculty and the students in the development for standardization of the school with great passion and going-all-out spirit. The school was getting better every day. After it was accomplished, he was not satisfied or relaxed at all. He said standardization only improved the "hard" environment at the school. If the "soft" environment of school management fails to be enhanced, then standardization is only superficial. "A standardized school deserves a type of culture that matches it." Combined with reality of the school, he led the faculty and the students in an endeavor toward the nurturing of school culture themed as "the Stone Culture" to make the school thrive with characteristic steps. He made it clear that education practitioners in Huaxiang should by no means present themselves as watchers of rural education. They should aim higher, and schools in Huaxiang should be the model of their counterparts in the Chinese mountainous areas.

At the Longxiang Primary School, he put forth the concept of "green education". He defined it as education that lays the foundation for a healthy life of the students, and facilitates independent, harmonious as well as sustainable development of the students. Based on the reality of the school, the Longxiang Primary School is trying to build itself into a school featuring "scholarly campus".

Friend, Liu Gang—"Without grandiose promises, there is only eternal sincerity." How can a school forge cohesiveness? Apart from justice and equity, we need sincerity of the friends more eagerly.

After work, Mr. Liu is an ordinary person. His cheerful and lively character wins him popularity among the teachers so much so that they all address him as "Brother Gang"; in his time off, he likes to chat with people and is pretty humorous; he is fond of playing the game of go, and plays quite well among the friends; when he is in good mood, he often invites some friends for a drink.

He enjoys the hustle and bustle of life. Whenever a colleague holds a wedding, he would be there and express his congratulations. He is usually asked to give congratulatory remarks on behalf of the school. Having done it for a couple of times, he already knows the text by heart and can recite with proficiency. As a result, people dub

him as “the professional speaker”.

He likes to offer a hand and is of chivalric spirit. If the teachers run into problems, he would take it on without hesitation and do all he can to fix it. Once several teachers encountered difficulties in selecting schools for their children, and the thousands of extra-paid fee for going to schools in the city was quite a burden. Hearing about that, Mr. Liu contacted many friends and leaders for help. He put in a good word for the teachers and conveyed their pain, finally addressing it successfully.

For Mr. Liu, being a good friend of the teachers, a man of integrity and passion, and a good leader is equally important. Therefore, among the colleagues, he is a cordial friend, and also a resourceful and capable leader.

At last, he said to researchers calmly, “for years, whether I was willing or forced to be the principal, I have accumulated some experiences and had some thoughts. I need to run the school well so as to live up to people’s expectations.”

5.3.2 School planning: “After all schools are the places for study, where must have a scholarly atmosphere.”

Considering the actual situation of the school, Mr. Liu proposed the goal of school development when he took over the Longxiang Primary School: committed to creating a school of “scholarly campus”. He said: “After all, schools are the places for study, where must have a scholarly atmosphere. For a school, people say that this is like a place to study. That’s right. This is the biggest award. The atmosphere is reflected in the school environment and the behaviors of the people in the school. The scholarly people should be different from the businessman outside and different from the farmer.” When it comes to knowledge and fate, Mr. Liu firmly believes: “Studying changes your destiny.” In 1982, Mr. Liu had poor academic performance when graduated from lower secondary school. His mother was very anxious that he was too little to take on the heavy farm work. Reluctantly, he chose to go back to school. After “painfully” studied for nine months, he was admitted to a secondary normal school. “I went to relocate my residence registration[24]. My physics teacher said why you are relocating your registration. I said I was admitted to the school. He did not believe it. At that time, I did not have any ideal, I just wanted to get of the countryside. Because you do not need to pay for living expenses, if you go to the secondary normal school, then it will be paid by

[24] When he was admitted to a secondary normal school in 1983, he could turn from a rural household registration to an urban household registration.

the national government." Mr. Liu continues to say, "It was really studying that changed my destiny. If I did not concentrate on learning for a few months, I would definitely be a member of the lowest-income group, with such a height, so all that I have now comes from studying." He also said that the teacher is really important during the child's growth. "A good teacher really changes the fate of a person and the fate of a family." Because studying has changed his own destiny, Mr. Liu also hopes that he and other teachers can help rural children change their destiny.

5.3.3 School culture: "Be nice to poor students. They just are not good at exams."

In addition to the implementation of the explicit culture in line with the concept of "green education", some cultures are more subtle and affect teachers and students in schools more profoundly. Mr. Liu said that a good school should really pay attention to the healthy growth of students. Schools must respect, love, believe and develop every student. Longxiang Primary School proposes starting from healthy body, healthy mind, healthy habits, healthy relations, healthy classrooms, health activities, and healthy environment, etc. to cultivate students' sturdy physique and optimistic, progressive mental state, so that students have an open mind, and can see the objective reality of things, have self-control ability, like to help others, be kind to people, have good study habits and living habits, and develop healthy aesthetic tastes and lifestyles. The fundamental goal is the healthy growth of every student. Longxiang Primary School is a weak school, and the teaching quality is poor. There are more students with poor academic performance in school. Whenever a teacher complains about a poor student, Mr. Liu always uses his own example to persuade the teacher to "be nice to the poor students. They just are not good at exams." He is able to experience the feelings of poor students because he said that he used to be a distracted poor student before he studied hard. "Successful people in society today are, from the point of view of making money, people with poor academic performance. For example, the CEO who invited students to engage in activities last month, with such a successful business, used to be a poor student as well." When some students said that he did not perform well in the past, he said, "You just are not good at exams. If you have good social relationships, and a happy family, then you are successful."

Mr. Liu has such a new comment on "bad students": "I am not very into the so-called good students, because they do not quite remember their teachers. Those who

truly be thankful to you are those with poor academic performance. I think these people have high emotional intelligence. When they could not do the exams, how much they suffer? When they did not understand in class, they were still sitting straight, and be like that for more than a decade, for such a student, how good his psychological quality is! When they have any difficulties, they will say that it's easier than studying, so they insisted and became successful."

When it comes to student development, Mr. Liu seems to have endless words to say. He explained to me the development of the core qualities of Chinese students[25] and believed that the most important core quality means the overall development of a person. He particularly talked about democratic thinking. He said that democracy is an opposition to tyranny and dictatorship. It is actually a way to solve problems.

"What does our basic education do? If a person has not approached democracy and has not done any democratic things at the stage of receiving education, when they are old, can they adopt this method to do things? No. Because they did not do it before, they could not think of it, needless to say how to do it. While teaching, we put students in groups. When a problem comes, students have to discuss it. After the discussion, they have to report it. Each group sends a speaker to express their views and explain the reasons. The other groups, whether they agree or disagree, must also explain the reasons, or put forward other views and explain the reasons. I think this is right. This is democracy. The process is actually a collision of thoughts."

In Longxiang Primary School, scholarships are distributed in a democratic manner. The school started some love assistance after the earthquake and set up scholarships for that, which is rare in other schools. For students who graduated in the past, scholarship awards are based on their test scores. For pupils, it is not allowed to publish students' scores, and even the principal does not know everyone's scores. Therefore, the qualification of reward for primary school graduates is decided in a democratic way.

"For example, if a class has 30 students, the school will award three scholarships. The head teacher will register students who are willing to participate in the scholarship selection. Assuming they are all willing to participate, the maximum number is 30. With four teachers and 30 students, there are 34 votes. By the first round of voting, six candidates will be selected out. They need to be prepared for a public speech at the appointed time, talking about why they want to get this scholarship and what are their advantages. The classmates and teachers will decide the three winners of the scholarship

[25] It refers to the necessary qualities and key abilities that students should have to adapt to lifelong development and social development.

in this second round of voting. Our scholarships are all decided in this democratic way. The results are that the students with the highest scores will not necessarily become winners. Interpersonal relationships and improvisational performance are also important factors. Imagine when these children enter into society and encounter difficult problems, they will think about voting for the solution."

5.3.4 Curriculum and teaching: "How to learn is more important than how to teach."

Speaking of curriculum and teaching, Mr. Liu, who is a teacher of Chinese language, has many to say. "Teaching Chinese in high schools is easier than in primary schools because high schools have the only one goal—National College Entrance Examination. How they design exams is how we teach students. For primary schools, we propose three teaching objectives: first, "double basic", basic knowledge and basic skills; second, process and method; third, emotions, attitudes and values. However, the key to the problem is how to test these things? How to test the process and method? How to test the emotions and attitudes? It is easy to test basic knowledge, but how to test the basic skills?" Mr. Liu is strongly against the way that use test scores to evaluate the quality of a primary school.

"How to learn is more important than how to teach", Mr. Liu agrees with this very much. "Does a teacher completely understand a topic? If the teacher understands 90%, then 90% of it can be taught to the students, and the last 10% will not be able to be taught. In the 90% that is taught, have all the students listened? Assuming that 90% of the students are listening to the teacher, then only 81% is learnt. Again, after listening, do the students understand? Is the teaching clear? Let's give it a 10% discount, then only 72 % is learnt, and the decrease goes on like this. This is the result of the teacher's teaching. If the student is learning actively, trying to figure out all that he wants to know, it will be 100%."

5.3.5 Teacher development: "In a school, teacher is the most important."

Speaking of rural education, Mr. Liu said without hesitation: "The most troublesome thing about rural education is people." During the entire survey period, I counted that what he said most was the lack of people. "The principal's plan for the school, regardless of the principal's ability and thought, needs to be implemented by

someone. Who says that a good principal is a good school? The principal cannot do anything by himself." In the previous content, several issues in the teaching staffs of Longxiang Primary School are as follows: irrational flow, insufficient number of teachers and unreasonable professional structure, the aging of teachers' structure, and low quality of teachers.

He mentioned two examples in particular. "Because there are no human resources, scientific research cannot be conducted. My research project, funded by Chengdu city, cannot be finished. Now it is finally finished, and I did it myself. Actually, my initial idea was to let teachers do it, but it is difficult. No one wants to do it."

"We cannot keep people in these schools." Mr. Liu talked about a good teacher a few years ago who left for another school later on. In order to retain her, Mr. Liu gave her all the honors and rewards he could give. "Of course, she deserved those." But, she left eventually. Talking about this teacher, Mr. Liu is regret and helplessness.

"In a school, teacher is the most important." The people-centered philosophy is prominent in his idea of management. "One can never be supercilious" is his pet phrase. He pays close attention to how the teachers are doing. In his view, a team of high-caliber teachers is key to the development of the school. He fervently supports teachers to participate in the training activities at all levels, and takes care of their transportation. That is admirable to teachers of other schools. Mr. Liu attaches great importance to the nine young teachers who entered the school in the past two years. Teacher P said: "Last year all of us were sent to YL Primary School and this year a few teachers were sent out to learn for a week. The expenses incurred are all borne by the school. This expenditure is quite large. Our school funding is already small, and he is very willing to spend money on teacher training." Besides, he tries every means to invite the experts and renowned teachers for guidance at the school in a bid to improve teaching by broadening horizons of the teachers. When the school holds teaching and research activities, be it listening to classes, reciting classes or evaluating classes, he would attend the scene in person and voice his opinion of textbook analyses, target setting, teaching tactics, class sessions and teaching effects.

5.3.6 Internal management: "First set the rules of the game and everyone will follow the rules."

Mr. Liu gave the researcher a thick book to see a compilation of the various rules and regulations in Longxiang Primary School. In September 2015, the school compiled

a 300-page *School Development Handbook*. It includes 258 specific rules in 12 major parts, such as general principles, administrative management, teaching management, moral education management, trade unions, teacher congress, public administration affairs, mental health, hygiene, rural children's palace, moral forum, safety, residence student management, financial management, canteen management, function room management, etc. In addition, the school also has procedural materials such as teacher's work manual, student's growth footprint, and their content is also quite rich. For example, each teacher has a work manual. The content includes: analysis of countermeasures for class teaching at the end of the term, teaching work plan, unit teaching summary, student achievement, staged teaching quality analysis, tutoring summary, teaching reflection, teaching research activities, teaching competition, teaching observation, learning records, research lessons, open class summary, end-of-term review plan, summaries of teaching work, general assessments of the semester, etc. Mr. Liu said that he had time to accept my interview because "first set the rules of the game and everyone will follow the rules."

During the interview, Mr. Liu took over a salary payment form handed by the office staff. He signed without asking any questions. "I'm a man who allocates money, not the one who pays. The teachers have been working for a month. I have to pay. The rule has to take care of everything. The first is stability. Stability means that teachers, students, parents, and society must all be stable. Without stability, everything is over. So we want to set the rules of the game well so that we do not get complaints." On the one hand, the researcher was surprised that Mr. Liu's school management was so meticulous. It is rare for a weak rural school to be able to do so. On the other hand, the researcher cannot help but ask why Mr. Liu, who was able to make the achievement of Huaxiang, has not taken off the hat of the weak school of Longxiang Primary School in eight years. Is it really as what he said "If you want to be a good principal, go to a good school, and if you want to be a poor principal, go to a weak school"?

5.3.7 External environment: "must see the world"

Mr. Liu is very active in conducting external cooperation and exchanges. He also pays great attention to establishing a good school image and winning public understanding, trust, support, and cooperation. He completely supports teachers and students to go outside the school for communication and learning, and also actively promotes various forces from the outside to bring new ideas to the school. "Both the principal and the teacher must see the world. If you do not broaden your horizons, you

do not know what the outside world is like… Every year in the past, I would invite the teachers to go to the good restaurants in Dujiangyan for the New Year's feast. I would order several tables, 1,000 yuan each table at least. On the one hand, I want to express my respect for them; on the other hand, it is actually bringing them to see the world. But now this is not allowed[26]."

For students, Mr. Liu hopes that they will be less of timidity and more generous. Therefore, he is generally supportive for taking students out to participate in activities or inviting institutions coming in school for communication. He believes that this will help the children in the mountains to see the large world outside and it is conducive to their growth.

Of course, sometimes, he is unwilling to communicate with others. Mr. Liu spoke about one thing that happened in 2010: "In 2010, I had just arrived at Longxiang Primary School. The principal of Paulownia Primary School[27] took his team to help me with a diagnosis of my school. At that time, he reached out his hand for a handshake, but I did not reach out... Even if I reached out, they could not pull me up because the gap is so huge. What can I learn from what they can do? I can learn some of his ideas at most. But only ideas are not enough. I have no soil. I cannot learn anything from them, the measures, the teachers, and anything else. To tell the truth, the gap is too huge."

5.3.8 Regional differences: "Is this all your credit?" & "Does that mean I am inferior to principals of the larger schools who are my juniors and are less capable than me?"

About the differences between regions, Mr. Liu spoke a lot about teachers, parents, resource allocation, and principals.

"Last year, a teacher was transferred to another school. After one semester, she was proud to say that every student in her class achieved more than 95 points in the exam. I told him whether it was all your credit. How long have you been teaching this class? When you were in Longxiang Primary School, why were there always some students in your class who failed to pass the exams? Did you not teach seriously in Longxiang? To be honest, the teacher is very good and hardworking, but I cannot keep her in my school." Although the teachers now can earn around 1120 yuan more than the urban

[26] The Chinese government engages in the construction of a clean government, and all civil servants and public institutions personnel are prohibited from eating and drinking cost by public funds.
[27] It is one of the top primary schools in Chengdu City and even in Sichuan Province.

area, rural schools still cannot keep the young, outstanding teachers. In addition to the reputation of urban schools, there are more opportunities for personal development, and teachers in urban schools have the chance to have paid make-up classes. Furthermore, the urban community has abundant resources and brings convenience to children's schooling and family's healthcare. There are also parents in the urban schools who give gifts to teachers or invite them for parties and dinners. But, there are no such things in rural areas. Therefore, most of the outstanding teachers have left, and the rest of them are not as competent as those who left. One of the major reasons is that they do not work hard. From the beginning, they do not want to do it, then they cannot do it well, finally they cannot do it at all.

Besides teachers, the family is also very important. Now, there are 197 students who live in the school. Mr. Liu said, "Some of them live too far away and they have to go through several mountains to go to school; some are rural left-behind children who are not cared for at home; and there are a considerable number of parents who want to send their children to live on campus so that they can play mahjong." This is very different from the urban parents that accompanied children studying. "It is impractical to educate students just by the school. No matter how much teachers and principals love students, parents cannot be missing. So the gap is huge."

"There is certainly a gap between education funds and investment." He explained it. The Longxiang Primary School is small, with fewer than 500 people. The government allocates 900 yuan to every student, and in total 398,700 yuan for all the 443 students; for the part short of 500 or 800 students, allowances for each are 300 yuan or 100 yuan (per the higher standards), so in total 35,700 yuan； the school has three disabled students, and allocation for them is 5000 yuan per person, altogether 15,000 yuan; 150 yuan per person for 197 students living at the school and in total 29,550 yuan; in all, the aggregate funds for the school are 478,950 yuan per year. Those are the annual funds for 443 students and 38 faculty. 2017 was special, because the government gave the weak schools 30,000 yuan more. Therefore, the school had close to 500,000 yuan that year. With that money, the school hired three guards, accounting for about 25% of the cost; two cleaners and two dorm administrators, representing around 15% of the cost; utilities cost roughly 15% as well. The expendable funds of the school for the year were 215,000 yuan or so.

The allocation of education funds is mainly based on the number of students. However, necessary expenditures for school operations are not reduced by the small

number of students. Therefore, it is very unfavorable for small-scale schools. “Now treatment for the teachers is better and our school owns over 20 cars. At the beginning, we had too many parking spaces to fill in. But now, they are not enough. So we built a parking lot behind the school, but where did the money come from? The school could have hung more than 40 couplets， yet it only has a dozen now. Each of them costs hundreds of yuan. Where are we supposed to get the money? If the chopsticks are broken, we could use some money from living cost for the students before. But now, we have to spend it from the expendable funds. Of course it is not too much. On top of that, we also need to use the expendable funds to buy the mat for the restaurant. Frankly speaking, things as such give me a headache. As you saw just now, our computers need to be replaced, and it takes minutes to start mine up; the floor on the corridor already peeled off, simply because I do not have the money. The offices are not equipped with air conditioners, because electricity cost is way too high. In such cold weather, the teachers do not turn on the heaters, also because electricity is costly. Simply allocating funds without taking into consideration the reality is actually sloppy governance.”

“I used to tell the deputy director in charge of us that who will you be able to transfer to Longxiang? Who is willing to stay? I am standing guard for your frontiers[28]. Does that mean I am inferior to principals of the larger schools who are my juniors and are less capable than me? However good I am, while the others can reach Level Five, I can do Level Seven[29] at best just because my school is small. Why do they always attempt to use the scale as an excuse? Apparently, that is discriminatory policy. Under such circumstances, how can the teachers rest assured and work conscientiously? If they are not conscientious, we cannot admit more students, and that means less money. With fewer students and teachers, the school has to be small, and our hands are tied. But as a principal, I do not just do thing whenever there is money. I rack my brains to get things done. One constraint for principals in the rural areas is the position and environment. They are in lead to smaller platform, fewer opportunities to learn and insufficient experience. That results in the unbridgeable gap.”

5.4 Factors that influence educational beliefs

5.4.1 Family: “A man should be self-reliant.”

Mr. Liu’s wife is also a teacher at a primary school in the city. Their daughter has

[28] Longxiang sits at the cross border of Dujiangyan and some other city (county).
[29] It is a grade of the professional titles for the Chinese teachers.

graduated from colleague and started working. Mr. Liu's father died young. As the youngest of all the three brothers, Mr. Liu was well cared for by his mother. Speaking of his mother, Mr. Liu seemed to be serious, which was rare as he tended to be communicative. In his description, mother was a rural woman who was diligent, simple, kind, and resilient. When he was in the secondary normal school, he used to bring home two mooncakes distributed by the school and give them to his mother. Over a long period of time, mother would praise him for it whenever she talked with others and was insuppressibly excited. That is still unforgettable to him. A widowed mother raising three sons, be it decades ago or in today's China, it is amazing. But mother never complained, but took it in silence. At the outset of 1984, with suffering and grievance, mother passed away, while Mr. Liu was less than 17 years old. That afflicted him, because he "had nowhere to go on festivals and holidays any more". He lived with his elder brother and sister-in-law until he was 20, and got married young. Perhaps he got his tenacity from his mother. Once a poor student who got a score of 160 for six subjects, he successfully entered a normal school and embarked on the path of education after nine months of "painful" study. Being small and short, he failed for all the three directions of lay-up when he just began to attend PE classes. Then he practiced so hard that no one was able to run faster than him; as it was changed to two lay-ups within one minutes later on, with the minimum passing score being six, he was able to do 13 at most, meaning running for six to seven rounds on the basketball court in a minute; he topped the school in medium to long-distance race, and even became commissary in charge of sports in his class. When the Longxiang Primary School received a lot of support and care after the earthquake, Mr. Liu said, "However much care you get from others, they come from the outside. A man should first be self-reliant." Precisely with such stamina, he clung on to it in the rural areas for 32 years.

5.4.2 Important people: "People like Professor Z are so touching."

As for those who have influenced him most in the past years, he mentioned Professor Z in particular. Professor Z is an American Chinese, tenure at an American University. In the Chinese universities, people seldom address others as professors, and Teacher XX is used instead. But in Longxiang, government officials and farmers by the road would say hello to him with enthusiasm, calling him "Professor Z", let alone faculty and students at the school who address this person familiar and strange to them as "Professor Z" affectionately. The Cantonese who went to the United States from Shantou, Guangdong 30 years ago, a mathematics professor who got his PhD at the

University of Pittsburgh，started to devote his life here from 2008 and hopes that his ashes can be buried under a tree in Longxiang.

At present, he is the Honorary Principal of the Longxiang Primary School. Driven by his advocacy, a foundation for quake-relief efforts in Sichuan was set up in the United States. He initiated an activity to let kids in eight cities in both China and America accomplished artworks with ceramic tiles in accordance with unified standards. At length, 3,000 and more ready products were sent to Longxiang, where 882 pieces were selected to create an art wall. The wall is an epitome of love from across the globe. From the production of adobe, painting, transportation to coordination of installation at the site, Professor Z did it all by himself. To make it happen, in a short span of a year, Professor Z and his friend, the Chengdu liaison for the above mentioned foundation and a national first-class registered architect Ms. L exchanged via up to thousands of emails and numerous transoceanic phone calls. They donated a set of Orff percussion instruments to conduct Orff music therapy and music teaching. Since no one was able to use them, Professor Z invited a reputable music professor from the United States to train the local music teachers at the Longxiang Primary School during his break. During the summer breaks for years on end, they guided the American volunteer teachers and kids to hold English summer camps for children in Longxiang. In addition, the foundation donated books, projectors and other devices to the school. In June, 2011, Professor Z launched the “Blue Grass Prize for Outstanding Students” at the school to provide scholarships for those students and encourage them to chase dreams, work hard and grow up to be talents. Now, Professor Z goes back to the school every year.

“People like Professor Z are so touching. They have been closely watching Longxiong after the earthquake. I said to him that you might have deeper love for Longxiang than I do. He has high hopes on the Longxiang Primary School.” Just like Professor Z, Academician X and her team set up the Earth Scholarship to push kids in Longxiang forward. As per partial statistics, “In recent years, there have been at least four top-scorers from Longxiang for the NCEE in Dujiangyan.” Therefore, to Mr. Liu, Professor Z, Academician X and the like brought to Longxiang more than supplies. They brought here universal love and the power of persistence.

Moreover, Mr. Liu mentioned the teachers who have been contributing at the school quietly for years, who sacrificed their lives in the earthquake, and who donated stones at their own collection for cultural development of the Huaxiang Middle School. “Honestly, when I participated in the examination to enter the normal school and

became principal of a primary school, I only meant to make a living, nothing lofty and noble. Now I do have some so-called sentiment for education. Those people influenced me."

5.4.3 Relations between family and school: "Stupid! Fell while you were still on campus if you had to!"

Society and family play equally significant roles in school education. The latter calls for support from education by the former; while without support from the former, the latter can hardly succeed. Nonetheless, the relations between family and school at the Longxiang Primary School seem not to be ideal.

The researcher overheard a story from Teacher C at the pretty gate of the school: after school in the afternoon, a kid fell not far from the gate. Instead of showing his concern, the parent rushed to the school in anger and slapped his kid in the face in front of the teachers and yelled loud, "Stupid! Fell while you were still on campus if you had to!"

Longxiang is located in the mountainous area. Students whose homes are the farthest are more than 15 km away from the school, hence the need for living at the school. However, the dorm cannot satisfy demands of all students. Among all the 38 faculty, only one lives in Longxiang. The school has no separate faculty dorm, and has to leave one bed for teachers who are unable to return home after classes at night. Judging from that, the dorm can accommodate 200 students at most. But many parents are willing to let their kids live here. Mr. Liu told a story:

Once, a parent kicked up a row at the school, requesting his kid to stay at the school. The teachers explained that the school already had a full house for the semester and he could apply beforehand next semester. After that, the school would make arrangements by prioritizing the distances of student homes. The parent would not comply, saying his home was not far from the school. The drama lasted for a long time, with the parent citing the reason that no one was able to take care of the kid at home and the kid had to live at the school. Yet to the knowledge of the teachers, their home was not far from the school, and the parents were not migrant workers. Their purpose was to put the kid at the school by quarreling so that they could play mahjong merrily every day.

5.4.4 Learn from the other schools: "A latecomer in teaching, we have to compete in other fields."

Mr. Liu told an unbelievable story: there is a Primary School even smaller than the Longxiang Primary School with merely 77 students. “Yet their boys’ volleyball managed to top Dujiang, the city of Chengdu, and even Sichuan Province. They have only six members, not even a substitute, yet they could be No.1 in Sichuan. On one hand, I think that school is truly admirable. On the other, it shows that the large quality schools do not pay enough attention to this. They could select six people out of 77 to claim the title, then what about a school with 700 students? With 1700 students? What will happen if they do pay attention?”

Clearly, Mr. Liu was inspired by this school. “To be straightforward, inferior teaching quality at the Longxiang Primary School is nothing new. We propose quality education because we have to. That counts as speculation. A latecomer in teaching, we have to compete in other fields.” When he said that, the researcher could relate to his helplessness.

5.4.5 Backward regional culture: “They did not even agree on this, then I had to give it up.”

In Mr. Liu’s words, Longxiang is an “old, few, remote and poor” place. Old means the school has persistent problems; few refers to the small population here, with about 10,000 registered but actually fewer. There was a famous factory and mine, which went bankrupt in 1998. Consequently, many people’s household registration is here; remote indicates its position, situated at the cross border of Dujiangyan and some other city(county); poor points to its laggard economy. Corresponding to its underdeveloped economy, cultural level of the residents here is not high. Besides having a simplistic hope that their kids can learn well, they do not have the same awareness or take any concrete action.

Research shows that many principals would like to reduce outdoor student activities in avoidance of accidents. Differentiated from them, Mr. Liu proactively seeks opportunities for the kids to widen their horizons. Once he contacted the Sichuan Museum in downtown Chengdu, the Jinsha Site Museum and the Sichuan Science and Technology Museum and was able to take the kids there. A supervisor even said his museum would provide lunch for free for the kids. Out of responsibilities for safety and the requirement for transportation fee at the cost of the parents, the school sent them letters to solicit their opinions. Mr. Liu said out of safety concern, if over 10% of parents disagreed, then it had to be called off. Presumptively a good thing for the kids,

most of the parents voiced their disagreement. “They did not even agree on this, I had to give it up.” The activity was canceled, and it could be told that Mr. Liu found it regretful.

He also mentioned things that made him angry. The backward regional culture is something beyond him: a parent tipped the school off via the mayor’s hotline, simply because the uniform of his kid was oversized. Another parent denounced that his kid did not get allowances for children with economic difficulties. After an investigation, the school found such a student did not even exist, and had no idea where this so-called parent came from. Although the school did not do anything wrong, Mr. Liu had to send a written reply in compliance with administrative regulations. Gate of the school is at a slope and curve of a critical road, and it would be crowded at rush hours. Considering safety, it was requested the parents not the park in front of the gate. A parent refused to follow the instruction of the teacher on duty and the guard, parked the car in front of the gate forcibly and had a fierce conflict with the teacher as well as the guard.

5.4.6 Memorize the disaster: “Happiness at the expense of lost lives is hard won.”

Longxiang, Dujiangyan, the city of Chengdu, Sichuan Province, a small town bordering on a megacity , a township in close proximity to a small city, and a village in the mountain. Longxiang sits at the transitioning area between high mountains and plains. In its territory, there are primarily high mountains and hills, and the place is only 18 km away from the epicenter of the 2008 earthquake that jolted Sichuan. In that year, apart from collapsed buildings, over 300 students and 16 teachers lost their lives. After the earthquake, the school received unprecedented attention and aid from all sectors of society. The campus were rebuilt and were brand new. The spirit of post-quake reconstruction will be commemorated, cherished, studied and continued. “Happiness at the expense of lost lives is hard won.” But what they hope for more is “the reconstructed Longxiang can be talked about and known well by people on account of its quality education and good teaching quality, not because it was severely affected by the disaster.”

5.5 Result of school operation

5.5.1 School culture construction: “the initial emergence of scholarly

campus”

At the Longxiang Primary School, from the gate to the teaching building, there are a dozen of wooden couplets. Integrated with the school culture, they serve to manifest collectively motto of the school: looking into the future, aiming for the best. The teaching style: peaches and plums do not talk, eye destinations that are farther with quietness. Workstyle: be a man of integrity and do things with tangible actions. Moral education of the school has delivered initial outcomes. Exercise at the interval of classes is carried out with “order”. The sound of reading the *300 Must-Recite Poems Longxiang Primary School* wafts across the campus. Artistic education is conducted through collage art, painting of masks used in Sichuan opera, ceramic art, etc. In a nutshell, the effect of running a school featuring “scholarly campus” has basically taken shape.

5.5.2 Changes of the students: “At least they are more brave.”

Walking on the campus of the Longxiang Primary School, the researcher saw every child say hello to people in an unrestrained manner. For that, Teacher R said, “Although scores of the students are not high, starting from 2010, their changes have been substantial. In the past, if the student ran into the teachers, they would just ignore, but now they will say hi actively. Quality of the kids has been elevating.” Teacher L said, “Student used to fight, go to the net bars secretly and climb the walls late at night frequently, whereas now the order is much better. When the lights are out, no one dares to climb the walls and go outside. Mr. Liu upholds teaching the students how to be humans before they are taught how to study. He does not cling to teaching quality, but start with morality.” Mr. Liu said, “We should get rid of kids’ timidity. At least they are more brave now.” The exercise at the interval of classes of Longxiang Primary School is of rich content and orderly. Teacher S said, “Our exercises are truly distinctive as they are more lively and vigorous.” Mr. Liu said, “This does not happen overnight and we trained them for more than a year. The book says someone walks the snail, and we need to take time to walk the children step by step. We should by no means think about getting in a relationship today and giving birth to our kids tomorrow.” He is always so humorous.

5.5.3 Changes of the teachers: “We also feel motivated.”

In the old days, teachers at the Longxiang Primary School tended to be old and inactive at work. Teacher Y said, “Previously, if you did not have classes, you could slip away. But you have to stay. From 8:00 am to 4:20 pm, the teachers are not allowed

to leave until all the students have left safe and sound. That has been a habit for us." Today, Mr. Liu is working actively to build a platform for the young teachers. He supports them to participate in training and teaching competitions, takes care of their transportation in the process, and invites them to dinner with out-of-pocket money. For teachers who are going to be transferred, he does not force them to stay. Teacher C said, "Everyone gets along well here. The environment here is favorable and our Principal attaches great importance to us. Hence, we also feel motivated." Teacher W said, "Mr. Liu is a man of diverse ideas and is easygoing, especially to me because of my special conditions. Therefore, after I recovered and came back, I was ever more passionate about my work. I feel I should not fail him." Teacher Z said, "Seeing him do everything and attend classes in person, understanding how motivated he is, it gives me more motivation as well."

5.5.4 Feedback of the parents: "We feel rest assured to let our children stay at this school."

Even though some parents refused to accept interview, based on the view of those who took it, it can be told that they are satisfied with the school in general. In the words of some parents, "We are satisfied with the school. Or else we would not send our kids here". "I do not know much about the Principal, but the teachers are highly responsible. If there is something wrong with their homework, they will text the parents". "My kid likes to go to school and is fairly happy when he returns home every day." Some parents have complaints about the crowdedness at the gate and food at the canteen. However, crowdedness outside the campus should be resolved by the local government, and people have different standards for food. In the opinion of the researcher, taken the price into account, the quality is acceptable.

5.6 Conclusions of micro-case study

5.6.1 Educational beliefs do not necessarily lead to changes in practice, which are also constrained by other factors

It can be seen from the case study of Mr. Liu that, as a senior principal who has taken root in Chinese rural education for 32 years, his beliefs showed two different results in the two schools where he worked for a long time. The former can serve as a benchmark and exemplar for the education in mountainous areas; the latter has not

taken off the “hat” of the “weak school” and is still a “watcher of education in mountainous areas” after he served as the principal for eight years. Obviously, beliefs do not necessarily bring about changes in practice, but changes in practice are also affected by many factors such as policies, systems, school conditions, and so on. The principal does not “just do thing whenever there is money”, but “racks brains to get things done”. The example of change in Longxiang Primary School’s exercise at the interval of classes reveals that beliefs can lead to changes in the expectations of practice when all the other conditions are fulfilled.

5.6.2 The actual situation of the school determines the focus of the principal’s educational beliefs

According to the case of Mr. Liu, as the principal of a rural primary school, especially a small-scale, weak school, he thinks more about how to ensure the everyday operation of a school with limited resources and funds. Although his educational beliefs are comprehensive, it can be discovered in his claims and practical work that he focuses on the teacher competence and the school funding. Although the core goal is to improve the quality of education, with limited conditions for running a school, there is no way to talk about the goal and it is even concealed. When a principal is anxious about how to find a teacher to teach a regular course, to find funds to repair worn-out floors, he will not have the energy to think about education. They will become the “entrepreneurs” at best, rather than “educators”. However, schools are not enterprises. And, the difference between doing education and business is huge.

5.6.3 In the educational beliefs system, there is a belief that has not been publicly declared but has had an important impact on practice

Some beliefs are publicly announced, others are not, and still others are even unconscious. Declared beliefs are not necessarily put into practice. Undeclared and even unconscious beliefs probably have a profound effect on practice. In the case study of Mr. Liu, he has repeatedly stated that he does not value the test scores of students and does not particularly emphasize the quality of teaching. However, he is willing to cost an arm and a leg to develop the competence of young teachers in literature and mathematics, pays special attention to the fact that “there have been at least four top-scorers from Longxiang for the NCEE in Dujiangyan”, believes that schools must engage in quality education is “have to” and “a latecomer in teaching have to compete

in other fields", and talks about "inferior teaching quality at the Longxiang Primary School is nothing new". From his helpless comments, it is not hard to find the idea that "score is of top priority". It is a belief that he has not publicly declared but it has an important influence on schooling practice. This kind of beliefs is part of the educational belief system, and it has an important influence on the school principal's practice. Finding such beliefs can help to approach the core of the principal's educational beliefs system.

5.6.4 The lack of belief education for pre-service teachers

In the interview, Mr. Liu talked about the major influence of teacher education activities, especially sports activities, on his life beliefs, but he did not talk about the impact on his own educational beliefs from the curriculum, novitiate and internship of teacher education. In general, teacher education has little effect on his educational beliefs. The reason probably is that Mr. Liu personally may have a vague impression about the teacher education that he received over 30 years ago. This should not be a good explanation because he was very impressed with the sports activities during his teacher education. In contrast, today's pre-service teacher education in China still has two problems. First, the curriculum setting of normal colleges and universities puts a general emphasis on the teaching of professional knowledge and the training of teaching skills, and neglects the education of emotions, attitudes and values, which results in the lack of educational beliefs. Second, there are serious problems with the teaching methods. The main form of classroom instruction is still the traditional method based on lecture. The teaching aims mainly to repeat the viewpoints on the textbooks, and let the students to "understand". Students learn the theory by rote memory and aim to "recite". Researchers (Wan & Lei, 2015) had compared the effects of traditional and constructivist instruction in teacher professional ethics courses. It was found that, the latter is not more effective than former in learning and memorizing ethical knowledge, but is so in practicing them. The traditional method does not have a big impact on the overall educational beliefs of student teachers.

5.6.5 The advocacy of ideas has no meaning for the promotion of educational beliefs, and educational practice has a great influence on beliefs

In the interview, researchers found that Mr. Liu received various training for

principals during his 32 years of work and 23 years as principal. There are training programs for novice principals and for principals' improvement, for principals from all kinds of schools and for only those from rural schools, for principals from kindergarten, primary and secondary schools, and exclusively for those from primary schools. However, when talking about what influenced his educational beliefs, he talked about people and things in the course of educational practice, especially the important people and incidents, such as Professor Z, whom he mentioned many times. Through the contact with these people and the participation in these events, he "knows that the teacher can work like that, the textbook can be taught in that way, and the school can be ran in that way". To the principals who came from the prestigious schools to help him to diagnose problems, he refused to shake hands with them because he thought that they could only bring him ideas, and the advocacy of ideas had no meaning for the promotion of educational beliefs and practical teaching practices. After all, it was just "empty talk".

Chapter 6 Research conclusions and reflections

6.1 Conclusions

The aims of this research is to describe the current status of educational beliefs, seek for the mechanism of formation and change of educational beliefs, explore the influence of the educational beliefs on school-running practice, and put forward the promotion suggestions of educational beliefs of rural primary school principals.

To fulfill the aims of the research, this research adopted mixed methodology of quantitative and qualitative research to describe the general characteristics of educational beliefs of rural primary school principals by macroscopic investigation, explore the realistic performances, the factors of influence, and impacts on school-running practice by microscopic case study.

Through a macro-investigation of 420 primary school principals in Sichuan, China and a micro-case on educational beliefs of one rural primary school principal, this research has arrived at the following conclusions:

(1) The overall level of educational beliefs of rural principals is "good", while it is uneven in other levels.

(2) There are significant differences on origin, ethnicity, age, teaching age and professional title variables.

• Urban primary principals' educational beliefs are obviously higher than those of rural principals.

• The educational beliefs of the rural principals with Han ethnicity are obviously higher than those of principals of minorities.

• The educational beliefs of rural principals in minority region are the lowest.

• Rural principals' educational belief level generally goes up with the increase of principals' age.

• Educational beliefs of rural primary school principals get higher with the growth of teaching age.

• The higher the rural principals' professional title, the better principals' educational beliefs level.

(3) There are no significant differences on gender and educational background variables.

• Rural primary principals' educational beliefs basically have nothing to do with gender.

- The educational background does not affect the rural principals' educational beliefs.

(4) Educational beliefs do not necessarily lead to changes in practice, which are also constrained by other factors.

(5) The actual situation of the school determines the focus of the principal's educational beliefs.

(6) In the educational beliefs system, there is a belief that has not been publicly declared but has had an important impact on practice.

(7) The lack of belief education for pre-service teachers.

(8) The advocacy of ideas has no meaning for the promotion of educational beliefs, and educational practice has a great influence on beliefs.

6.2 Reflections

Reflecting on the research origin, design, process and conclusions, the researcher further understands the significance of educational beliefs of primary school principals; feels the compromise between the ideal plan of research and reality; and experiences excruciation and happiness of study abroad. This part mainly reflects the implications and limitations of this research so as to provide some experience for future study.

6.2.1 Implications of the research

According to the conclusions of this research, some suggestions are put forward to promote educational beliefs of school principals in the Chinese rural areas.

(1) The initiative of principals to promote their educational beliefs

The results showed the overall level of rural primary principals' educational beliefs was "good", but it was uneven in others levels. Several belief dimensions, including curriculum teaching, internal school management and development of teachers, score low. Especially the average in curriculum and teaching dimension was significantly lower than the average of overall beliefs, and just reaches "fair". It indicated principals' beliefs were unsatisfactory on this dimension. As principals, in order to transform and promote educational beliefs, they should first have a clear recognition towards their educational beliefs. In a certain educational situation, why do I respond in this way, instead of in another? What kind of educational beliefs do I hold? How do my educational beliefs form? Do my educational beliefs reflect the positive orientation? Are my educational beliefs consistent with my educational practice? All in all, principals should be fully aware of what kind of educational beliefs are determining their

educational practice.

Secondly, principals should dare to explore and criticize their own educational beliefs. On the basis of having defined educational beliefs, principals should dissect the reasonable part and unreasonable part of their educational beliefs. On the one hand, they should find the positive side and further strengthen it in future practice; on the other, they should pinpoint the negative part, analyze how they formed and what the root cause was, analyze what kind of negative effect it would lead to in their educational practice, and consider how to rectify it.

Lastly, principals should dare to transform and uplift their educational beliefs. On the basis of criticizing their original educational beliefs, to renovate and form new educational beliefs, and apply to their educational practice, verifying and rectifying the new educational beliefs by using the final practical effect to see whether it is positive or not. By doing this, principals themselves will be able to find effective strategies to transform and enhance their educational beliefs.

(2) Strengthen the training for younger principals at the practical level

Research results displayed that, in general, the age, teaching age, professional title were intertwined with educational beliefs level. Principals of elder age, with longer teaching experience, higher professional titles usually have a higher level of educational beliefs. On the contrary, younger principals showed a lower level of educational beliefs. Therefore, it was necessary to intensify the training for the younger principals, help them promote professional development level and management efficiency as soon as possible.

The phenomenon that principals of older age, with longer teaching time and higher professional titles had a higher level of educational beliefs reflected that educational practice had an important effect on principals' educational beliefs. It was because principals of elder age, with longer teaching time and higher professional titles had more teaching practice experience. The research results also showed that the younger principals with short teaching experience and lower professional titles were lower on curriculum and teaching, teacher development and internal management dimensions, so training for younger principals should also stress the training at the practical level, except for the learning of traditional theories. On one hand, more observation and learning opportunities should be provided for younger principals to immerse them in the practical educational situation of excellent principals. By learning and simulating these excellent principals, the younger principals would naturally check their original

educational beliefs and criticize the negative parts in their educational beliefs system, thus consciously rectifying and adjusting them. On the other, ask the younger principals to finish some specific training missions combined with management reality. Because educational practice and educational beliefs fell within the same process, they needed to verify and support each other. The younger principals also needed to gradually renovate and enhance their educational beliefs under the guidance of experts and combined with their educational practice.

(3) Government agencies should increase their targeted investment in the weak areas and vulnerable schools

The research results showed that the educational beliefs were notably different in rural and urban areas. The former was obviously lower than the latter. It also showed that the educational beliefs were significant different in different regions. The educational beliefs of rural principals in minority region are the lowest. Therefore, the educational beliefs level in rural and minority areas should be substantially improved. The development of an individual relied on the influence of internal and external factors. The enhancement of beliefs should not only depend on the efforts of principals themselves. It should also rely on increasing education support for weak areas and vulnerable schools.

Researcher believes that government investment in weak areas and vulnerable schools should mainly be carried out in two aspects: personnel and finance. First, the difference of teacher treatment between different regions is obvious. In the same region, government departments should reflect on the fact that it is still hard to attract rural teachers and retain talents when the teachers' direct financial payment salaries in rural schools have already surpassed urban schools. Then, take innovative measures to offer preferential policies to weak areas and vulnerable schools concerning the selection and dispatching of teachers, the assessment and awarding of professional titles, the setting of teacher's positions and professional ranks, the rate of official positions, and regional subsidies so as to effectively improve the status and income of the teachers in these areas and schools, to optimize the structure of teaching staff, enhance the overall quality of the teachers, and ensure the stable expansion of teaching staff in weak areas and vulnerable schools. It is necessary to gradually set up a mechanism for reasonable teacher mobility to balance the quality of teacher resources between schools. At the same time, a partner assistance system should also be put in place between quality and weak schools. The assistance should be based on the needs of weak schools, and should

be guaranteed by the number of teachers and the time of assistant teaching. Second, government departments should go to schools to conduct in scientific and reasonable ways of distributing public funds to ensure that the school's funding needs can be met, such as the stratified coordination of basic operating expenses, appropriate scale funds, and special operating expenses (such as expenses for residential students). The principal "will no longer worry about money" and the principal can focus on education and teaching in order to promote the fast development of weak schools.

(4) Give more opportunities to females without singularly focusing on educational background in the appointment of principals

The research results showed that the rural principals of different genders basically showed no difference in their educational beliefs. This indicated there were no differences in educational belief between male and female principals. Moreover, research results also suggested the curriculum and teaching belief level of female principals was significantly higher than of male principals. However, the reality was that in the primary school whose teaching staff was primarily females, but the male principals took up a high proportion. It seemed that the males had more opportunities to be the manager of a school. In the selection and appointment of new principals, if more chances could be given to the females, it would be able to make more female teacher feel more responsibility and sense of value. Whether the female were finally chosen as principals, it was beneficial to inspire the working activity of the whole female teacher group.

The finding also indicated that the educational background had no effect on principals' educational beliefs, suggesting higher educational background did not equate a higher educational belief level. Therefore, it was suggested that in the process of selection and appointment of new principals, the over-stress for the importance of educational background in Chinese talents selection and appointment should be rectified. The two points above advocated that to give less consideration to gender and educational background in the selection and appointment of new principals was beneficial to select people who were more suitable for this position. Then, the educational beliefs level of rural principals could be indirectly enhanced.

(5) The promotion of the principal's beliefs must not only focus on motivation, but also on the improvement of knowledge and ability

The principal's educational beliefs system must solve: first, the problem of the principal's willingness to do things, that is, motivation; and second, the problem of the

principal's ability to do things, that is, knowledge and ability. Both of these aspects need to work so that the principal's educational beliefs can truly influence the practice. To enhance the principal's educational beliefs, it is necessary to pay attention to motivation, and the improvement of knowledge and ability. Motivation ensures that the principal is "willing to run a good school", and knowledge and ability ensures that the principal knows "how to run a good school" when other conditions are satisfied. Both aspects are indispensable.

(6) To recognize the existence of undeclared beliefs

Undeclared or even unconscious beliefs have an important influence on practice. To research educational beliefs, we must not only see the declared part, but also recognize the existence of undeclared beliefs and strive to explore it. On the one hand, the undeclared belief in education is closer to the core of the belief system, and it is an implicit explanatory framework for guiding educational practice. On the other hand, the principal must have a clear understanding of his own beliefs before he can transform and enhance them. Only after the implicit undeclared educational belief is transformed into an explicit educational belief can the principal reflect on it, analyze it, compare it with positive oriented educational beliefs, find out its reasonable and unreasonable parts, criticize it, update it, and construct the new positive educational beliefs. Therefore, it is necessary to recognize the existence of undeclared beliefs and create opportunities to reflect on it and reveal it.

(7) Pre-service teacher education should be reformed

For the belief cultivation of pre-service teachers, the content of teacher belief education should be improved and the way of teacher belief education should be adjusted. In terms of the content: first, belief education should be regarded as an important task, and put it into the curriculum of teacher education. For example, it can be designed specific content about educational ideals and beliefs in the "teachers' professional ethics". Second, the specific content of educational beliefs must be connected with the practice of student teachers and avoid empty talks. In terms of the form: ① Use a variety of vivid teaching forms, such as case teaching methods. The procedure of case teaching is that teachers first vividly explain the real education and teaching cases in the school context, and then let students discuss their understanding of education, and enable students to re-examine their own deep-rooted educational beliefs and to recognize the irrationalities in their educational beliefs system when various ideas collide and interact with one another. After many times of case teaching and

classroom discussion, a positive orientation of educational belief will be formed eventually. ② Teacher education colleges and universities should pay attention to the important role of novitiate and internship, actively strengthen the connection with primary and secondary schools, give student teachers ample opportunities and time to contact and understand the actual situation of teaching in primary and secondary schools, especially to observe the teaching activities of outstanding teachers so that positive educational beliefs can be firmly rooted in the hearts of student teachers. ③ Pay attention to the inspirational effect of teacher educators' own image on the formation of pre-service teacher beliefs. As a "teacher's teacher", in particular, they should set a good example so that students can directly feel the power of educational beliefs.

(8) Reform of in-service training, highlighting the role of important people and practice

The research results showed that short-term, content-based training has little effect on the promotion of educational beliefs. Therefore, in-service training should pay attention to the following aspects: ① The training time should be relatively long. The principal's educational beliefs are influenced by personality, and pre-service belief education took form in the student era and has become basically stable in educational practice. Therefore, it takes a long time to change beliefs. ② Highlight the important role of important people. As important people in the work practice have a profound influence on the formation, change and promotion of educational beliefs, the traditional way of in-service principal training can be changed. According to the specific conditions of each school and principal, a Professor Z can be selected and assigned to every principal under training, to give continuous or discontinuous guides the principal for a long period of time, until the expected effect appears. ③ Focus on specific issues. As the concept-advocacy training is meaningless for the promotion of the principal's educational beliefs, the training content should focus on the specific issues and problems encountered in the principal's running of the school to motivate the principal's internal motivation for change. Through the discussion of specific problem situations, the principal is guided to find gaps and inadequacies between his own beliefs and advocating beliefs, to translate the beliefs that need to be advocated into practical and imitable examples, and to put them into practice in real education situations.

6.2.2 Limitations of the research and prospects for future study

The main limitations of this research and prospects for future study can be

analyzed from two aspects:

(1) Expanding the sample range

This research applied random sampling by using samples of 420 primary school principals from 13 cities (autonomous prefecture), 75 counties (county-level city, district) in Sichuan Province. Samples came from respectively: Chengdu, Aba Tibetan autonomous prefecture, Garze Tibetan autonomous prefecture, Yi autonomous prefecture of Liangshan, Dazhou, Deyang, Guangyuan, Leshan, Luzhou, Meishan, Mianyang, Nanchong, Suining, etc. Among them, 329 principals came from rural areas, 91 principals from urban areas. The sampling method was a combination of paper questionnaire and internet questionnaire. This study results had some representative meaning in Sichuan province, but it did not cover all the western areas, and nor investigate among more rural principals in more provinces across China. Future research should expand the sampling range.

(2) Improvement on measurement instrument for educational beliefs

In this study, the questionnaire was designed by the researchers through taking the school principals' professional standards in compulsory education as the measurement dimension, including six dimensions: school planning, school culture, curriculum and teaching, development of teachers, internal school management and external school management. The results showed that the questionnaire is valid and reliable. However, the explanation of principals' educational beliefs could be understood in a board or smaller sense, and its efficiency was remained to be studied. In the future research, the connotation and denotation could be further defined so as to enhance the reliability and validity of measurement instrument, and more accurately assess the educational beliefs of primary school principals.

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Appendix 1 Tables

Table 1: Statistics of experts of validity testing

Composition of experts	Primary education	Education management	Psychology	Statistics	Primary school principals	Total
Number of people	2	2	2	2	3	11

Table 2: Statistics of the results of experts validity testing

Item	Very reasonable	Reasonable	Basic reasonable	Unreasonable	Very unreasonably	Total
Number of people	3	6	2	0	0	11
Percentage	27.27%	54.55%	18.18%	0	0	100%

Table 3: Statistics for the number of pretesting questionnaires and distribution

City(Autonomous Prefecture)	County(County-level City, District)	Number of questionnaires
Chengdu	Chenghua	4
	Jinjiang	3
	New Tianfu	1
	Pidu	5
	Dujiangyan	4
	Pengzhou	3
	Jianyang	5
Mianyang	Anzhou	5
	Santai	3
	Fucheng	4
Ganzi	Daocheng	6
	Baiyu	3
	Kangding	4
Dazhou	Dachuan	5
	Qu	7
Yibin	Cuiping	5
	Gong	6
Liangshan	Xichang	3
Total: 6	18	76

Table 4: Statistics of pretesting questionnaires distribution and collection

Questionnaire quantity	Recycling		Valid	
	Number	Rate (%)	Number	Rate (%)
78	78	100	76	97.44

Table 5: Critical value test (pretesting)

	Levene's Test for Equality of Variance		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std.Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Q1	14.044	.000	-2.457	224.503	.015	-.424	.172	-.764	-.084
Q2	61.262	.000	-5.931	167.416	.000	-.585	.099	-.779	-.390
Q3	13.487	.000	-5.924	196.232	.000	-.703	.119	-.938	-.469
Q4	74.957	.000	-8.065	141.487	.000	-.941	.117	-1.171	-.710
Q5	28.897	.000	-7.397	219.020	.000	-1.153	.156	-1.460	-.845
Q6	53.868	.000	-5.267	167.039	.000	-.466	.088	-.641	-.291
Q7	5.061	.025	-3.691	230.996	.000	-.390	.106	-.598	-.182
Q8	113.109	.000	-6.731	123.955	.000	-.576	.086	-.746	-.407
Q9	94.912	.000	-7.650	129.344	.000	-.703	.092	-.885	-.521
Q10	31.531	.000	-8.519	207.154	.000	-1.246	.146	-1.534	-.957
Q11	57.465	.000	-6.226	170.272	.000	-.542	.087	-.714	-.370
Q12	69.018	.000	-6.773	167.133	.000	-.593	.088	-.766	-.420
Q13	147.750	.000	-9.757	120.951	.000	-1.102	.113	-1.325	-.878
Q14	25.031	.000	-8.647	170.458	.000	-.856	.099	-1.051	-.661
Q15	13.185	.000	-.458	222.999	.648	-.068	.148	-.360	.224
Q16	3.206	.075	-6.368	234	.000	-.568	.089	-.743	-.392
Q17	49.443	.000	-8.669	145.791	.000	-.915	.106	-1.124	-.707
Q18	156.305	.000	-7.065	120.078	.000	-.525	.074	-.673	-.378
Q19	178.062	.000	-7.627	117.000	.000	-.576	.076	-.726	-.427
Q20	180.840	.000	-7.770	117.000	.000	-.593	.076	-.744	-.442
Q21	7.789	.006	-6.122	205.697	.000	-.703	.115	-.930	-.477
Q22	44.043	.000	-1.054	208.073	.293	-.178	.169	-.511	.155
Q23	101.891	.000	-8.727	139.250	.000	-.644	.074	-.790	-.498
Q24	45.397	.000	-12.225	194.368	.000	-1.678	.137	-1.949	-1.407
Q25	53.109	.000	-10.053	138.339	.000	-.805	.080	-.963	-.647
Q26	55.383	.000	-12.105	184.100	.000	-1.593	.132	-1.853	-1.334
Q27	37.522	.000	-11.006	144.023	.000	-.890	.081	-1.050	-.730
Q28	184.189	.000	-9.242	117.000	.000	-.644	.070	-.782	-.506
Q29	.343	.559	-6.721	234	.000	-1.076	.160	-1.392	-.761
Q30	165.189	.000	-12.189	139.387	.000	-1.534	.126	-1.783	-1.285
Q31	28.714	.000	-8.680	168.128	.000	-.695	.080	-.853	-.537
Q32	11.850	.001	-5.362	219.162	.000	-.915	.171	-1.252	-.579
Q33	6.196	.014	-9.807	223.989	.000	-1.356	.138	-1.628	-1.083
Q34	89.990	.000	-10.431	126.001	.000	-.788	.076	-.938	-.639
Q35	.161	.688	-7.642	234	.000	-1.263	.165	-1.588	-.937
Q36	51.114	.000	-10.592	148.415	.000	-1.025	.097	-1.217	-.834
Q37	111.911	.000	-12.124	151.581	.000	-1.449	.120	-1.685	-1.213
Q38	2.195	.140	-6.326	234	.000	-.754	.119	-.989	-.519
Q39	92.344	.000	-11.235	120.319	.000	-.805	.072	-.947	-.663
Q40	.936	.334	-6.374	234	.000	-1.102	.173	-1.442	-.761
Q41	53.557	.000	-7.672	162.636	.000	-.619	.081	-.778	-.459
Q42	53.409	.000	-8.633	152.915	.000	-.797	.092	-.979	-.614
Q43	2.391	.123	-6.342	234	.000	-1.102	.174	-1.444	-.759
Q44	124.833	.000	-11.667	155.445	.000	-1.585	.136	-1.853	-1.316
Q45	199.588	.000	-8.445	117.000	.000	-.610	.072	-.753	-.467
Q46	6.377	.012	-5.919	219.053	.000	-.729	.123	-.971	-.486
Q47	184.320	.000	-11.203	128.067	.000	-1.356	.121	-1.595	-1.116
Q48	53.523	.000	-8.225	166.895	.000	-.661	.080	-.820	-.502
Q49	73.002	.000	-8.547	173.652	.000	-1.169	.137	-1.440	-.899
Q50	7.696	.006	-8.298	188.601	.000	-.763	.092	-.944	-.581
Q51	1.966	.162	-6.264	234	.000	-.653	.104	-.858	-.447
Q52	34.579	.000	-7.614	189.857	.000	-.678	.089	-.854	-.502
Q53	44.370	.000	-10.349	194.330	.000	-1.432	.138	-1.705	-1.159
Q54	21.604	.000	-8.204	190.771	.000	-.890	.108	-1.104	-.676
Q55	29.897	.000	.677	215.260	.499	.102	.150	-.194	.398
Q56	89.982	.000	-10.132	123.028	.000	-.763	.075	-.912	-.614
Q57	33.079	.000	-10.064	142.774	.000	-.780	.077	-.933	-.627
Q58	4.940	.027	-7.254	215.117	.000	-.763	.105	-.970	-.555
Q59	128.412	.000	-8.713	120.035	.000	-.653	.075	-.801	-.504
Q60	17.564	.000	-8.878	168.856	.000	-.847	.095	-1.036	-.659

Table 6: Questionnaire items and total score correlation analysis of dimension 1 (pretesting)

		Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	D1
Q2	Pearson Correlation	1	.301**	.411**	.110*	.352**	.207**	.467**	.376**	.624**
	Sig. (2-tailed)		.000	.000	.024	.000	.000	.000	.000	.000
Q3	Pearson Correlation	.301**	1	.351**	.054	.351**	.223**	.315**	.281**	.582**
	Sig. (2-tailed)	.000		.000	.269	.000	.000	.000	.000	.000
Q4	Pearson Correlation	.411**	.351**	1	.138**	.351**	.327**	.463**	.386**	.673**
	Sig. (2-tailed)	.000	.000		.004	.000	.000	.000	.000	.000
Q5	Pearson Correlation	.110*	.054	.138**	1	.122*	.069	.201**	.155**	.461**
	Sig. (2-tailed)	.024	.269	.004		.012	.156	.000	.001	.000
Q6	Pearson Correlation	.352**	.351**	.351**	.122*	1	.277**	.620**	.530**	.665**
	Sig. (2-tailed)	.000	.000	.000	.012		.000	.000	.000	.000
Q7	Pearson Correlation	.207**	.223**	.327**	.069	.277**	1	.331**	.376**	.541**
	Sig. (2-tailed)	.000	.000	.000	.156	.000		.000	.000	.000
Q8	Pearson Correlation	.467**	.315**	.463**	.201**	.620**	.331**	1	.724**	.771**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000
Q9	Pearson Correlation	.376**	.281**	.386**	.155**	.530**	.376**	.724**	1	.717**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000	.000		.000
D1	Pearson Correlation	.624**	.582**	.673**	.461**	.665**	.541**	.771**	.717**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

D1 means the dimension of school planning.

Table 7: Questionnaire items and total score correlation analysis of dimension 2 (pretesting)

		Q10	Q11	Q12	Q13	Q14	Q16	Q17	Q18	Q19	Q20	D2
Q10	Pearson Correlation	1	.023	.000	.431**	.112*	.001	.135**	.091	.118*	.115*	.446**
	Sig. (2-tailed)		.637	.995	.000	.022	.983	.006	.063	.016	.018	.000
Q11	Pearson Correlation	.023	1	.573**	.129**	.352**	.362**	.323**	.533**	.467**	.505**	.629**
	Sig. (2-tailed)	.637		.000	.008	.000	.000	.000	.000	.000	.000	.000
Q12	Pearson Correlation	.000	.573**	1	.114*	.405**	.359**	.354**	.601**	.492**	.530**	.650**
	Sig. (2-tailed)	.995	.000		.019	.000	.000	.000	.000	.000	.000	.000
Q13	Pearson Correlation	.431**	.129**	.114*	1	.101*	.117*	.094	.224**	.262**	.252**	.503**
	Sig. (2-tailed)	.000	.008	.019		.038	.016	.055	.000	.000	.000	.000
Q14	Pearson Correlation	.112*	.352**	.405**	.101*	1	.371**	.295**	.429**	.390**	.428**	.604**
	Sig. (2-tailed)	.022	.000	.000	.038		.000	.000	.000	.000	.000	.000
Q16	Pearson Correlation	.001	.362**	.359**	.117*	.371**	1	.267**	.424**	.365**	.429**	.556**
	Sig. (2-tailed)	.983	.000	.000	.016	.000		.000	.000	.000	.000	.000

Q17	Pearson Correlation	.135**	.323**	.354**	.094	.295**	.267**	1	.438**	.402**	.469**	.606**
	Sig. (2-tailed)	.006	.000	.000	.055	.000	.000		.000	.000	.000	.000
Q18	Pearson Correlation	.091	.533**	.601**	.224**	.429**	.424**	.438**	1	.698**	.749**	.759**
	Sig. (2-tailed)	.063	.000	.000	.000	.000	.000	.000		.000	.000	.000
Q19	Pearson Correlation	.118*	.467**	.492**	.262**	.390**	.365**	.402**	.698**	1	.789**	.732**
	Sig. (2-tailed)	.016	.000	.000	.000	.000	.000	.000	.000		.000	.000
Q20	Pearson Correlation	.115*	.505**	.530**	.252**	.428**	.429**	.469**	.749**	.789**	1	.776**
	Sig. (2-tailed)	.018	.000	.000	.000	.000	.000	.000	.000	.000		.000
D2	Pearson Correlation	.446**	.629**	.650**	.503**	.604**	.556**	.606**	.759**	.732**	.776**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

D2 means the dimension of school culture.

Table 8: Questionnaire items and total score correlation analysis of dimension 3 (pretesting)

		Q21	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	D3
Q21	Pearson Correlation	1	.440**	-.003	.474**	.148**	.407**	.311**	.044	-.013	.376**	-.077	.038	.383**	-.069	.356**
	Sig. (2-tailed)		.000	.953	.000	.002	.000	.000	.364	.791	.000	.116	.436	.000	.160	.000
Q23	Pearson Correlation	.440**	1	.083	.559**	.166**	.476**	.574**	-.054	.082	.540**	-.106*	.043	.614**	-.002	.423**
	Sig. (2-tailed)	.000		.088	.000	.001	.000	.000	.270	.092	.000	.030	.376	.000	.967	.000
Q24	Pearson Correlation	-.003	.083	1	.103*	.338**	.105*	.147**	.356**	.478**	.066	.331**	.295**	.121*	.327**	.626**
	Sig. (2-tailed)	.953	.088		.035	.000	.031	.002	.000	.000	.177	.000	.000	.013	.000	.000
Q25	Pearson Correlation	.474**	.559**	.103*	1	.239**	.456**	.559**	-.056	.108*	.568**	-.043	.055	.563**	.054	.474**
	Sig. (2-tailed)	.000	.000	.035		.000	.000	.000	.253	.027	.000	.382	.259	.000	.273	.000
Q26	Pearson Correlation	.148**	.166**	.338**	.239**	1	.156**	.157**	.271**	.461**	.101*	.172**	.363**	.187**	.212**	.613**
	Sig. (2-tailed)	.002	.001	.000	.000		.001	.001	.000	.000	.038	.000	.000	.000	.000	.000
Q27	Pearson Correlation	.407**	.476**	.105*	.456**	.156**	1	.486**	-.039	.171**	.420**	.000	.097*	.474**	.045	.453**
	Sig. (2-tailed)	.000	.000	.031	.000	.001		.000	.421	.000	.000	.999	.047	.000	.360	.000
Q28	Pearson Correlation	.311**	.574**	.147**	.559**	.157**	.486**	1	-.052	.155**	.548**	-.027	.010	.623**	.069	.454**
	Sig. (2-tailed)	.000	.000	.002	.000	.001	.000		.283	.001	.000	.587	.843	.000	.159	.000
Q29	Pearson Correlation	.044	-.054	.356**	-.056	.271**	-.039	-.052	1	.373**	-.105*	.361**	.236**	-.067	.285**	.507**
	Sig. (2-tailed)	.364	.270	.000	.253	.000	.421	.283		.000	.032	.000	.000	.168	.000	.000
Q30	Pearson Correlation	-.013	.082	.478**	.108*	.461**	.171**	.155**	.373**	1	.046	.352**	.327**	.172**	.343**	.664**

	Sig. (2-tailed)	.791	.092	.000	.027	.000	.000	.001	.000		.342	.000	.000	.000	.000	.000
Q31	Pearson Correlation	.376**	.540**	.066	.568**	.101*	.420**	.548**	-.105*	.046	1	-.108*	.024	.552**	-.013	.370**
	Sig. (2-tailed)	.000	.000	.177	.000	.038	.000	.000	.032	.342		.027	.617	.000	.793	.000
Q32	Pearson Correlation	-.077	-.106*	.331**	-.043	.172**	.000	-.027	.361**	.352**	-.108*	1	.140**	-.052	.397**	.482**
	Sig. (2-tailed)	.116	.030	.000	.382	.000	.999	.587	.000	.000	.027		.004	.291	.000	.000
Q33	Pearson Correlation	.038	.043	.295**	.055	.363**	.097*	.010	.236**	.327**	.024	.140**	1	.047	.212**	.493**
	Sig. (2-tailed)	.436	.376	.000	.259	.000	.047	.843	.000	.000	.617	.004		.334	.000	.000
Q34	Pearson Correlation	.383**	.614**	.121*	.563**	.187**	.474**	.623**	-.067	.172**	.552**	-.052	.047	1	.067	.471**
	Sig. (2-tailed)	.000	.000	.013	.000	.000	.000	.000	.168	.000	.000	.291	.334		.171	.000
Q35	Pearson Correlation	-.069	-.002	.327**	.054	.212**	.045	.069	.285**	.343**	-.013	.397**	.212**	.067	1	.534**
	Sig. (2-tailed)	.160	.967	.000	.273	.000	.360	.159	.000	.000	.793	.000	.000	.171		.000
D3	Pearson Correlation	.356**	.423**	.626**	.474**	.613**	.453**	.454**	.507**	.664**	.370**	.482**	.493**	.471**	.534**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

D3 means the dimension of curriculum and teaching.

Table 9: Questionnaire items and total score correlation analysis of dimension 4 (pretesting)

		Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	D4
Q36	Pearson Correlation	1	.054	.401**	.563**	.076	.447**	.384**	.042	.061	.454**	.537**
	Sig. (2-tailed)		.270	.000	.000	.122	.000	.000	.386	.214	.000	.000
Q37	Pearson Correlation	.054	1	.049	.182**	.278**	.096*	.028	.194**	.406**	.117*	.526**
	Sig. (2-tailed)	.270		.314	.000	.000	.050	.564	.000	.000	.016	.000
Q38	Pearson Correlation	.401**	.049	1	.491**	-.074	.338**	.309**	-.116*	-.034	.396**	.391**
	Sig. (2-tailed)	.000	.314		.000	.131	.000	.000	.018	.482	.000	.000
Q39	Pearson Correlation	.563**	.182**	.491**	1	-.014	.583**	.543**	-.018	.101*	.738**	.600**
	Sig. (2-tailed)	.000	.000	.000		.771	.000	.000	.708	.039	.000	.000
Q40	Pearson Correlation	.076	.278**	-.074	-.014	1	-.066	.031	.294**	.420**	-.029	.523**
	Sig. (2-tailed)	.122	.000	.131	.771		.177	.528	.000	.000	.559	.000
Q41	Pearson Correlation	.447**	.096*	.338**	.583**	-.066	1	.511**	-.012	.069	.644**	.502**
	Sig. (2-tailed)	.000	.050	.000	.000	.177		.000	.810	.160	.000	.000

Q42	Pearson Correlation	.384**	.028	.309**	.543**	.031	.511**	1	.087	.170**	.576**	.552**
	Sig. (2-tailed)	.000	.564	.000	.000	.528	.000		.075	.000	.000	.000
Q43	Pearson Correlation	.042	.194**	-.116*	-.018	.294**	-.012	.087	1	.313**	-.046	.487**
	Sig. (2-tailed)	.386	.000	.018	.708	.000	.810	.075		.000	.352	.000
Q44	Pearson Correlation	.061	.406**	-.034	.101*	.420**	.069	.170**	.313**	1	.096	.608**
	Sig. (2-tailed)	.214	.000	.482	.039	.000	.160	.000	.000		.050	.000
Q45	Pearson Correlation	.454**	.117*	.396**	.738**	-.029	.644**	.576**	-.046	.096	1	.546**
	Sig. (2-tailed)	.000	.016	.000	.000	.559	.000	.000	.352	.050		.000
D4	Pearson Correlation	.537**	.526**	.391**	.600**	.523**	.502**	.552**	.487**	.608**	.546**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

D4 means the dimension of development of teachers.

Table 10: Questionnaire items and total score correlation analysis of dimension 5 (pretesting)

		Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	D5
Q46	Pearson Correlation	1	-.023	.358**	-.021	.241**	.159**	.266**	.085	.123*	.465**
	Sig. (2-tailed)		.642	.000	.662	.000	.001	.000	.081	.012	.000
Q47	Pearson Correlation	-.023	1	.052	.512**	.065	.064	.080	.417**	.156**	.559**
	Sig. (2-tailed)	.642		.286	.000	.185	.189	.100	.000	.001	.000
Q48	Pearson Correlation	.358**	.052	1	-.037	.423**	.470**	.406**	.030	.320**	.565**
	Sig. (2-tailed)	.000	.286		.446	.000	.000	.000	.541	.000	.000
Q49	Pearson Correlation	-.021	.512**	-.037	1	-.007	-.054	.028	.319**	.133**	.481**
	Sig. (2-tailed)	.662	.000	.446		.893	.271	.571	.000	.006	.000
Q50	Pearson Correlation	.241**	.065	.423**	-.007	1	.425**	.351**	.024	.184**	.506**
	Sig. (2-tailed)	.000	.185	.000	.893		.000	.000	.619	.000	.000
Q51	Pearson Correlation	.159**	.064	.470**	-.054	.425**	1	.361**	.036	.259**	.514**
	Sig. (2-tailed)	.001	.189	.000	.271	.000		.000	.457	.000	.000
Q52	Pearson Correlation	.266**	.080	.406**	.028	.351**	.361**	1	.067	.252**	.530**
	Sig. (2-tailed)	.000	.100	.000	.571	.000	.000		.171	.000	.000
Q53	Pearson Correlation	.085	.417**	.030	.319**	.024	.036	.067	1	.032	.515**

	Sig. (2-tailed)	.081	.000	.541	.000	.619	.457	.171		.516	.000
Q54	Pearson Correlation	.123*	.156**	.320**	.133**	.184**	.259**	.252**	.032	1	.514**
	Sig. (2-tailed)	.012	.001	.000	.006	.000	.000	.000	.516		.000
D5	Pearson Correlation	.465**	.559**	.565**	.481**	.506**	.514**	.530**	.515**	.514**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

D5 means the dimension of internal school management.

Table 11: Questionnaire items and total score correlation analysis of dimension 6 (pretesting)

		Q56	Q57	Q58	Q59	Q60	D6
Q56	Pearson Correlation	1	.687**	.491**	.778**	.551**	.843**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
Q57	Pearson Correlation	.687**	1	.480**	.686**	.545**	.822**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
Q58	Pearson Correlation	.491**	.480**	1	.515**	.429**	.748**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
Q59	Pearson Correlation	.778**	.686**	.515**	1	.595**	.858**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
Q60	Pearson Correlation	.551**	.545**	.429**	.595**	1	.785**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
D6	Pearson Correlation	.843**	.822**	.748**	.858**	.785**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

D6 means the dimension of external school environment.

Table 12: KMO indicator criteria

KMO Value	Criteria	Factor analysis fitness
0.90 to 1.00	marvelous	Perfect
0.80 to 0.89	meritorious	Meritorious
0.70 to 0.79	middling	Middling
0.60 to 0.69	mediocre	Mediocre
0.50 to 0.59	miserable	Miserable
0.00 to 0.50	unacceptable	Unacceptable

Table 13: Factor loadings, the percentage of variation explained, and selection criteria

Factor loadings	Communalities	Variable status
.71	50%	Excellent
.63	40%	Very good
.55	30%	Good
.45	20%	Fair
.32	10%	Poor
<.32	<10%	Deleted

Table 14: KMO and Barlett's test of the questionnaire (pretesting)

Kaiser-Meyer-Olkin		.948
Bartlett's test of sphericity	Chi-square	12244.092
	df	1378
	Sig.	.000

Table 15: Total variance explained (pretesting)

Component	Extraction sums of squared loadings			Rotation sums of squared loadings		
	Characteristic value	Variance （%）	Cumulative （%）	Characteristic value	Variance （%）	Cumulative （%）
1	16.398	30.940	30.940	14.031	26.475	26.475
2	5.871	11.078	42.018	5.831	11.001	37.475
3	1.861	3.511	45.529	3.615	6.820	44.295
4	1.527	2.881	48.410	1.916	3.616	47.911
5	1.322	2.495	50.905	1.473	2.780	50.691
6	1.280	2.415	53.320	1.393	2.629	53.320

Table 16: Analysis of the exploratory factors of the questionnaire (pretesting)

Factor	No.	Factor loadings	Communalities	Note
School planning	2	.551	.450	Retained
	3	.391	.308	Deleted
	4	.542	.450	Retained
	5	.392	.434	Deleted
	6	.598	.575	Retained
	7	.381	.457	Deleted
	8	.656	.707	Retained
	9	.626	.600	Retained
School culture	10	.531	.517	Retained
	11	.563	.537	Retained
	12	.543	.568	Retained
	13	.653	.541	Retained
	14	.451	.339	Retained
	16	.517	.354	Retained
	17	.540	.504	Retained
	18	.715	.699	Retained
	19	.699	.644	Retained
	20	.792	.752	Retained
Curriculum and teaching	23	.715	.580	Retained
	24	.690	.499	Retained
	25	.676	.560	Retained
	26	.534	.506	Retained
	27	.573	.433	Retained
	28	.739	.652	Retained
	29	.507	.463	Retained
	30	.763	.594	Retained
	32	.573	.487	Retained
	33	.560	.526	Retained
	34	.768	.634	Retained
	35	.578	.377	Retained
Development of teachers	36	.637	.637	Retained
	37	.770	.604	Retained
	39	.820	.724	Retained

	40	.459	.532	Retained
	41	.694	.546	Retained
	42	.554	.465	Retained
	43	.602	.481	Retained
	44	.572	.544	Retained
	45	.828	.770	Retained
Internal school management	46	.407	.345	Deleted
	47	.714	.626	Retained
	48	.719	.534	Retained
	49	.572	.454	Retained
	50	.592	.415	Retained
	51	.597	.464	Retained
	52	.600	.470	Retained
	53	.578	.398	Retained
	54	.495	.420	Retained
External school environment	56	.823	.706	Retained
	57	.765	.632	Retained
	58	.626	.436	Retained
	59	.850	.791	Retained
	60	.669	.522	Retained

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Table 17: Criteria for subscale reliability value

Cronbach's alpha	Component reliability
$\alpha \geq 0.900$	Excellent
$0.800 \leq \alpha \leq 0.899$	Very Good
$0.700 \leq \alpha \leq 0.799$	Good
$0.600 \leq \alpha \leq 0.699$	Acceptable
$0.500 \leq \alpha \leq 0.599$	Poor
<0.500	Unacceptable

Table 18: Criteria for total scale reliability value

Cronbach's alpha	Questionnaire reliability
≥0.800	Very Good
$0.700 \leq \alpha \leq 0.799$	Good
$0.600 \leq \alpha \leq 0.699$	Acceptable
<0.600	Unacceptable

Table 19: Pretesting questionnaire and sub-questionnaire reliability summary

	N of Items	Cronbach's Alpha
school planning	5	0.802
school culture	10	0.780
curriculum and teaching	12	0.744
development of teachers	9	0.657
internal school management	8	0.628
external school environment	5	0.855
Pretesting questionnaire	49	0.917

Table 20: School planning reliability test (pretesting)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
Q2	18.75	5.168	.793
Q4	18.79	5.067	.795
Q6	18.67	5.524	.767
Q8	18.61	5.156	.721
Q9	18.70	5.043	.747

Table 21: School culture reliability test (pretesting)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
Q10	41.90	16.471	.819
Q11	41.26	16.539	.753
Q12	41.24	16.357	.750
Q13	41.41	16.501	.781
Q14	41.36	16.225	.757
Q16	41.43	16.728	.763
Q17	41.47	15.772	.760
Q18	41.11	16.617	.743
Q19	41.12	16.517	.743
Q20	41.12	16.444	.740

Table 22: Curriculum and teaching reliability test (pretesting)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
Q23	43.30	40.881	.740
Q24	44.19	33.650	.705
Q25	43.38	40.198	.737
Q26	44.01	34.599	.711
Q27	43.45	39.832	.737
Q28	43.21	40.628	.737
Q29	45.09	35.319	.728
Q30	43.86	33.683	.696
Q32	45.14	35.198	.733
Q33	44.37	36.214	.730
Q34	43.31	40.339	.736
Q35	44.51	34.370	.724

Table 23: Development of teachers reliability test (pretesting)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
Q36	33.40	17.974	.630
Q37	33.68	16.775	.626
Q39	33.14	18.443	.623
Q40	34.44	15.770	.644
Q41	33.14	18.715	.633
Q42	33.25	17.948	.623
Q43	34.82	16.007	.664
Q44	33.72	15.279	.597
Q45	33.03	18.906	.631

Table 24: Internal school management reliability test (pretesting)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
Q47	30.46	11.810	.566
Q48	30.14	13.392	.589
Q49	30.72	12.253	.612
Q50	30.37	13.378	.598
Q51	30.41	12.988	.593
Q52	30.19	13.383	.592
Q53	30.95	12.014	.620
Q54	30.41	12.567	.599

Table 25: External school environment reliability test (pretesting)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
Q56	18.29	5.146	.806
Q57	18.30	5.142	.813
Q58	18.52	4.875	.864
Q59	18.19	5.297	.804
Q60	18.47	4.808	.840

Table 26: Overall indicator tests for questionnaire retention item

Item	Critical value	Correlation	The alpha value after item deletion	Communalities	Factor loadings	Note
Q2	5.542**	.709**	.793	.525	.614	Retained
Q4	8.023**	.717**	.795	.521	.489	Retained
Q6	5.554**	.727**	.767	.597	.614	Retained
Q8	6.896**	.845**	.721	.738	.704	Retained
Q9	7.785**	.784**	.747	.619	.647	Retained
Q11	6.439**	.683**	.794	.508	.531	Retained
Q12	7.351**	.712**	.790	.592	.573	Retained
Q13	9.501**	.424**	.850	.608	.670	Retained
Q14	8.867**	.629**	.805	.439	.466	Retained
Q16	6.994**	.610**	.806	.349	.512	Retained
Q17	9.372**	.625**	.812	.593	.605	Retained
Q18	7.336**	.805**	.783	.677	.678	Retained
Q19	7.625**	.768**	.785	.617	.681	Retained
Q20	7.772**	.816**	.781	.725	.771	Retained
Q23	9.476**	.339**	/	/	/	Deleted
Q24	11.720**	.663**	.696	.527	.718	Retained
Q25	10.658**	.388**	/	/	/	Deleted
Q26	10.740**	.625**	.713	.510	.527	Retained
Q27	11.301**	.387**	/	/	/	Deleted
Q28	9.585**	.389**	/	/	/	Deleted
Q29	5.937**	.546**	.714	.538	.612	Retained
Q30	12.595**	.708**	.685	.614	.751	Retained
Q32	5.324**	.536**	.721	.555	.600	Retained
Q33	8.967**	.520**	.729	.515	.478	Retained
Q34	10.888**	.397**	.760	.613	.736	Retained
Q35	7.618**	.582**	.717	.425	.576	Retained
Q36	11.590**	.548**	.629	.705	.648	Retained
Q37	12.974**	.558**	.642	.613	.755	Retained
Q39	12.266**	.627**	.613	.719	.776	Retained
Q40	5.917**	.546**	.691	.595	.681	Retained
Q41	7.804**	.538**	.629	.559	.696	Retained

Q42	8.901**	.571**	.621	.463	.531	Retained
Q44	10.579**	.635**	.626	.547	.560	Retained
Q45	9.171**	.591**	.623	.762	.821	Retained
Q47	11.716**	.619*	.566	.653	.592	Retained
Q48	9.205**	.522**	.589	.567	.742	Retained
Q49	8.551**	.534**	.612	.496	.508	Retained
Q50	9.002**	.490**	.598	.415	.593	Retained
Q51	7.449**	.521**	.593	.451	.653	Retained
Q52	8.061**	.509**	.592	.476	.563	Retained
Q53	11.100**	.542**	.620	.427	.580	Retained
Q54	7.961**	.531**	.599	.538	.599	Retained
Q56	11.070**	.869**	.806	.719	.824	Retained
Q57	10.695**	.847**	.821	.639	.763	Retained
Q59	9.632**	.879**	.802	.786	.838	Retained
Q60	9.491**	.819**	.881	.537	.648	Retained
Criteria	≥3.000	≥.400	≤.Cronbach's Alpha	≥0.200	≥0.450	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

"school planning" Cronbach's Alpha : 0.802

"school culture" Cronbach's Alpha : 0.819

"curriculum and teaching" Cronbach's Alpha : 0.745

"development of teachers" Cronbach's Alpha : 0.664

"internal school management" Cronbach's Alpha : 0.628

"external school environment" Cronbach's Alpha : 0.864

"Questionnaire of Educational Beliefs of Primary School Principals (Pretesting)": 0.906

Table 27: Formal questionnaire distribution and collection statistics

Questionnaire quantity	Recycling		Valid	
	Number	Rate(%)	Number	Rate(%)
435	426	97.93	420	98.59

Table 28: Reliability of total questionnaire and sub-questionnaires

	N of Items	Cronbach's Alpha
school planning	5	0.831
school culture	9	0.851
curriculum and teaching	8	0.779
development of teachers	8	0.699
internal school management	8	0.676
external school environment	4	0.887
Total questionnaire	42	0.922

Table 29: School planning reliability test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
B1	18.69	6.100	.821
B2	18.74	6.017	.829
B3	18.61	6.423	.794
B4	18.56	6.004	.759
B5	18.64	5.894	.784

Table 30: School culture reliability test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
B6	37.20	15.420	.829
B7	37.19	15.112	.825
B8	37.34	16.524	.875
B9	37.30	15.311	.839
B10	37.35	15.672	.839
B11	37.41	14.996	.848
B12	37.08	15.535	.820
B13	37.07	15.541	.822
B14	37.06	15.490	.819

Table 31: Curriculum and teaching reliability test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
B15	26.05	28.437	.737
B16	25.87	29.865	.751
B17	26.90	28.747	.750
B18	25.75	28.657	.729
B19	26.93	28.629	.758
B20	26.22	30.383	.761
B21	25.24	36.507	.793
B22	26.32	28.437	.751

Table 32: Development of teacher reliability test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
B23	30.48	14.105	.664
B24	30.71	13.539	.676
B25	30.23	14.369	.647
B26	31.46	13.267	.733
B27	30.22	14.805	.665
B28	30.32	14.043	.652
B29	30.75	12.647	.668
B30	30.11	14.923	.659

Table 33: Internal school management reliability test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
B31	30.55	13.194	.628
B32	30.25	14.542	.638
B33	30.78	13.767	.670
B34	30.48	14.402	.642
B35	30.52	13.969	.637
B36	30.32	14.674	.647
B37	31.00	13.302	.668
B38	30.50	13.662	.642

Table 34: External school environment reliability test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Cronbach's Alpha if Item Deleted
B39	13.85	3.291	.840
B40	13.88	3.279	.858
B41	13.76	3.406	.835
B42	14.02	3.017	.891

Table 35: KMO and Barlett's test of the questionnaire

Kaiser-Meyer-Olkin		.952
Bartlett's test of sphericity	Chi-square	16422.748
	df	861
	Sig.	.000

Table 36: Total variance explained

Component	Extraction sums of squared loadings			Rotation sums of squared loadings		
	Characteristic value	Variance (%)	Cumulative (%)	Characteristic value	Variance (%)	Cumulative (%)
1	14.676	34.943	34.943	11.839	28.187	28.187
2	5.429	12.927	47.870	5.067	12.065	40.252
3	1.600	3.810	51.679	3.577	8.516	48.768
4	1.385	3.297	54.976	1.912	4.553	53.320
5	1.202	2.861	57.837	1.839	4.377	57.698
6	1.084	2.580	60.417	1.142	2.719	60.417

Table 37: Analysis of the exploratory factors of the questionnaire

Factor	No.	Factor loadings	Communalities
School planning	1	.622	.528
	2	.499	.476
	3	.625	.637
	4	.682	.772
	5	.662	.661
School culture	6	.562	.592
	7	.536	.611
	8	.656	.679
	9	.483	.460
	10	.533	.365
	11	.609	.630
	12	.741	.711
	13	.757	.693
	14	.819	.778
Curriculum and teaching	15	.730	.556
	16	.533	.567
	17	.648	.574
	18	.762	.649
	19	.652	.578
	20	.508	.544
	21	.772	.648
	22	.608	.449
Development of teachers	23	.659	.744
	24	.741	.621
	25	.801	.740
	26	.709	.602
	27	.734	.609
	28	.548	.512
	29	.635	.611
	30	.853	.798
Internal school management	31	.565	.668
	32	.754	.600
	33	.483	.466
	34	.603	.444
	35	.648	.469
	36	.610	.489
	37	.597	.440
	38	.610	.595
External school environment	39	.854	.757
	40	.777	.654
	41	.868	.810
	42	.712	.583

Table 38: Statistics of location status of schools

Different background factors		Sample size (person)	Percentage (%)
Location	1	126	38.3
	2	138	41.9
	3	65	19.8
	Total	329	100.0

1 refers to provincial capital region，2 refers to minority region，3 refers to other region.

Table 39: Statistics of position status of school principals

Different background factors		Sample size (person)	Percentage (%)
Position	1	216	65.7
	2	113	34.3
	Total	329	100.0

1 refers to school principals, 2 refers to deputy principals.

Table 40: Statistics of school principal genders

Different background factors		Sample size (person)	Percentage (%)
Gender	1	268	81.5
	2	61	18.5
	Total	329	100.0

1 refers to male, 2 refers to female.

Table 41: Statistics of age status of school principals

Different background factors		Sample size (person)	Percentage (%)
Age	1	22	6.7
	2	124	37.7
	3	171	52.0
	4	12	3.6
	Total	329	100.0

1 refers to 21-30 years old, 2 refers to 31-40 years old, 3 refers to 41-50 years old, and 4 refers to older than 50 years old.

Table 42: Statistics of teaching age status of school principals

Different background factors		Sample size (person)	Percentage (%)
Teaching age	1	11	3.3
	2	22	6.7
	3	110	33.4
	4	164	49.8
	5	22	6.7
	Total	329	100.0

1 refers to less than 5 years, 2 refers to 6-10 years, 3 refers to 11-20 years, 4 refers to 21-30 years, and 5 refers to more than 30 years.

Table 43: Statistics of ethnic compositions of school principals

Different background factors		Sample size (person)	Percentage (%)
Ethnic composition	1	220	66.9
	2	80	24.3
	3	26	7.9
	4	1	.3
	5	1	.3
	6	1	.3
	Total	329	100.0

1 refers to Han, 2 refers to Tibetan, 3 refers to Yi, 4 refers to Hui, 5 refers to Buyi, and 6 refers to Qiang.

Table 44: Statistics of educational backgrounds of school principals

Different background factors		Sample size (person)	Percentage (%)
Educational background	1	4	1.2
	2	115	35.0
	3	208	63.2
	4	2	.6
	Total	329	100.0

1 refers to the degree of senior high school or technical secondary education, 2 refers to the degree of junior college, 3 refers to undergraduate degrees, and 4 refers to postgraduate degrees.

Table 45: Statistics of professional titles of school principals

Different background factors		Sample size (person)	Percentage (%)
Professional title	1	3	.9
	2	29	8.8
	3	47	14.3
	4	145	44.1
	5	105	31.9
	Total	329	100.0

1 refers to level 3 of primary teacher or untitled, 2 refers to level 2 of primary teacher, 3 refers to level 3 of primary teacher, 4 refers to senior primary school teacher, 5 refers to senior secondary teacher, and 6 refers to top-level professional title.

Table 46: Levels of means

Level	Poor	Passing	Fair	Good	Excellent
Mean	1-2.99	3-3.49	3.5-3.99	4-4.499	4.5-4.99

Table 47: Descriptive statistics of educational beliefs from entirety and dimension levels

	Mean	SD	N	Sample size
Principals' education beliefs	4.3291	.39548	42	329
School planning belief	4.6675**	.52864	5	329
School culture belief	4.6532**	.42092	9	329
Curriculum and teaching belief	3.6261**	.73008	8	329
Teacher development belief	4.3229	.50095	8	329
Internal school management belief	4.3203	.48965	8	329
External school environment belief	4.6125**	.52153	4	329

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 48: Descriptive analysis of each item

Dimension	Item	Mean	SD	Sample size
School planning	1	4.60	.839	329
	2	4.57	.857	329
	3	4.73	.598	329
	4	4.77	.594	329
	5	4.67	.725	329
School culture	6	4.68	.619	329
	7	4.70	.647	329
	8	4.51	.914	329
	9	4.58	.762	329
	10	4.52	.681	329

	11	4.44	.932	329
	12	4.84	.452	329
	13	4.81	.538	329
	14	4.80	.513	329
Curriculum and teaching	15	3.72	1.295	329
	16	3.95	1.225	329
	17	2.83	1.331	329
	18	4.08	1.174	329
	19	2.78	1.422	329
	20	3.61	1.238	329
	21	4.67	.597	329
	22	3.38	1.409	329
Development of teachers	23	4.42	.841	329
	24	4.07	1.101	329
	25	4.65	.581	329
	26	3.34	1.392	329
	27	4.69	.607	329
	28	4.58	.711	329
	29	4.05	1.237	329
	30	4.79	.491	329
Internal school management	31	4.30	1.035	329
	32	4.66	.658	329
	33	4.04	1.166	329
	34	4.42	.762	329
	35	4.36	.845	329
	36	4.60	.722	329
	37	3.82	1.208	329
	38	4.36	1.000	329
External school environment	39	4.64	.585	329
	40	4.61	.620	329
	41	4.74	.527	329
	42	4.46	.792	329

Table 49: Descriptive analysis of educational beliefs of principals with different origins

	Origin	N	Mean	SD
Total	1	91	186.3736	19.44716
	2	329	181.8207	16.61017
Dimension1	1	91	23.5275	3.23982
	2	329	23.3374	2.64319
Dimension2	1	91	41.9560	4.93719
	2	329	41.8784	3.78827
Dimension3	1	91	30.7473	5.88519
	2	329	29.0091	5.84061
Dimension4	1	91	35.6593	3.88221
	2	329	34.5836	4.00760
Dimension5	1	91	35.6923	4.06528
	2	329	34.5623	3.91720
Dimension6	1	91	18.7912	2.59708
	2	329	18.4498	2.08612

1 refers to urban area, 2 refers to rural area.

Table 50: The results of independent sample t-test of educational beliefs of principals with different origins

		Levene's Test for Equality of Variance		t-test for Equality of Means						
		F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std.Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total	Equal variances assumed	.080	.777	2.227	418	.026	4.55296	2.04436	.53445	8.57147
	Equal variances not assumed			2.037	128.549	.044	4.55296	2.23485	.13111	8.97481
Dimension1	Equal variances assumed	.074	.786	.577	418	.564	.19009	.32956	-.45772	.83789
	Equal variances not assumed			.514	125.026	.608	.19009	.36957	-.54133	.92151
Dimension2	Equal variances assumed	.014	.906	.161	418	.872	.07762	.48125	-.86835	1.02360
	Equal variances not assumed			.139	120.819	.890	.07762	.55811	-1.02732	1.18257
Dimension3	Equal variances assumed	.360	.549	2.508	418	.013	1.73813	.69291	.37610	3.10016
	Equal variances not assumed			2.498	142.807	.014	1.73813	.69591	.36251	3.11376
Dimension4	Equal variances assumed	3.783	.052	2.282	418	.023	1.07575	.47151	.14893	2.00258
	Equal variances not assumed			2.323	147.361	.022	1.07575	.46308	.16063	1.99088
Dimension5	Equal variances assumed	.219	.640	2.416	418	.016	1.13000	.46779	.21048	2.04952
	Equal variances not assumed			2.365	139.635	.019	1.13000	.47775	.18543	2.07457
Dimension6	Equal variances assumed	.400	.527	1.306	418	.192	.34136	.26130	-.17227	.85499
	Equal variances not assumed			1.155	123.907	.250	.34136	.29554	-.24361	.92633

Table 51: Descriptive analysis of educational beliefs of principals with different genders

	Gender	N	Mean	SD
Total	1	268	181.3545	17.08969
	2	61	183.8689	14.26006
Dimension1	1	268	23.2575	2.81598
	2	61	23.6885	1.65872
Dimension2	1	268	41.7836	3.96683
	2	61	42.2951	2.86557
Dimension3	1	268	28.6866	5.81541
	2	61	30.4262	5.78636
Dimension4	1	268	34.6940	4.09206
	2	61	34.0984	3.60419
Dimension5	1	268	34.5075	3.93438
	2	61	34.8033	3.86359
Dimension6	1	268	18.4254	2.16675
	2	61	18.5574	1.69828

1 refers to male, 2 refers to female.

Table 52: The results of independent samples t-test of educational beliefs of principals with different genders

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std.Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total	Equal variances assumed	1.382	.241	-1.067	327	.287	-2.51437	2.35585	-7.14891	2.12016
	Equal variances not assumed			-1.196	103.163	.235	-2.51437	2.10318	-6.68545	1.65671
Dimension1	Equal variances assumed	3.447	.064	-1.150	327	.251	-.43106	.37478	-1.16835	.30623
	Equal variances not assumed			-1.577	150.032	.117	-.43106	.27330	-.97108	.10895
Dimension2	Equal variances assumed	2.474	.117	-.952	327	.342	-.51150	.53749	-1.56887	.54587
	Equal variances not assumed			-1.163	118.682	.247	-.51150	.43969	-1.38216	.35916
Dimension3	Equal variances assumed	.106	.745	-2.111	327	.036	-1.73966	.82423	-3.36113	-.11820
	Equal variances not assumed			-2.117	89.694	.037	-1.73966	.82163	-3.37205	-.10728

Dimension4	Equal variances assumed	1.201	.274	1.048	327	.295	.59567	.56844	-.52259	1.71393
	Equal variances not assumed			1.135	98.469	.259	.59567	.52482	-.44575	1.63709
Dimension5	Equal variances assumed	.166	.684	-.532	327	.595	-.29582	.55631	-1.39021	.79858
	Equal variances not assumed			-.538	90.533	.592	-.29582	.54997	-1.38834	.79671
Dimension6	Equal variances assumed	.652	.420	-.446	327	.656	-.13200	.29630	-.71490	.45090
	Equal variances not assumed			-.519	109.324	.605	-.13200	.25456	-.63651	.37250

Table 53: Descriptive analysis of educational beliefs of principals with different ethnicities

	Ethnicity	N	Mean	SD
Total	1	220	184.6773	14.87054
	2	109	176.0550	18.42092
Dimension1	1	220	23.4864	2.15915
	2	109	23.0367	3.41002
Dimension2	1	220	42.0864	3.16614
	2	109	41.4587	4.79493
Dimension3	1	220	30.3955	5.37056
	2	109	26.2110	5.77041
Dimension4	1	220	34.9136	3.71800
	2	109	33.9174	4.48068
Dimension5	1	220	35.1409	3.49209
	2	109	33.3945	4.45142
Dimension6	1	220	18.6545	1.68765
	2	109	18.0367	2.68027

1 refers Han, 2 refers minority ethnicity.

Table 54: The results of independent samples t-test of educational beliefs of principals with different ethnicities

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std.Error Difference	95% Confidence Interval of the Difference	
									Lower	Lower
Total	Equal variances assumed	2.325	.128	4.564	327	.000	8.62223	1.88931	4.90550	12.33896
	Equal variances not assumed			4.249	179.758	.000	8.62223	2.02935	4.61781	12.62664

Dimension1	Equal variances assumed	6.460	.011	1.455	327	.147	.44967	.30907	-.15836	1.05769
	Equal variances not assumed			1.257	152.205	.211	.44967	.35759	-.25682	1.15615
Dimension2	Equal variances assumed	4.591	.033	1.417	327	.158	.62765	.44305	-.24393	1.49923
	Equal variances not assumed			1.239	156.108	.217	.62765	.50645	-.37274	1.62803
Dimension3	Equal variances assumed	1.327	.250	6.488	327	.000	4.18445	.64491	2.91576	5.45313
	Equal variances not assumed			6.333	202.224	.000	4.18445	.66075	2.88161	5.48728
Dimension4	Equal variances assumed	5.407	.021	2.134	327	.034	.99621	.46689	.07771	1.91470
	Equal variances not assumed			2.004	183.712	.046	.99621	.49701	.01562	1.97679
Dimension5	Equal variances assumed	8.485	.004	3.887	327	.000	1.74641	.44926	.86260	2.63023
	Equal variances not assumed			3.586	175.840	.000	1.74641	.48705	.78519	2.70764
Dimension6	Equal variances assumed	4.305	.039	2.550	327	.011	.61785	.24233	.14113	1.09456
	Equal variances not assumed			2.200	151.710	.029	.61785	.28081	.06305	1.17265

Table 55: Descriptive analysis of educational beliefs of principals with different regions

	Region	N	Mean	SD
Total	1	126	185.9444	14.60044
	2	138	177.7319	17.83769
	3	65	182.5077	15.70044
	Total	329	181.8207	16.61017
Dimension1	1	126	23.5952	1.81628
	2	138	23.1087	3.23007
	3	65	23.3231	2.60473
	Total	329	23.3374	2.64319
Dimension2	1	126	42.2143	3.16887
	2	138	41.5942	4.47644
	3	65	41.8308	3.26233

	Total	329	41.8784	3.78827
Dimension3	1	126	31.0476	5.35740
	2	138	26.9493	5.72397
	3	65	29.4308	5.57889
	Total	329	29.0091	5.84061
Dimension4	1	126	34.9921	3.67586
	2	138	34.2609	4.37695
	3	65	34.4769	3.78776
	Total	329	34.5836	4.00760
Dimension5	1	126	35.3492	3.21327
	2	138	33.6884	4.33590
	3	65	34.8923	3.90562
	Total	329	34.5623	3.91720
Dimension6	1	126	18.7460	1.71084
	2	138	18.1304	2.49913
	3	65	18.5538	1.67734
	Total	329	18.4498	2.08612

1 refers provincial capital region, 2 refers minority region, 3 refers other region.

Table 56: ANOVA and post hoc test of educational beliefs of principals with different regions

		Sum of Squares	df	Mean Square	F	Sig.	Post Hoc	
							Scheffe	LSD
Total	Between Groups	4480.482	2	2240.241	8.491	.000	1>2	1>2
	Within Groups	86013.937	326	263.846				
	Total	90494.419	328					
Dimension1	Between Groups	15.608	2	7.804	1.118	.328		
	Within Groups	2275.942	326	6.981				
	Total	2291.550	328					
Dimension2	Between Groups	25.509	2	12.754	.888	.412		
	Within Groups	4681.628	326	14.361				
	Total	4707.137	328					
Dimension3	Between Groups	1120.675	2	560.337	18.143	.000	1>2, 3>2	1>2, 3>2
	Within Groups	10068.298	326	30.884				
	Total	11188.973	328					
Dimension4	Between Groups	36.135	2	18.068	1.126	.326		
	Within Groups	5231.816	326	16.049				
	Total	5267.951	328					
Dimension5	Between Groups	190.490	2	95.245	6.412	.002	1>2	1>2, 3>2
	Within Groups	4842.483	326	14.854				
	Total	5032.973	328					
Dimension6	Between Groups	25.836	2	12.918	3.005	.051		
	Within Groups	1401.587	326	4.299				
	Total	1427.422	328					

Table 57: Descriptive analysis of educational beliefs of principals with different ages

	Age	N	Mean	SD
Total	1	22	170.5909	22.19322
	2	124	180.2339	16.71673
	3	171	184.4269	15.04383
	4	12	181.6667	16.66970
	Total	329	181.8207	16.61017
Dimension1	1	22	22.6818	4.25817
	2	124	23.4355	2.66944
	3	171	23.3333	2.40588

	4	12	23.5833	1.88092
	Total	329	23.3374	2.64319
Diemnsion2	1	22	40.5000	6.47155
	2	124	41.8387	3.80070
	3	171	42.1228	3.29565
	4	12	41.3333	3.67630
	Total	329	41.8784	3.78827
Dimension3	1	22	25.4091	6.24621
	2	124	27.9355	6.06703
	3	171	30.1871	5.28149
	4	12	29.9167	6.21521
	Total	329	29.0091	5.84061
Dimension4	1	22	31.6818	5.06516
	2	124	34.4597	4.03722
	3	171	35.0409	3.74536
	4	12	34.6667	3.25669
	Total	329	34.5836	4.00760
Dimension5	1	22	32.5455	4.90604
	2	124	34.1371	3.80913
	3	171	35.1345	3.75884
	4	12	34.5000	3.96576
	Total	329	34.5623	3.91720
Dimension6	1	22	17.7727	3.62441
	2	124	18.4274	2.22394
	3	171	18.6082	1.66760
	4	12	17.6667	2.10339
	Total	329	18.4498	2.08612

1 refers to 21-30 years old, 2 refers to 31-40 years old, 3 refers to 41-50 years old, and 4 refers to older than 50 years old.

Table 58: ANOVA and post hoc test of educational beliefs of principals with different ages

		Sum of Squares	df	Mean Square	F	Sig.	Post Hoc	
							Scheffe	LSD
Total	Between Groups	4248.381	3	1416.127	5.336	.001	3>1	2>1, 3>1, 3>2
	Within Groups	86246.039	325	265.372				
	Total	90494.419	328					
Dimension1	Between Groups	11.377	3	3.792	.541	.655		
	Within Groups	2280.173	325	7.016				
	Total	2291.550	328					
Dimension2	Between Groups	55.775	3	18.592	1.299	.275		
	Within Groups	4651.362	325	14.312				
	Total	4707.137	328					
Dimension3	Between Groups	675.242	3	225.081	6.958	.000	3>1, 3>2	3>1, 4>1, 3>2
	Within Groups	10513.730	325	32.350				
	Total	11188.973	328					
Dimension4	Between Groups	223.000	3	74.333	4.789	.003	2>1, 3>1	2>1, 3>1, 4>1
	Within Groups	5044.951	325	15.523				
	Total	5267.951	328					

Dimension5	Between Groups	167.942	3	55.981	3.740	.011	3>1	3>1, 3>2
	Within Groups	4865.030	325	14.969				
	Total	5032.973	328					
Dimension6	Between Groups	21.797	3	7.266	1.680	.171		
	Within Groups	1405.626	325	4.325				
	Total	1427.422	328					

Table 59: Descriptive analysis of educational beliefs of principals with different teaching ages

	Teaching age	N	Mean	SD
Total	1	11	171.0909	13.92447
	2	22	170.7727	22.12073
	3	110	179.9364	16.44634
	4	164	185.0061	15.05470
	5	22	183.9091	16.54981
	Total	329	181.8207	16.61017
Dimension1	1	11	24.2727	1.67874
	2	22	22.3182	4.17916
	3	110	23.1909	2.91310
	4	164	23.4512	2.29244
	5	22	23.7727	1.87545
	Total	329	23.3374	2.64319
Dimension2	1	11	42.2727	2.79610
	2	22	39.9545	6.66531
	3	110	41.6727	3.99107
	4	164	42.2988	3.08207
	5	22	41.5000	3.72572
	Total	329	41.8784	3.78827
Dimension3	1	11	22.2727	6.94393
	2	22	26.8636	4.86284
	3	110	28.0818	5.87817
	4	164	30.1280	5.36651
	5	22	30.8182	6.08383
	Total	329	29.0091	5.84061
Dimension4	1	11	31.6364	4.43334
	2	22	31.8182	4.64590
	3	110	34.6545	3.94093
	4	164	35.0854	3.75704
	5	22	34.7273	3.89361
	Total	329	34.5836	4.00760
Dimension5	1	11	31.8182	3.81623
	2	22	32.3182	4.95106
	3	110	34.1000	3.74399
	4	164	35.3476	3.72950
	5	22	34.6364	3.51250
	Total	329	34.5623	3.91720
Dimension6	1	11	18.8182	1.88776
	2	22	17.5000	3.47440
	3	110	18.2364	2.31836
	4	164	18.6951	1.63691
	5	22	18.4545	1.94513
	Total	329	18.4498	2.08612

1 refers to less than 5 years, 2 refers to 6-10 years, 3 refers to 11-20 years, 4 refers to 21-30 years, and 5 refers to more than 30 years.

Table 60: ANOVA and post hoc test of educational beliefs of principals with different teaching ages

		Sum of Squares	df	Mean Square	F	Sig.	Post Hoc	
							Scheffe	LSD
Total	Between Groups	6102.280	4	1525.570	5.857	.000	4>2	4>1, 5>1, 3>2, 4>2, 5>2, 4>3
	Within Groups	84392.139	324	260.470				
	Total	90494.419	328					
Dimension1	Between Groups	41.131	4	10.283	1.480	.208		
	Within Groups	2250.419	324	6.946				
	Total	2291.550	328					
Dimension2	Between Groups	119.922	4	29.981	2.118	.078		
	Within Groups	4587.214	324	14.158				
	Total	4707.137	328					
Dimension3	Between Groups	972.353	4	243.088	7.709	.000	3>1, 4>1, 5>1	2>1, 3>1, 4>1, 5>1, 4>2, 5>2, 4>3, 5>3
	Within Groups	10216.620	324	31.533				
	Total	11188.973	328					
Dimension4	Between Groups	306.092	4	76.523	4.997	.001	3>2, 4>2	3>1, 4>1, 5>1, 3>2, 4>2, 5>2
	Within Groups	4961.859	324	15.314				
	Total	5267.951	328					
Dimension5	Between Groups	318.384	4	79.596	5.470	.000	4>2	4>1, 5>1, 3>2, 4>2, 5>2, 4>3
	Within Groups	4714.589	324	14.551				
	Total	5032.973	328					
Dimension6	Between Groups	36.221	4	9.055	2.109	.079		
	Within Groups	1391.202	324	4.294				
	Total	1427.422	328					

Table 61: The results of descriptive analysis and ANOVA of educational beliefs of principals with different educational backgrounds

	Educational background	N	Mean	SD	F	Sig.
Total	1	4	178.7500	28.24152	1.950	.121
	2	115	179.2522	17.19998		
	3	208	183.1587	15.94552		
	4	2	196.5000	12.02082		
	Total	329	181.8207	16.61017		
Dimension1	1	4	23.0000	2.82843	1.726	.161
	2	115	22.9217	3.23128		
	3	208	23.5577	2.24287		
	4	2	25.0000	.00000		
	Total	329	23.3374	2.64319		
Diemnsion2	1	4	40.7500	6.65207	.860	.462
	2	115	41.6087	4.01247		
	3	208	42.0192	3.61286		
	4	2	45.0000	.00000		
	Total	329	41.8784	3.78827		
Dimension3	1	4	29.2500	4.92443	1.837	.140
	2	115	28.0522	6.02020		

	3	208	29.4952	5.71716		
	4	2	33.0000	5.65685		
	Total	329	29.0091	5.84061		
Dimension4	1	4	33.5000	5.68624	1.182	.316
	2	115	34.2261	4.24896		
	3	208	34.7644	3.84196		
	4	2	38.5000	.70711		
	Total	329	34.5836	4.00760		
Dimension5	1	4	34.7500	6.39661	.766	.514
	2	115	34.1217	4.06989		
	3	208	34.7933	3.78282		
	4	2	35.5000	4.94975		
	Total	329	34.5623	3.91720		
Dimension6	1	4	17.5000	2.51661	.687	.560
	2	115	18.3217	2.20664		
	3	208	18.5288	2.01902		
	4	2	19.5000	.70711		
	Total	329	18.4498	2.08612		

1 refers to degree of senior high school or technical secondary education, 2 refers to degree of junior college, 3 refers to undergraduate degrees, and 4 refers to postgraduate degrees.

Table 62: Descriptive analysis of educational beliefs of principals with different professional titles

	Professional title	N	Mean	SD
Total	1	3	173.6667	18.23001
	2	29	171.1379	19.92795
	3	47	174.4894	19.38946
	4	145	185.5724	13.64721
	5	105	183.1048	15.91681
	Total	329	181.8207	16.61017
Dimension1	1	3	24.0000	1.73205
	2	29	22.6552	3.80109
	3	47	22.6809	3.52695
	4	145	23.6552	2.48154
	5	105	23.3619	1.89190
	Total	329	23.3374	2.64319
Dimension2	1	3	42.3333	2.30940
	2	29	40.6552	5.84487
	3	47	41.1915	4.99843
	4	145	42.4207	2.98996
	5	105	41.7619	3.38698
	Total	329	41.8784	3.78827
Dimension3	1	3	21.6667	8.73689
	2	29	26.1379	5.61073
	3	47	26.1702	6.19017
	4	145	29.9586	5.47453
	5	105	29.9714	5.43220
	Total	329	29.0091	5.84061
Dimension4	1	3	33.3333	4.61880
	2	29	31.8621	4.45392
	3	47	33.2979	4.47658
	4	145	35.4828	3.38933
	5	105	34.7048	4.01661
	Total	329	34.5836	4.00760
Dimension5	1	3	32.6667	6.42910
	2	29	32.3448	4.58473
	3	47	33.3404	4.17173

	4	145	35.2897	3.30176
	5	105	34.7714	4.02697
	Total	329	34.5623	3.91720
Dimension6	1	3	19.6667	.57735
	2	29	17.4828	3.18053
	3	47	17.8085	2.95354
	4	145	18.7655	1.62452
	5	105	18.5333	1.68743
	Total	329	18.4498	2.08612

1 refers level 3 of primary teacher or below, 2 refers level 2 of primary teacher, 3 refers level 1 of primary teacher, 4 refers senior primary school teacher, 5 refers senior secondary school teacher.

Table 63: ANOVA and post hoc test of educational beliefs of principals with different professional titles

		Sum of Squares	df	Mean Square	F	Sig.	Post Hoc	
							Scheffe	LSD
Total	Between Groups	8249.223	4	2062.306	8.124	.000	4>2, 5>2, 4>3	4>2, 5>2, 4>3, 5>3
	Within Groups	82245.197	324	253.843				
	Total	90494.419	328					
Dimension1	Between Groups	49.779	4	12.445	1.799	.129		
	Within Groups	2241.771	324	6.919				
	Total	2291.550	328					
Dimension2	Between Groups	110.256	4	27.564	1.943	.103		
	Within Groups	4596.881	324	14.188				
	Total	4707.137	328					
Dimension3	Between Groups	1007.553	4	251.888	8.016	.000	4>2, 5>2, 4>3, 5>3	4>1, 5>1, 4>2, 5>2, 4>3, 5>3
	Within Groups	10181.419	324	31.424				
	Total	11188.973	328					
Dimension4	Between Groups	415.952	4	103.988	6.944	.000	4>2, 5>2, 4>3	4>2, 5>2, 4>3, 5>3
	Within Groups	4851.999	324	14.975				
	Total	5267.951	328					
Dimension5	Between Groups	304.852	4	76.213	5.223	.000	4>2	4>2, 5>2, 4>3, 5>3
	Within Groups	4728.120	324	14.593				
	Total	5032.973	328					
Dimension6	Between Groups	66.077	4	16.519	3.932	.004		4>2, 5>2, 4>3, 5>3
	Within Groups	1361.346	324	4.202				
	Total	1427.422	328					

Appendix 2 Initial Questionnaire

Questionnaire of Educational Beliefs of Primary School Principals (pretesting)

Dear Principals,

Hello!

We are researchers from Teachers College of Chengdu University. The aim of this questionnaire is to gather your opinions on educational issues. Your answer is very important for us.

This is a kind of anonymous questionnaire, each answer is not absolutely good or bad. The result of the questionnaire is only for group analysis. It is absolutely confidential to the outside world. So please fill in the answer trustingly according to your own viewpoint. It probably takes 10 minutes to complete this questionnaire. We would like to express our heartfelt thanks to you for your support and help.

Teachers College of Chengdu University

Part 1 Basic personal information

[Instruction] Please use "√" to mark which of the choices given below correctly and fill the content in each blank according to your own situation. Please answer all of the questions. Please do not miss it.

1. The school is located in _____District (County-level City /County), _____City (Autonomous Prefecture), _____Province.

2. Type of school

A. Urban primary school B. Rural primary school (Refers to township central primary schools, basic schools or village schools below county level towns.) C. Others (Please fill the blank)_____

3. Position

A. Principal B. Deputy principal

4. Gender

A. Male B. Female

5. Age:_____years old

6. Teaching age: _____years

7. Ethnicity:_____

8. Educational background

A. High school or technical secondary school B. Junior college education C. Bachelor

or senior college degree D. Master degree or above

9. Professional title

A. Level 3 of primary teacher or below B. Level 2 of primary teacher C. Level 1 of primary teacher D. Senior primary school teacher E. Senior secondary school teacher F. Top-level profession title

10. Major of final education:_____

Part 2 Questionnaire of principals' beliefs

[Instruction] Please according to the description of each question, draw the mark "√" in the space which represented your real idea. 1-Fully disagree, 2-Disagree, 3-Neither agree nor disagree, 4-Agree, 5-Fully agree.

Items	1	2	3	4	5
1. Principal's philosophy of running a school is the school's running philosophy.					
2. It is the principal's responsibility and mission to strive to provide education suitable for every student's development.					
3. The principal should strive to become a contemporary educationalist.					
4. The school development plan should be participated by all the staff, students, parents and communities.					
5. The ordinary schools do not need to develop school characteristics.					
6. The principal should strive to make a good school recognized by general public.					
7. The principal should recognize the difference between different regions of schools.					
8. The principal should clarify the orientation of his school, refine the philosophy of running a school, and make a strategic plan for school development.					
9. School development planning should consider school tradition and reality.					
10. The principal should keep distance from the staff and students in order to embody his authority.					
11. Teachers should love students firstly.					
12. The principal should respect teachers firstly.					
13. Only the school with a good condition can make a cultural					

construction.					
14. The school system construction should be fully democratic and maximize the participation of teachers and students.					
15. Schools should carry out various activities as much as possible to expand their influence.					
16. The construction of school culture should be an important aspect of moral education.					
17. As long as the opportunity is given, every student will have a good performance.					
18. The principal himself must dare to think, dare to do, and handle all the things in a fair and just way. Teachers should be devoted to their students and their work. Students should study hard and positively.					
19. The healthy and positive mental outlook displayed by teachers will influence students unconsciously.					
20. The principal should be enthusiastic about education.					
21. Teachers should have the ability to design courses and choose teaching materials.					
22. The principal's pedagogical leadership is to evaluate and supervise curriculum and teaching.					
23. Teachers should pay attention to the cooperative learning of the student group.					
24. The contents of textbooks are knowledge recognized by experts, so teachers and students do not need to question.					
25. School-based curriculum development should demonstrate the characteristics of the school.					
26. Making classroom a happy place for teachers and students is only an ideal that cannot come to be true.					
27. Teaching should be closely related to the reality of the students' life.					
28. In the process of teaching, besides knowledge and ability, teachers should also emphasize the process and methods, pay attention to the cultivation of students' emotions, attitudes and values.					
29. Teachers have to conduct teaching process according to					

the curriculum progress stipulated by the school.					
30. The evaluation of students and teachers should be based on students' examination results. Students with good grades are good students. Teachers who are able to improve students' grades are good teachers.					
31. The school should use a series of perfect teaching management systems to ensure the operation order of school teaching activities.					
32. The basic purpose of class attendance and assessment is to evaluate the effect of teachers' teaching.					
33. The burden reduction problem involves the whole social system, and the principal is powerless.					
34. Under the background of information society, the principal should actively support and encourage teachers to apply information technology to reform teaching.					
35. In the teaching process, how to teach by teachers is more important than how to learn by students.					
36. As long as the opportunity is given, every teacher will grow up.					
37. The growth of teachers is mainly depended on teaching times. With the long times, the teachers will grow naturally.					
38. The key to teachers' professional development and growth is self-reflection and summary.					
39. Schools should actively look for the chances to boost teachers' professional development.					
40. As long as no physical harm is caused to students, moderate corporal punishment is allowed.					
41. The principal should lead all teachers in the same direction and strive for the goal of the school.					
42. Teachers should be proud of their educational work.					
43. Because of limited funds, teacher training cannot let every teacher benefit, and it is not the principal's duty.					
44. Paid remedial courses are beneficial to both students and teachers.					
45. Teachers should learn from each other, communicate with each other, inspire each other and make progress together.					

46. The principal is the first person responsible for all the work of the school.					
47. The principal is the boss of the school.					
48. Principals should always stick to their educational ideals, actively explore and constantly optimize the internal management of schools.					
49. The relationship between the principal and the staff is the relationship between the cadres and the masses.					
50. Teachers are the most valuable human resources in the reform and development of schools. Therefore, teacher incentive should be the focus of school management.					
51. The personal charm of the principal plays an important role in school running.					
52. The principal should not take everything under his hand. He should act in accordance with the principle of "unity of duty, right and benefit", and divide the work appropriately, persist in "who is in charge and who is responsible".					
53. In order to avoid students' safety accidents, schools should decrease activities outside of school.					
54. The development of a good school depends on the establishment of a modern educational system and cannot be changed because of the replacement of principals.					
55. The staff should obey the management of the principal.					
56. The principal should actively carry out cooperation and communication of schools.					
57. The improvement of school running depends on the positive interaction between school, family and society (community).					
58. The principal should actively improve public relations and make full use of all kinds of social resources.					
59. The principal should take the lead in establishing a good school image and strive for public understanding, trust, support and cooperation.					
60. The external environment of schools is not only the restricting power, but also the promotion force of school development.					

Appendix 3 Formal Questionnaire

Questionnaire of Educational Beliefs of Primary School Principals

Dear Principals,

Hello!

We are researchers from Teachers College of Chengdu University. The aim of this questionnaire is to gather your opinions on educational issues. Your answer is very important for us.

This is a kind of anonymous questionnaire, each answer is not absolutely good or bad. The result of the questionnaire is only for group analysis. It is absolutely confidential to the outside world. So please fill in the answer trustingly according to your own viewpoint. It probably takes 10 minutes to complete this questionnaire. We would like to express our heartfelt thanks to you for your support and help.

Teachers College of Chengdu University

Part 1 Basic personal information

[Instruction] Please use "√" to mark which of the choices given below correctly and fill the content in each blank according to your own situation. Please answer all of the questions. Please do not miss it.

1. The school is located in _____District (County-level City /County), _____City (Autonomous Prefecture), _____Province.

2. Type of school

A. Urban primary school B. Rural primary school (Refers to township central primary schools, basic schools or village schools below county level towns.) C. Others (Please fill the blank)_____

3. Position

A. Principal B. Deputy principal

4. Gender

B. Male B. Female

5. Age:_____years old

6. Teaching age: _____years

7. Ethnicity:_____

8. Educational background

A. High school or technical secondary school B. Junior college education C. Bachelor or senior college degree D. Master degree or above

9. Professional title

A. Level 3 of primary teacher or below B. Level 2 of primary teacher C. Level 1 of primary teacher D. Senior primary school teacher E. Senior secondary school teacher F. Top-level profession title

10. Major of final education:_____

Part 2 Questionnaire of principals' beliefs

[Instruction] Please according to the description of each question, draw the mark "√" in the space which represented your real idea. 1-Fully disagree, 2-Disagree, 3-Neither agree nor disagree, 4-Agree, 5-Fully agree.

Items	1	2	3	4	5
1. It is the principal's responsibility and mission to strive to provide education suitable for every student's development.					
2. The school development plan should be participated by all the staff, students, parents and communities.					
3. The principal should strive to make a good school recognized by general public.					
4. The principal should clarify the orientation of his school, refine the philosophy of running a school, and make a strategic plan for school development.					
5. School development planning should consider school tradition and reality.					
6. Teachers should love students firstly.					
7. The principal should respect teachers firstly.					
8. Only the school with a good condition can make a cultural construction.					
9. The school system construction should be fully democratic and maximize the participation of teachers and students.					
10. The construction of school culture should be an important aspect of moral education.					
11. As long as the opportunity is given, every student will have a good performance.					
12. The principal himself must dare to think, dare to do, and handle all the things in a fair and just way. Teachers should					

be devoted to their students and their work. Students should study hard and positively.					
13. The healthy and positive mental outlook displayed by teachers will influence students unconsciously.					
14. The principal should be enthusiastic about education.					
15. The contents of textbooks are knowledge recognized by experts, so teachers and students do not need to question.					
16. Making classroom a happy place for teachers and students is only an ideal that cannot come to be true.					
17. Teachers have to conduct teaching process according to the curriculum progress stipulated by the school.					
18. The evaluation of students and teachers should be based on students' examination results. Students with good grades are good students. Teachers who are able to improve students' grades are good teachers.					
19. The basic purpose of class attendance and assessment is to evaluate the effect of teachers' teaching.					
20. The burden reduction problem involves the whole social system, and the principal is powerless.					
21. Under the background of information society, the principal should actively support and encourage teachers to apply information technology to reform teaching.					
22. In the teaching process, how to teach by teachers is more important than how to learn by students.					
23. As long as the opportunity is given, every teacher will grow up.					
24. The growth of teachers is mainly depended on teaching times. With the long times, the teachers will grow naturally.					
25. Schools should actively look for the chances to boost teachers' professional development.					
26. As long as no physical harm is caused to students, moderate corporal punishment is allowed.					
27. The principal should lead all teachers in the same direction and strive for the goal of the school.					
28. Teachers should be proud of their educational work.					

29. Paid remedial courses are beneficial to both students and teachers.					
30. Teachers should learn from each other, communicate with each other, inspire each other and make progress together.					
31. The principal is the boss of the school.					
32. Principals should always stick to their educational ideals, actively explore and constantly optimize the internal management of schools.					
33. The relationship between the principal and the staff is the relationship between the cadres and the masses.					
34. Teachers are the most valuable human resources in the reform and development of schools. Therefore, teacher incentive should be the focus of school management.					
35. The personal charm of the principal plays an important role in school running.					
36. The principal should not take everything under his hand. He should act in accordance with the principle of “unity of duty, right and benefit”, and divide the work appropriately, persist in “who is in charge and who is responsible”.					
37. In order to avoid students’ safety accidents, schools should decrease activities outside of school.					
38. The development of a good school depends on the establishment of a modern educational system and cannot be changed because of the replacement of principals.					
39. The principal should actively carry out cooperation and communication of schools.					
40. The improvement of school running depends on the positive interaction between school, family and society (community).					
41. The principal should take the lead in establishing a good school image and strive for public understanding, trust, support and cooperation.					
42. The external environment of schools is not only the restricting power, but also the promotion force of school development.					

Appendix 4 Interview syllabus

Interview Syllabus for School Principal

1. Would you please briefly talk about your study and work experience?

2. Did you like to be a teacher from the beginning? Do you like it now? Why?

3. What difficulties did you encounter during the years of running school and how did you overcome it? What are the issues of working that you think about every day? Why?

4. What is an excellent school principal? What are the differences between an excellent principal and an ordinary principal?

5. Are there differences between the rural principals and urban principals? If yes, what are the differences? What result in these differences? What are the key and difficult aspects of rural school running?

6. How do you understand the principal's educational beliefs? What educational beliefs do you have in your work?

7. What are the factors that affect your educational beliefs? What are the important factors? Please tell some stories.

7.1 Do the important peoples or events have an impact on your growth, especially on your current educational beliefs? If yes, what influences do they have?

7.2 Does the pre-service teacher education have an impact on your current educational beliefs? If yes, what influences do they have?

7.3 Do the practical experiences of working have an impact on your current educational beliefs? If yes, what influences do they have?

8. How do you run a school based on your educational beliefs? What effects have been achieved?

Appendix 5 Some pictures of fieldwork in case school

Collapsed teaching building

School panorama

In class

Exercise between classes-Dati Dance

Wiping windows

After school

The hall of teaching building

The dormitory

Published works and research projects

1. Publications

1.1 Articles

Wan, Z. W., & Lei, Y. (2015). Instructing teacher ethics in China from the perspective of constructivism. *Journal of Sichuan Normal University*, (11), 188-190.

Rašková, M., Stolinská, D. P. & Wan, Z. W. Communication on puberty between primary school teacher and pupil. In the content of the project, Puberty-part of the sex education in the system of Czech and Chinese education. IGA_PdF_2015_007.

Wan, Z. W. (2017). The impact of new teacher qualification examination system on the cultivation of students majoring in primary education from the experiences of foreign countries. *Education and Teaching Research, 31*(8), 124-126.

Wan, Z. W., Rašková, M., Stolinská, D. P., & Liang, M. J. (2018). The standard of excellent school culture and revelations for reculturing. In P. Vyhnálková & J. Plischke (Eds.), *AKTUÁLNÍ PROBLÉMY PEDAGOGIKY VE VÝZKUMECH STUDENTŮ DOKTORSKÝCH STUDIJNÍCH PROGRAMŮ XII: Odumírání lidskosti? Výchovné výzvy v současné škole* (pp. 332-339). Olomouc.

Liang, M. J., Neumeister, P., & Wan, Z. W. (2018). Professional well-being of teachers in the rural areas of China and the contributing factors: A meta-analysis of relevant empirical researches from 2006 to 2016. In P. Vyhnálková & J. Plischke (Eds.), *AKTUÁLNÍ PROBLÉMY PEDAGOGIKY VE VÝZKUMECH STUDENTŮ DOKTORSKÝCH STUDIJNÍCH PROGRAMŮ XII: Odumírání lidskosti? Výchovné výzvy v současné škole* (pp. 155-163). Olomouc.

1.2 Reviews

Diary of a School Principal: When I was a School Principal in the United States. (2016)

Review Rational Thinking and Sapiential Strategy of Contemporary Principals in School Management. (2016)

1.3 Books

Wan, Z. W. (2015). Ideal education and ideal teacher. In D. W. Chen (Ed.), *Teacher's professional ethics* (pp. 72-79). Beijing: Higher Education Press.

2. Conferences

"III. OLOMOUCKÉ SPECIÁLNĚPEDAGOGICKÉ DNY", Olomouc: March 17-18, 2015.

"Ⅳ. Preschool Education International Symposium", Chengdu: April 24, 2015.

"The 2016 Conference of Academic Exchange and Teacher Training of School-based

Sexual Education in Sichuan and Sexual Education for Preschoolers in China", Chengdu: April 23, 2016.

"Dying Humanity? Educational Challenges in the Current School", Olomouc: November 8-9, 2016.

"Beginning Teacher in a Changing Society", Olomouc: November 7-8, 2017.

3. Research projects

Puberty-part of the sex education in the system of Czech and Chinese education, IGA, Participator, 2015-2016.

Research about factors affecting on the growth of educationist school principals and promoting strategies, Sichuan Provincial Research Center for Integration of Rural-Urban Education Development, Responsible Person, 2016-1017.