



# How Can the Construction of Future School Be Possible in Rural China: Ideal and Practice

Ting Gan<sup>1,2</sup> and Wei Li<sup>3,4</sup>(✉)

<sup>1</sup> Faculty of Humanities and Social Sciences, Macao Polytechnic University, Macao, China

<sup>2</sup> Department of Geography and Tourism, Huanggang Normal University, Huanggang, Hubei, China

<sup>3</sup> Department of Education, Huanggang Normal University, Huanggang, Hubei, China  
542790659@qq.com

<sup>4</sup> National Institute of Education Sciences, Haidian, Beijing, China

**Abstract.** Rural education is an important fulcrum of Rural Revitalization Strategy. To completely change the current shrinking pattern of rural education, building rural future schools is an effective solution. Looking back on the exploration and development history of rural schools in China, it is found that the development future of rural schools lies in the combination with the trend of the times, national needs and local culture. In the different expressions of global context and Chinese context, the future school construction presents a brilliant picture. At present, domestic educational research institutions and normal universities have made some theoretical research and practical exploration on the future school, but there are also some problems, such as the dislocation and imbalance of the relationship between technology and education, and the unclear attribute of the future school. Based on participatory observation and qualitative interviews with typical “future schools” such as Jiuduhe primary school in Huairou District, Beijing, aoshang primary school in TANKOU County, Jiangxi, tianzige Xinglong Experimental Primary School in Zheng’an County, Guizhou, Fuwen Township Central Primary School in Chun’an County, Zhejiang, and Tianwen changleping rural education complex in Wufeng County, Hubei, the school running experience and shortcomings are summarized through multi case analysis and triangular mutual evidence, Clarify the basic characteristics and development trend of rural future schools. Finally, it puts forward an effective strategy for the construction of rural future schools in China: building rural schools with multi-level future forms; Clarify the construction standards of rural future schools and carry out professional certification; Provide overall solutions for rural future schools from five aspects: community construction, school climate, curriculum construction, teacher development and student development.

**Keywords:** Rural Revitalization · Future school · Policy · Educational ideal · Educational practice

## 1 Introduction

In recent years, with the acceleration of marketization and urbanization, the development of rural primary and secondary schools in China has encountered many difficulties.

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The gap between urban and rural areas in education infrastructure, vocational training, teacher development and so on has been widening. The specific reasons may include: the source of students caused by the family planning policy; The outflow of rural school-age children caused by rapid urbanization; The increasingly serious aging of teachers leads to the problem of teaching quality; The localization of educational management has caused the problem of the withdrawal and merger of rural primary and secondary schools. Rural education is becoming more and more depressed, and its change needs more level mutations.

Rural Revitalization is a strategic measure to build a beautiful countryside and realize the integrated development of urban and rural areas. Rural Revitalization ultimately depends on talents, and the cultivation of talents depends on education. Rural education is an important fulcrum of Rural Revitalization Strategy, and high-quality education can enable rural revitalization.

To give priority to the development of rural education, we should earnestly implement the strategic plan for Rural Revitalization (2018–2022), truly reverse the current situation of shrinking rural schools, improve the quality of rural schools, and inject more development momentum into Rural Revitalization with high-quality education.

In the current era, what is the quality of rural school education? How should we help rural children? How to help rural schools? What kind of educational experiences should schools, families and communities give children in order to be effective and lasting? We believe that building rural “future schools” may be an effective solution. This paper makes an in-depth study on the construction status of China’s rural “future school” from the multiple perspectives of history and reality, ideal and practice, and tries to answer the above questions, so as to provide professional reference for all social parties concerned about the development of rural schools.

## **2 Exploration and Experience of Rural School Construction in China**

### **2.1 Development and Experiment of Rural School Construction Before 1949**

At the beginning of the 20th century, China’s rural society was already desolate and devastated. After the 1920s, under the influence of the western rural education movement, educators such as Tao Xingzhi [1], Liang Shuming [2], Yan Yangchu [3] and Huang Yanpei [4] carried out an experimental activity of building villages and rejuvenating the country with rural education as the focus (Table 1).

The large-scale rural education and rural school construction movement active on the stage of Chinese modern history in the 1920s–1940s is a historical topic of great research value. A group of educators, represented by Tao Xingzhi, Liang Shuming, Yan Yangchu and Huang Yanpei, who were concerned about the country and the people, had a sense of social responsibility and historical mission, and strove to seek and explore the way to revitalize China’s rural education with different ways of thinking and practice. Their thoughts, practices, experiences and lessons on rural education construction still have important practical and reference significance for today’s rural school construction.

**Table 1.** Typical Experiments of Rural School Construction in China in 20th Century

Experimenter	Time (Year)	Experimental site	Established rural schools	School running idea	Characteristic
Tao Xingzhi	1927	Nanjing, Jiangsu	Nanjing Xiaozhuang Normal School	“Life is education”, “society is school”, “integration of teaching and doing”, “working hard on labor” and other “life education theory” systems	Cultivate “living rural teachers” with “farmers’ skills, scientific mind and the spirit of transforming society”
Liang shuming	1931	Zouping, Shandong	Village school, township school and Township Agricultural School	Through rural education, carry out rural construction, so as to realize the reconstruction of Chinese culture and national self-help	Abolish the westernized school system and endow the school organization with the function of taking responsibility for education, administrative affairs and rural affairs
Yan Yangchu	1930	Dingxian County, Hebei Province	Rural Education Institute	China’s major problems are the “four major diseases” of poverty, ignorance, weakness and privacy. We should run civilian schools and realize the “six overall construction” of politics, education, economy, self-defense, health and etiquette and customs in rural areas	First teach literacy, and then implement the “four major education” of livelihood, literature and art, health and citizens.cultivate knowledge, productivity, strength and unity, so as to create “new people”

## 2.2 Exploration of Rural School Construction After 1949

After the founding of the people's Republic of China, under the correct leadership of the Communist Party of China, earth shaking changes have taken place in rural construction and the development of rural schools. However, since the middle and late 1990s, especially since the beginning of the new century, China's rural education has begun to shrink. According to the statistical yearbook of the Ministry of education, the number of rural primary schools nationwide was 512993 in 1997 and 160148 in 2019. The total number of schools decreased by 352845, a total decrease of more than 2/3. As a result of large-scale school mergers and acquisitions, the average distance between rural primary schools and students' homes is 5.4 km, and the average distance between rural junior middle schools and students' homes is as far as 17.47 km, which deviates from the principle of "Nearby Enrollment" advocated by the state.

Specifically, after the withdrawal and merger of rural primary and secondary schools again and again, China's rural primary and secondary schools not only greatly reduce the number, but also it is difficult for rural education to play its due function in terms of completing the mission of national basic education. It is a generally recognized fact that China's rural education has gradually bid farewell to the traditional pattern of "primary school does not leave the village, middle school does not leave the team, and high school does not leave the community" in the 1970s. Now there is a pattern of "crowded cities" and "weak villages". In short, the model of "one village, one school" to solve the problem of children entering school nearby has entered history since then. A large number of farmers' children have poured into the county to go to school by buying and renting houses, and the decline of rural schools is accelerating. "In remote mountainous areas, schools are the center of a village. It can preserve the integrity and cultural heritage of the countryside. Without schools, the countryside can only be abandoned."

On April 25, 2018, the State Council issued the guiding opinions of the general office of the State Council on Comprehensively Strengthening the construction of rural small-scale schools and township boarding schools (hereinafter referred to as the Guiding Opinions). With regard to Comprehensively Strengthening the construction of these two types of schools, the guiding opinions put forward more than 10 specific opinions, including overall layout planning, improving school running conditions, strengthening teacher construction, strengthening fund guarantee, improving school running level and strengthening organization and leadership. For the shrinking rural education, the introduction of this document is very timely and necessary.

School construction in the 21st century, whether the construction of new schools or the transformation of old campuses, from space environment design to curriculum teaching orientation, all point to the same goal - the future. We often hear about "future school construction", but these future schools are almost all located in cities with rich educational resources. For villages with scarce educational resources, building future schools with beautiful environment, new ideas and more resources is like an educational dream.

### 3 Review on the Development Status of “Future School” in China

#### 3.1 Definition of Future School

##### 3.1.1 The Definition of “Future School” in the Global Context

The term “future school” first appeared in the United States. In 2006, Philadelphia school district and Microsoft jointly founded the world’s first “future school”. “Future school” aims to cultivate new talents, supported by modern educational information technology means, and cultivate talents who can adapt to the future social development through personalized learning and teaching activities.

As for future schools, many countries and regions have made various theoretical and practical explorations, especially taking the “International Conference on future oriented schools” held by OECD in Rotterdam, the Netherlands in 2000 as the turning point, coupled with the promotion of the book “future oriented schools” [5] published after the conference, almost at the same time, many countries such as the United States, Australia, Japan, Singapore, Finland and India have opened the prelude to future schools one after another.

After more than ten years of development, reform and innovation, the world economic forum released a white paper entitled “future school: defining a new educational model in the era of the fourth industrial revolution” on January 14, 2020 [6]. The white paper proposes the “education 4.0 global framework” to redefine high-quality learning in the new economy, Call on the global education system to realize the eight keys of learning content and learning experience (attach importance to the skills training of global citizens; attach importance to the innovation and creation skills training; attach importance to the technical skills training; attach importance to the interpersonal skills training; emphasize personalized and autonomous learning; emphasize accessible and inclusive learning; emphasize problem-based and cooperative learning; emphasize life-long learning and self driven learning transformation, showing the unique mode of educational innovation, relevant mechanisms to promote educational innovation, current achievements and achievements influence.

##### 3.1.2 The Connotation of “Future School” in Chinese Context

Future schools are also called “3.0 schools” and “global good schools”. It is the first educational innovation in Zhongguancun No. 3 primary school, a public school in Haidian District, Beijing, in 2012. It is a Chinese program for the overall reform of school education in the world. Liu Keqin described in his book, “the future is not the place we want to go, but the place we want to create now. In today’s era, we must educate our children in ways that people didn’t know before, so as to prepare our school in a way that suits the future” [7].

As a leading research institution for future school construction in China, we have reclassified the development form of global schools: 1.0, that is, schools in the agricultural era; 2.0 is the school of the industrial age; 3.0 is the school of the future era. “Global good school” is a school that redefines learning, redefines teachers, redefines schools, and constructs multiple learning relationships. We believe that the future school should have three values: first, real learning. It is to let children learn to solve real-world

problems in real learning situations, acquire knowledge, acquire skills, enrich communication and form quality in the process of completing real-world tasks. Second, school education community. School education should be for the past, present and future of each member of the school education community, and each of them is important. Members need to be open and inclusive, learn from each other, respect, help, support and cooperate with each other. Third, the children next door. We advocate cooperation and win-win results between families, between classes, between schools, between regions, and between countries. 3.0 framework and priorities of school education community: first, quality teachers. Teachers are not only the key to the quality of school education, but also the primary to do a good job in educational public welfare; Second, a loving, healthy and sustainable family, school and community environment; Third, a safe and environmentally friendly physical environment; Fourth, the high expectation of real learning curriculum, teaching and learning, and the support of performance evaluation.

### 3.2 Domestic Research on Future Schools

Since 2014, the number of articles on future schools in China has increased at a double rate, and the research content is mostly concentrated in primary and junior middle schools. Researchers have been paying more attention to the reform of “learning space” and “curriculum system”. On the whole, the future school emphasizes individuation, openness and sharing from the educational concept; From the perspective of learning space, it emphasizes the integration and intelligence of space; In terms of teaching and learning methods, it emphasizes personalized learning serving students; Focusing on the development of students’ core qualities and key abilities from the perspective of curriculum system, emphasizing curriculum integration and personalization; Emphasize precision and openness in organization and management; From the perspective of learning evaluation, it emphasizes all factor evaluation and multi-agent evaluation, hoping to provide reference for subsequent practical exploration [8].

Zhu zhiting et al. (2018) summarized the characteristics of various future schools from six aspects: educational philosophy, curriculum setting, teaching organization, learning methods, learning space and technology through the panoramic international research and the analysis of typical cases such as ALT school, Khan experimental school and other new technology schools, virtual schools, stem curriculum schools, Da Vinci schools, “wild learning” schools and MTC schools, It also expounds the main innovative strategies and successful design modes adopted by the school in the future [9]. The future school: redefining education by Zhu Yongxin (2019) is a masterpiece on the research of the future school. He describes the vision of the future school: there is no fixed classroom in the future learning center, and each room needs to be reserved; There is no leading organization centered on the “principal office” and “administrative building”. On the surface, it looks more like today’s entrepreneurship incubator in Beijing, Shanghai and Guangzhou; It can be in the community, on university campuses, or even in training institutions; There are no unified teaching materials, open all day, no weekends, winter and summer holidays, no time to go to and from school, and no school system; Teachers are the guides and companions of autonomous learning, and some teachers will become freelancers [10]. The future school from the perspective of pedagogy written by Wang Yuxuan et al. (2020), based on the background of the digital era, traces the rise of the

future school, prospectively and systematically explains the theory and expected scene of the future school from the unique perspective of pedagogy from the eight aspects of implication, teachers, curriculum, teaching, learning, classroom, evaluation and management, and summarizes the rise, development trend and characteristics of the future school [11]. The book “future school movement outside the window - the exploration of American educational informatization by 17 Shanghai Teachers”, edited by Li Yongzhi (2021), is a summary of the investigation results of the “special seminar on international vision and innovative development of educational informatization” in Shanghai. It analyzes the innovative methods of future education and the basic experience of informatization application, and pays attention to the future school construction in learning space, learning methods, curriculum system. The collaborative innovation of educational technology and organization management has certain guiding significance for the construction of intelligent campus in the future [12]. Cao Peijie (2021) used international comparison and case analysis to analyze typical cases such as HTH school in the United States, vittra Telefonplan school in Sweden and Ecole 42 school in France, revealing that schools will move from “mass production” mode to “private customization” mode in the future, and provide students with personalized learning experience through the integration of space, curriculum and technology. There are three trends: breaking the factory workshop classroom layout, increasing the openness and flexibility of learning space, and supporting teachers to carry out creative teaching activities; Advocate project-based learning based on interdisciplinary and build a comprehensive curriculum system; Use Internet thinking to transform education, dismantle the “wall” between schools and external society, and promote schools to move from three foot podium to borderless learning [13].

Integrating the views of various scholars, the characteristics of “future school” in China mainly include four aspects: first, the architectural and spatial characteristics of future school. Breaking the traditional concept of classroom, the future school buildings will provide unlimited possibilities of interactive space, integrate formal and informal learning environments, and create a future classroom convenient for social interaction, discussion and sharing. Second, the curriculum characteristics of future schools. Establish a characteristic, diversified and comprehensive curriculum system, implement the diversified construction of steam education, art and physical education courses, and cultivate students’ innovative thinking and ability to solve practical problems. Third, the learning style characteristics of future schools. Students are the subject of education, not the object of education. We should change the traditional indoctrination teaching mode, change the learning methods by using cooperative learning, mixed learning and in-depth learning, combine the new learning methods with future teachers, and build an interactive and efficient modern curriculum through life-oriented, game oriented and social learning. Fourth, the characteristics of the organizational management form of the future school. In the future, the organizational management form of the school will break the rigid educational system, optimize educational technology and organizational form, make rational use of funds and energy investment, and give full play to the enthusiasm, initiative and creativity of teachers, students and managers.

### 3.3 Reform and Practice of Future Schools in China

The construction of future schools is not only an important proposition of education in the new era, but also a new topic of educational science research in China. In 2013, the Chinese Academy of Educational Sciences officially launched the “China’s future school innovation plan” and established the future school laboratory. Based on scientific research and based on the cultivation of innovative talents, it uses information means to promote the structural reform of school education, promote the integration and innovation of space, curriculum and technology, and provide theoretical guidance and practical guidance for the overall innovation of the school. The plan has received enthusiastic response and extensive support from primary and secondary schools around the country. More than 400 schools have established the “China future school alliance” covering the whole country. Focusing on the five aspects of “learning environment, teaching technology, teaching and learning methods, school organization and management, and curriculum implementation”, it plans to build 10 future school demonstration schools, 100 future school project schools and 1000 future school alliance schools to carry out classified experiments and research. In November 2016, the third China future school conference was grandly held in Shenzhen. The white paper on China’s future school was released for the first time. It solemnly proposed that the implementation of the future school plan is imperative, comprehensively and systematically described the basic characteristics of the future school, and focused on the practical path of China’s future school plan.

Following the release of the white paper on China’s future school in 2016, the future school laboratory of the Chinese Academy of Educational Sciences released China’s future school 2.0: conceptual framework in November 2018, which comprehensively examined the core concepts such as “school”, “learning”, “classroom” and “learning path” and put forward a new understanding. On January 10, 2020, the “China’s future school 2.0 innovation plan” formulated by the future school laboratory of the Chinese Academy of Educational Sciences was officially released [14]. The main contents include: clarifying the concept system of the future school; Develop the curriculum system of future schools; Explore the classroom form in the era of intelligence; Develop a comprehensive student evaluation method based on big data; Constructing the framework of future teachers’ ability; Explore the future school governance model in the era of intelligence; Create a future oriented learning space; Build the future school and develop a new ecology. It defines the direction and provides a method guide for the future school construction after 2020.

In addition, on June 19, 2015, Beijing Normal University released the “2030 China’s future rural school plan”. The plan is based on rural schools, with Peter Guided by the theory of systematic change, Mr. Shengji helps rural principals have the thinking and leadership of systematic change by empowering rural teachers and principals, so as to lead the reform and development of schools, help rural teachers improve their initiative, innovation and professionalism, help children create their own future and help schools gradually form endogenous reform and development ability, Finally, promote rural schools to become a paradise - a paradise for children to better move towards their future life. “2030 China’s future rural school plan” plans a 15-year “ten million project”: establish 100 “2030 plan” demonstration schools, build 1000 successful future rural



schools, radiate 10000 rural schools, and start future oriented changes. In the process of implementation, it will have a positive impact on the healthy growth of hundreds of millions of children and adolescents in China.

In short, China's current theoretical research and practical exploration on the future school mainly focus on the central education and scientific research institutions and first-class normal universities, and has made some achievements. However, there are also some problems, such as the dislocation and imbalance of the relationship between technology and education, the confusion between the future school and the future education, and the unclear attribute of the future school. The root cause is that scholars still lack the concept and cognition of future schools, and there are still deficiencies in front-line practical methods. Therefore, it is urgent to strengthen the specific research on local future schools.

## **4 Multi Case Study on the Construction of Rural “Future School” in China**

Mr. Yang Dongping mentioned in the value and construction of rural small-scale schools, “China’s school education is bound to move towards rooted education, organic education and green education. This change is likely to start from rural areas and small-scale schools. If we really establish a number of modern small-scale schools in rural areas, it may become an innovative model of China’s education reform, promote cities and carry out a new educational modernization movement of rural encircling cities” [15]. Therefore, a rural school, through the co construction, CO governance and sharing of modern rural schools, should become the rural education center, cultural center, health center and Information Center, so as to walk out of an educational road of Rural Revitalization.

### **4.1 Case Study Design**

At present, more than 400 schools have joined the “China future school alliance” of the Chinese Academy of Educational Sciences, but few schools really meet the school running philosophy and characteristics of the future school, especially the rural future school. In order to better grasp the practice of rural future schools in China, this study also adopts the methods of in-depth interview and participatory observation, selects five typical rural “future schools” in China, and deeply excavates their construction and development characteristics.

Triangular cross certification is a method to ensure validity in qualitative research. This method can be used to test different data sources or different data collection methods. The basic principle of triangular mutual evidence method is to collect relevant observations and explanations from multiple angles or positions, and compare them. The “triangle” of this study includes the school development text, the principal (or vice principal) and teachers, so as to verify and verify the development ideas, organization and behavior of the case school, and finally form reliable case analysis data.

The case study data collection of this study follows three principles: first, use a variety of evidence sources; Second, establish a case study database; Third, form a

**Table 2.** Characteristics of Interviewees

Code	School	Gender	Name	Position	Time
A	Beijing Huairou Jiuduhe primary school	male	Yu**	Principal	2021/09/10
B	Beijing Huairou Jiuduhe primary school	male	Sheng**	Teaching director	2021/09/10
C	Jiangxi Tankou Aoshang Primary School	female	Xie**	Principal	2021/09/20
D	Jiangxi Tankou Aoshang Primary School	male	Li**	Chinese teacher	2021/09/20
E	Guizhou Zhengan tianzige Xinglong Experimental Primary School	female	Xiao**	Principal	2021/09/30
F	Guizhou Zhengan tianzige Xinglong Experimental Primary School	male	Zhang**	Mathematic teacher	2021/09/30
G	Zhejiang Chun'an Fuwen Township Central Primary School	female	Jiang**	Principal	2021/10/10
H	Zhejiang Chun'an Fuwen Township Central Primary School	male	Wang**	English teacher	2021/10/10
I	Hubei Wufeng Tianwen Changleping rural education complex	male	Gao**	Group president	2021/11/05
J	Hubei Wufeng Tianwen Changleping rural education complex	male	Wen**	School director	2021/11/05

series of evidence chains. And try to collect six sources of evidence: documents, archives, interviews, direct observation, participatory observation and physical evidence.

The semi-structured interview program is adopted to adjust the content of the interview according to the specific situation of the researcher before entering the study. According to the case design, two principals and two teachers from five case schools were interviewed. Through face-to-face interview and participatory observation, collect the relevant institutional texts of the school, find out the context of the development of the school, the current situation and development characteristics of the governance function, and provide real and vivid raw ecological materials to support the research point of view (Table 2).

## 4.2 Typical Case Analysis

### 4.2.1 Beijing Huairou Jiuduhe Primary School

Jiuduhe primary school is located in Jiuduhe town in the southwest of Huairou District. The town covers an area of more than 180 square kilometers and has 19 administrative villages with a population of more than 20000. Founded in 1992, the school currently serves all school-age children in six administrative villages and enterprises and institutions in Jiuduhe town. The school covers an area of more than 12000 square meters and a construction area of more than 2900 square meters. The school has 24 teachers and 6 teaching classes. In January 2019, it implemented integrated school running with Beijing No. 11 school and officially changed its name to “Beijing No. 11 school Jiuduhe primary school”. The educational philosophy of Beijing No. 11 school is to focus on students’ growth, cultivate morality and people, make learning happen truly, and cultivate students’ ability of lifelong learning. Adhering to the school running philosophy of the general school, Jiuduhe Primary School of Beijing No. 11 school strives to build a modern rural school with “agricultural” flavor, rich “rural” spirit, strong “learning” and real “doing” school, and cultivate a group of modern rural teenagers with local feelings, Chinese roots and world vision.

Jiuduhe primary school was originally a mountain village primary school, with limited school conditions and insufficient educational resources. By “grafting” the practical achievements and school running ideas of the 11th school, the school has reconstructed flexible learning space, carried out team group reform, developed a series of school-based courses integrated with local characteristics, established a flat governance structure, and multiple stakeholders participate in school governance to continuously optimize the school governance system. Without changing the original teachers, it systematically carried out organizational reform, reshaped the school culture and values, and realized the innovation of management mode and the transformation of school governance.

### 4.2.2 Jiangxi Tankou Aoshang Primary School

Tankou aoshang primary school is located in aoshang village, TANKOU Town, Rongjiang new area, Ganzhou City, Jiangxi Province. The village is a provincial-level poverty-stricken village in Jiangxi Province, with about 2000 villagers. The Management Committee of Ganzhou Rongjiang new area carries out all-round cooperation with the global education community: architectural space and informatization, rural school structure, curriculum development, teacher development, student development, rural school education community, etc. Starting from 2018, it is planned to build aoshang primary school, a small-scale rural school with 111 students and 13 teachers in the autumn of 2018, into a rural 3.0 school, and become an education center, cultural center, health center and information center of aoshang village in three years.

First, project-based “real learning”. As a rural 3.0 pilot school, aoshang primary school advocates real learning, and project-based learning is a kind of real learning. “Real learning” is to let children learn to solve real-world problems in real learning situations, acquire knowledge and skills, enrich communication and form quality in the process of completing real-world tasks. With the bell ringing every Tuesday afternoon, project learning begins. For example, the “sericulture” project can not only enable children to

learn about the morphological changes of silkworm babies, but also gain the emotion of being close to nature and cherishing life. More importantly, it can cultivate students' serious and responsible working attitude, keen observation ability and perseverance. For example, the "baoaimigo" activity not only enables students to inherit and carry forward China's traditional local food culture, but also promotes the communication between home, school, teachers and students, enhances the friendship with neighbors, enhances the cohesion of classes, and cultivates the spirit of unity and cooperation of students, so as to truly integrate schools and families, understand each other and form an educational community.

Second, the rural home school cooperative education model. The holding of "parents' Open Day" not only further strengthens the connection between home and school, constructs the home school cooperative education mode, so that parents can better understand the daily education and teaching management of the school and the students' learning and life in school, but also widely listen to parents' opinions and suggestions on school education and teaching, which not only fully displays the teaching style of the school, but also improves the level of school education and teaching management.

In short, the knowledge, skills and morality needed in the 21st century can only be truly acquired through real learning. Only when teachers have solid pedagogical knowledge and skills, extensive and profound subject knowledge and a deep understanding of the diversity of students' development, can they give meaningful guidance and feedback to support students' deeper learning and guide children to understand life in real learning.

#### **4.2.3 Guizhou Zhengan Tianzige Xinglong Experimental Primary School**

In early 2017, Xiao Shijian, Bachelor of sociology and master of overseas returnees from Peking University, went to Guizhou mountainous area to establish "tianzige Xinglong Experimental Primary School" and stationed it for a long time. Through continuous practice and revision, he gradually created a set of educational concept and curriculum system of "belonging to rural areas and children", and explored "local people-oriented education" with "local · nature · people-oriented · future" as the core [16]. The vision of rural education in Xiao Shijian's heart is not simply to "bring good teachers in", nor to "walk out of the mountains and change the destiny" with children. The children she wants to cultivate are first to understand her hometown, accept her hometown and even be proud of the countryside; They are curious about the universe and fear nature; Full of longing for life and the future, he is a person with considerable autonomous learning ability.

The school building of tianzige Xinglong experimental primary school was built on the site of a temple in the Ming Dynasty. Xiao Shijian built the "ancient building" library with nearly 10000 books, named "Liren hall" by taking advantage of the nine piers left over from the temple and the wood removed from the old house in the village. "Establishing people" starts from the "campus public discussion class". It is actually the discussion and management process of the school. The whole process is presided over and organized by the students. The teachers and students jointly discuss the school affairs. The rotating chairman summarizes the various proposals put forward by the students and teachers and discusses them one by one. After the teachers and students

express their disagreement, they vote, count the votes and announce the results. This practice of democratic management and civic education is deeply loved by the students.

It is not only the “campus public discussion course”. In Xinglong experimental primary school, the teaching process of all courses attaches great importance to students’ subject status, self-awareness and independent experience, advocates interdisciplinary and mixed age research-based learning, emphasizes cooperation, and stimulates students’ willingness to actively participate and interest in learning. Focusing on the concept of “local humanistic education” of “based on local, loving nature, returning to humanism and moving towards the future”, Xinglong experimental primary school has designed a “5 + 1” curriculum system. “5” refers to daily courses, basic courses, axis courses (life, humanistic interdisciplinary comprehensive inquiry courses), common life courses, self-study courses and other courses; “1” refers to action and sharing links such as research and learning activities, Xinglong grand stage and carnival.

From many teaching practices of the school, it can be seen that in the educational form of small schools and small classes, teachers and students of Xinglong experimental primary school take heaven and earth as the classroom, children grow wisdom in the countryside, cultivate ability in solving village problems, and develop responsibility and responsibility in village service. It can be seen that the solution to the decline of rural education in China is not the integration of urban and rural education, but the differentiation of urban and rural education; We should recognize the differences between urban and rural areas, turn the differences into advantages, carry out local education and localized education around the characteristics of villages, and use rural education to drive rural revitalization.

#### **4.2.4 Zhejiang Chun’an Fuwen Township Central Primary School**

Located in the vast mountains of Chun’an County, Hangzhou City, Zhejiang Province, it has attic Castle shape and colorful school buildings, adopts the small class teaching mode of the whole subject package class system created by 1:6 teacher-student ratio, and implements the curriculum with the purpose of life education... Fuwen Township Central Primary School is not only rated as the “most beautiful rural school”, but also regarded as a positive exploration of China’s rural schools towards the future school. After being listed as the first pilot school for the overall improvement and comprehensive reform of rural small-scale schools in Hangzhou in 2016, Fuwen Township Central Primary School has basically formed a rural school with the characteristics of future education through the overall implementation of six measures, such as the transformation and improvement of campus functions, the construction of online learning resources, the training of general practice teachers, the implementation of comprehensive theme courses, the construction of learning home school community and the subsidy for the healthy growth of poor students.

First, the time and space constraints of learning have been completely broken. Students can enter any field, choose any level, and arrange the learning rhythm and progress according to their interests and needs without the limitation of time and space. The standard classroom plus comprehensive special classroom is suitable for students’ subject learning and project learning. The design of public space makes learning time flexible, and mixed age learning can occur everywhere and anytime. Second, a personalized

student growth support system can be constructed. The small class system of full-time teachers makes the interaction between teachers and students more intimate, pays high attention to students' physical and mental health and emotion, and reconstructs the evaluation method with physical and mental health as the core, which fully ensures the support for students' personalized growth. Third, be learner centered and possible. Completely realize the transformation from "learning by teaching" to "teaching by learning". Students can independently choose and effectively push the learning content in line with their own characteristics.

In short, the reform and practice of Fuwen Township Central Primary School not only reflects the value of poverty alleviation through education, but also reflects the foresight and plasticity of rural school construction in the future. Since the school was put into use on February 20, 2019, it has gradually accumulated education and teaching experience in practice, so that rural schools can quickly shorten the gap with urban schools. Fuwen Township Central Primary School is an educational reform to realize the "lane changing overtaking" of rural education, hoping to walk out of a new path of China's rural education through it.

#### **4.2.5 Hubei Wufeng Tianwen Changleping Rural Education Complex**

Changleping primary and secondary school is located in the middle of Wufeng County, Yichang City, Hubei Province. Restricted by geographical and natural conditions, the development of the school with a school running history of more than 70 years has encountered a bottleneck. With the in-depth promotion of rural revitalization, the school after years of vicissitudes has ushered in new opportunities. In April 2019, Tianwen Education Group launched the pilot area project of education assisted Rural Revitalization to build a "four in one" rural education complex in changleping: public welfare trusteeship + research and learning base + online education training + Summer Resort and health care. Since then, the "four fields" have resonated with the same frequency, and rural education is full of energy and booming. Take talents as the fulcrum, consolidate the foundation and cast the soul, and promote rural revitalization.

First, education trusteeship is the "kinetic field" of Rural Revitalization. Since the trusteeship, Tianwen team has integrated with Changle team, rooted the spirit of "seeking" in Changle culture, and provided unlimited possibilities for the development of the school; At the same time, the new curriculum and tools were introduced into Changle education, which gave birth to infinite spring; Accelerate classroom innovation, strive for high efficiency and quality, and provide unlimited space for students' lifelong development. Teachers and students change in action: wonderful curriculum halls, different teacher training modes, future teaching and learning methods Independent education has gradually taken root. Poverty alleviation through education "cuts off" the intergenerational transmission of poverty and cultivates a "power field" for rural education. Second, research travel, the "magnetic attraction field" of Rural Revitalization. Relying on the local rich Tujia culture and rich natural ecological resources, and focusing on the key ability and core literacy education objectives put forward by the state, the research base of Tianwen academy has designed 10 curriculum halls and developed more than 50 courses from the three sections of Tujia folk culture, natural ecological resources and life practice and labor. Life is learning, life is growth, survival is progress, and the

world is school. The most beautiful classroom is on the way. Tianwen academy takes students into nature, society, middle school in practice, thinking and understanding in practice, broaden their horizons, increase their knowledge, have the courage to explore and develop in an all-round way in a happy journey. Tianwen Education Group strives to make the research and study travel platform a national brand of “life and practice” education and a national characteristic research and study and labor base to attract people and gather popularity for Tujia Shanzhai and become a “magnetic attraction” for Rural Revitalization. Third, health training is the “vitality field” of Rural Revitalization. It is planned to invest 430 million yuan and the summer resort and health project of Changle Town covering an area of 150 mu will be started soon. The project locates the cultural community, creates a cultural community, provides a livable and nurturing place for people in the educational and cultural circles, and brings high-quality resources to Changle education and research camp. In this way, it has brought new vitality to education, brought new vision and pattern to human development, and become the “vitality field” of Rural Revitalization. Fourth, Tianwen online education is a “resource field” for Rural Revitalization. Tianwen online education company is registered in changleping, with deep integration of online and offline, benefiting more than 20000 learners in remote areas and allowing them to enjoy fair and high-quality education. For rural areas with relatively poor resources, the network has become a “resource field” of high-quality education. Schools, camps and towns promote and interact with each other, and the flow of people, logistics and resources converge; “Kinetic energy field”, “magnetic absorption field”, “vitality field” and “resource field” resonate, enabling Rural Revitalization.

Through the investigation of five rural “future schools” in China, it is found that environment, curriculum, teachers and management are the key elements to ensure the development of rural schools. The goal of rural future school construction and struggle should be “small and beautiful, small and excellent”. Its positioning should be the “Temple” of modern rural community and become the rural public education center, cultural center, health center, sports center and information center. In this way, it can provide a systematic solution path and starting point for the revitalization of rural areas. Its future development and transformation are mainly reflected in: first, take root in the local area. The growth point of rural future schools lies in the connection between rural culture and community, and make full use of mountain, sea, countryside and rural cultural resources to enable students to cultivate vitality and self-growth in nature, local and community; Second, facing the future, it is an interdisciplinary future course for in-depth learning in multiple forms such as “team group” in the real scene, subverting the traditional class system and focusing on cultivating students’ learning, application, innovation and practical ability for lifelong development; Third, pay attention to students’ learning experience, create a more systematic and personalized experiential environment support for students’ “real learning”, and provide students with situational, social, personalized and lifelong learning methods.

## **5 An Effective Strategy for the Future Construction of Rural Schools in China**

Looking at the development of rural schools from the perspective of future education, rural “future schools” should take a detour and overtaking road based on comprehensive

education reform, so that the value orientation, design concept and service content of schools can meet the requirements of talent training in the future society. The construction can start from the educational concept and architectural design of the school, cover the whole ecology of the school education community, and provide brand-new school education practice and services.

## **5.1 Building Rural Schools with Multi-level Future Forms**

### **5.1.1 Noumenon School**

Build a school physics building space rooted in the community, diverse learning relationships and real learning ecology courses. In the space of ontology school, implement and continuously improve the management and operation of 3.0 school, so as to promote the healthy growth of students, the professional development of teachers and the harmonious coexistence of family and community. The most important thing in school is to learn how to get along with others, and teachers are the builders of learning relations. The real learning ecology curriculum provides substantive content and significance for such learning relationship. Therefore, in terms of school space, we can design the “three rooms, one living room and one bathroom” constructed for multi-dimensional learning relationship and the innovative learning space of six university subject groups, so that learning can take place in the footprint. In the operation and management of the school, realize the 3.0 amoeba and school matrix management of functional departments such as teachers department, students department, curriculum department, school affairs department and development department, as well as schools, middle schools and team groups.

### **5.1.2 Digital School**

Build a dynamic digital learning space, provide technical and resource support for teaching and learning, and provide convenient educational space for work, study and life for every member of the school education community. It includes empirical data collection, analysis and feedback system, CPS system based on BIM and GIS, evaluation system based on the global education community, and digital asset management system based on blockchain and trust mechanism, so as to build an integrated management platform and solve school management and service needs such as school office, safety, teaching and learning, students, learning and learning resources, collaboration and cooperation.

### **5.1.3 Cloud School**

Build a limitless educational space, extend the radius of the connection between the school and society, guide students to continuously explore the future and unknown world by using the latest technical means, and provide n-dimensional learning ways and resources for each member of the school education community. Cloud school is a real support for teachers’ teaching and learning in the context of network and big data. It can connect different resources and schools and learn together with children from all countries in the context of globalization.



## **5.2 Clarify the Construction Standards of Rural Future Schools and Carry Out Professional Certification**

### **5.2.1 Clarify the Construction Standards of Rural Future Schools**

The construction standards of noumenon school, digital school and cloud school are divided into three levels: basic type, standard type and future type. First, the basic rural 3.0 school is to achieve the core concept of the future school with limited investment; Second, the standard rural 3.0 school is to realize the standard quality of future schools with moderate specifications; Third, the future rural 3.0 school looks forward to the foreseeable future of the future school with the top configuration.

### **5.2.2 Carry Out Professional Certification of Rural Future Schools**

Including: 3.0 school certification logo, which is used to provide overall professional certification and authorization for 3.0 schools, and show the global regional span of the certified schools; Construction standard certification mark is used to certify the ecological level of school buildings, architectural design and engineering, environmental design and other school construction related standards; Digital school and cloud school certification marks are used for the direct and interactive empirical data collection, analysis, sharing, feedback and management of people, things, things and space of the certification school, as well as the endowing, development and sharing of value; The operation management standard certification mark is used to certify the standards related to the construction, operation and management of the school's learning organization, student development, teacher development, curriculum development, school ecology and school climate.

## **5.3 Provide Overall Solutions for Rural Future Schools**

### **5.3.1 Build Community Centers and Rural Temples**

Rural future school is the temple of villages and communities, and the builder of learning ecology in villages and communities. The venues, facilities and services of modern schools should be shared with the community. They should not only become children's schools, but also become education centers, cultural centers, science and innovation centers, sports centers, health centers and information centers throughout the life cycle of all members of villages and communities.

### **5.3.2 School Community Ecological and Climate Solutions**

The introduction of the concept of "school organizational climate" pays attention to people's subjective feelings. As an important means to improve the quality of school education and promote the humanistic reform and development of education, it has been concerned by many scholars all over the world [17]. Rural future schools are rooted in natural and social ecology. We need to pay attention to the well-being of each individual development in the school education community and plan for sustainable development based on the overall school ecology and climate.

First, establish a home school joint development committee. The committee can adopt the rotating chairman system, and the members can be jointly held by parents,

school teachers, representatives of communities and social institutions. As the main members of school governance, parents and social institutions participate in school construction, share wisdom, give full play to each other's advantages, establish cooperative partnerships, and promote the common growth of parents and students.

Second, 3.0 amoeba and school matrix management. 3.0 amoeba is to reconstruct the school into a diverse amoeba based on middle school and team groups by changing the organizational ecology of the school. Each amoeba is a relatively independent educational function body, which is endowed with certain management rights and responsibilities. They formulate their own work objectives, plans and schemes according to the mission, responsibilities and standards of the school. The systematic and clear responsibility system of each individual and various amoeba teams is the core. Through the reconstruction of such organization and responsibility, every teacher and employee in the front line can become the protagonist and the person in charge of responsibility. Therefore, from the traditional pyramid management of the school to the active matrix management, to create a responsible and responsible management and operation mode.

### **5.3.3 Course Solutions**

On the basis of meeting the national curriculum requirements, based on the six major curriculum groups of language and Social Sciences, mathematical science and engineering, finance and business, performing arts, visual arts and active physical activities, organize the discipline ecology of the curriculum, discipline calibration, assign responsibilities to people, package learning to groups, coordinate the school, practice the real learning ecology curriculum and performance evaluation with scientific teaching and learning methods, and break through the limitations of the curriculum of world industrial society 2.0 school. "Real learning" is not only the value orientation of 3.0 school curriculum design, but also the practical main line of curriculum implementation. We can create "team group and plate class hours" to transform the space-time structure of curriculum implementation, create a classroom implementation atmosphere of "problems and interaction", and generate teachers' grasp of curriculum implementation of "real task design, learning support and learning evaluation".

### **5.3.4 Teacher Development Solutions**

At present, neither UNESCO nor university institutions have clearly pointed out what a good teacher is exactly like. Therefore, we put forward the definition of global good teachers to provide guidance for the path of Teacher Development: the first is relationships, the second is high expectations, and the third is student voice. Professional support for teachers in the whole development cycle: provide support for the whole development cycle of teachers' career through joint global quality professional third-party institutions; Promote the development of teachers' professional ability through diversified cooperative professional training activities; Stimulate teachers' leadership through 3.0 amoeba matrix management; Build a long-term mechanism for teacher development through a full cycle management platform.

### 5.3.5 Student Development Solutions

The future society will be a society of “free beings value sharing” described in Marx’s capital. In 3.0 school, students will be guided to develop positive behaviors of “having a moment, following the same rules and having a free heart”, so as to help children become “popular, capable and responsible” free people. Cultivate students’ five core qualities (the ability to observe the positive behavior of individuals in public places with multicultural perception; the ability to acquire the knowledge and skills of language, mathematics, science, engineering, technology, finance, law, language and art, healthy lifestyle, etc.; the ability to ask questions and investigate based on knowledge and evidence, the ability to understand the similarities and differences between themselves and others, and the ability to effectively communicate with diverse others; the ability to take action in teamwork to improve innovation) power; The ability to pursue inclusiveness, rules and justice). Five core values of positive behavior cultivation: safety, respect, responsibility, rules and cooperation. Build a common behavior cultivation and support system for school education. Students’ behavior problems are a three-dimensional and dynamic phenomenon and result of the interaction and maintenance of the cultural values, communication mode, educational expectations and educational behavior of the individual and its environment. In the process of coping with problem behaviors, schools, families, communities, professional institutions and other parties need to work together to implement positive behavior support practice, Form an ecological behavior system supported by multiple parties.

## 6 Conclusions

As the wheel of history goes to 2022, we can touch the continuous warming of rural “future schools”. In the new era of artificial intelligence, technological innovation redefines the development trend of education, and economic development puts forward more comprehensive requirements for talents. Facing the test, rural “future school” is undoubtedly an effective solution for China’s rural education to face modernization, the world and the future and realize reform and upgrading. The construction of rural future schools is a systematic project both inside and outside, which will mean collaborative innovation in learning methods, curriculum system, learning space, educational technology and so on. The wisdom of rural future schools is not only reflected in the shining of technical rationality, but also in the blooming of value rationality. The future has come. The rural “future school” is based on the “shoulders” of the past and the present, and will have unlimited development possibilities.

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## References

1. Tao, X. (2017). *China's Educational Reform*. Jilin Publishing Group Co.
2. Liang, S. (2006). *Rural construction theory*. Shanghai People's Publishing House.
3. Yan, Y. (1935). *Mission of rural movement*. Jingcheng Publishing House.
4. Huang, Y. (2019). *On Vocational Education*. Commercial Press.
5. OECD. (2009). *What Schools for the Future*. Educational Science Press.
6. World Economic Forum. (2020). Schools of the Future: Defining New Models of Education for the Fourth Industrial Revolution. <http://www.weforum.org/reports/schools> of the future defining new models of education for the fourth industrial revolution.
7. Liu, K., et al. (2018). *Everyone, three primary schools: The transformation and Transcendence of a school*. China Renmin University Press.
8. Bao, T. (2021). Research hotspot of future schools in China in recent ten years – visual analysis and content analysis based on CNKI journal literature. *Research on Open Learning*, 26(02), 54–62.
9. Zhu, Z., Guan, J., & Ding, Z. (2018). The future school has come: A Perspective of the innovation and reform of international basic education. *Chinese Journal of Education*, (9), 57–67.
10. Zhu, Y. (2019). *Future school: redefining Education*. CITIC Publishing Group.
11. Wang, Y. (2020). *Future school from the perspective of pedagogy*. East China Normal University Press.
12. Li, Y. (2021). The future school movement outside the window – the exploration of American educational informatization by 17 Shanghai Teachers. *Educational Communication and Technology*, (02), 2.
13. Cao, P. (2021). Future school reform: international experience and case study (11), 114–119.
14. China future school laboratory. (2020). China's future school 2.0 innovation plan was officially released. [https://www.sohu.com/a/366163900\\_793135](https://www.sohu.com/a/366163900_793135)
15. Yang, D. (2016). Value and construction of rural small-scale schools *Contemporary Educator*, (02), 77.
16. Xiao, S. (2021). *Future school in the mountains*. People's Daily Press.
17. Moran, Z. S. (2021). Global vision and Chinese framework of school organized climate research. *Fudan Education Forum*, (5).

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