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**Compare the difference between
Outdoor school education
in Italy and China horizontally, and make
suggestions for outdoor education in China**

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Abstract

“Troverai più nei boschi che nei libri. Gli alberi e le rocce ti insegneranno cose che nessun maestro ti dirà” ——Bernardo di Chiaravalle.

Outdoor school education is a way to teach the children how to find the nature, and how to find the real self. It is an open education concept, which guide children doing research and explore in the nature, learn how to foreface the risks and avoid and deal with the risks, learn how to do cooperation and communication with classmates during the class,

In the modern society, the children education has a more mature system in Europe than in China. The lack of outdoor education is the biggest difference between Chinese and European children's education methods. This thesis analyzes the difficulties of outdoor education development under China's education system and China's development national conditions. And put forward some methods that can promote the development of outdoor education in China. Considering the current situation of education in China, the author thinks that the transformation of rural schools is the first step to introduce outdoor education into China. Taking a rural primary school in Guizhou province as an example, this thesis tries to demonstrate the feasibility of this method, and give some transform strategy.

Keywords: Outdoor school education, China education, Europe education, rural school, outdoor school in China, the required for outdoor education, transform strategy

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Chapter 1.

What is the outdoor school education?

1.1 The concept of the outdoor school education.

The National Educational Association's definition of outdoor education in 1970: "Outdoor education is not an independent subject, but a combination of all school subjects, knowledge and skills. However, it does not move all school subjects to outdoor teaching. Instead, teachers use the environment to help students understand the interrelationships of various subjects, environments, and people, thereby assisting the teaching of subjects such as art, science, social studies, or communication."

American outdoor education scholar George Donaldson put forward a concise concept: **Outdoor Education is education in, about, and for the outdoors.**

Outdoor school education is a kind of experiential learning, is a kind of simple and direct learning way, study by expanding the lesson to outdoor. It responds to the closure and overprotection of children's childhood lives in developed societies, and aims to enhance the "outing" (outdoor) experience by assuming the external environment as a training space. The outdoor education is based on the observe learning principle and emphasizes the direct use of sense (like sight, hearing, smell, touch, taste) for observation and perception. Outdoor education can be carried out in any environment: cities, suburbs, nature, based on daily activities, and special activities that require special planning.

Lewis ¹ believes: "Outdoor education is a direct and simple way of learning, which extends the curriculum to the outdoors for the purpose of learning. It is based on the principles of discovery learning and emphasizes the direct use of the senses (sight, hearing, smell, etc.) , touch, taste) for observation and perception."

From the above definition of outdoor education, researchers have studied outdoor education

¹ King, A., Brass, D. & Lewis, P. (2019) *Indigenizing the Academy: Listen to the Stories. Research as Reconciliation*. Toronto. Canadian Scholars/Women's Press.

from different perspectives, and the focus is different. In fact, there are still many concepts related to outdoor education. According to Council on Outdoor Education, the concepts related to outdoor education are: Environmental Education, Conservation Education, Outdoor Recreation, Outdoor Pursuits, Adventure Education, Experiential Education, Camping Education, etc.

According to research by Hammerman (1994) and others, it is proposed in the book "Teaching in the Outdoors"² that outdoor education is a method to achieve the purpose of the course. Its significance includes: (1) 6Extend the classroom to the outdoors for experiments. (2) Understand natural resources and living environment, (3) All students, teachers and outdoor education human resources work together to plan and develop the most suitable teaching environment. And used the following figure (fig 1) to explain the relationship between outdoor teaching venues, school curriculum and teaching goals.

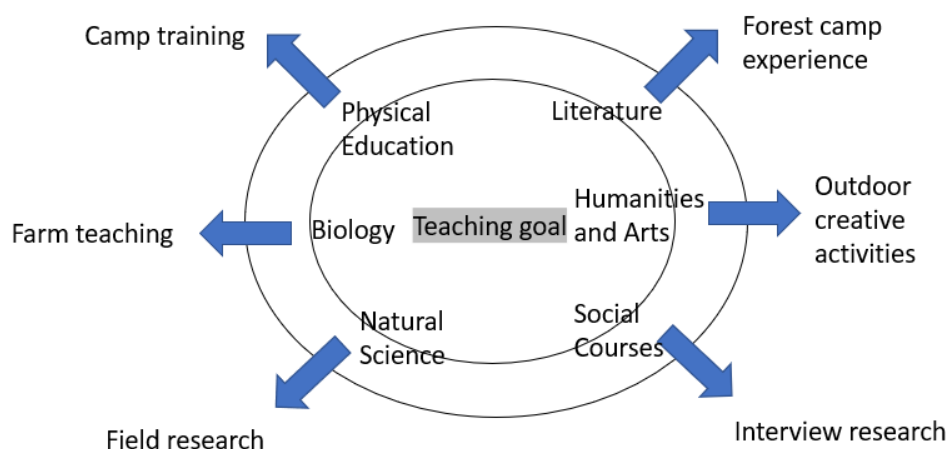


Figure 1. Teaching goals of outdoor education.

About the design of outdoor education activity, it includes the environmental education that learn to understand the relationship of nature and human, and the cooperation with friends,

² Donald R. H, William M. Hammerman & Elizabeth L. H. (2001) .*Teaching in the Outdoors*. Vero Media Inc; 5th edition.

and the adventure education that learn to forecast the dangerous and improve the courage and insight.

1.2 Theoretical support for outdoor education

When conducting outdoor education, the organizer must first provide some systematic basic concepts so that students can think and discover from the process of outdoor exploration. This way of taking into account both the "process" and "results" of learning is a teaching method that emphasizes both discovery and acceptance of learning. The important learning theories related to outdoor teaching are organized as follows.

1.2.1 Toward a Theory of Instruction by Bruner

Bruner emphasizes learning through discovery, a way for students to obtain questions and answers through their own exploration in the learning environment. In this learning method, Bruner advocates teachers should cooperate with students' activities, organize teaching materials appropriately, design various learning situations that are conducive to children's discovery of various structures, and guide students to discover meaningful structures. He proposed to form students' competence motivation which is to give students a motivation to seek competence. This is more effective than traditional direct instillation of knowledge or outdoor explanatory teaching.

1.2.2 Constructivism

Constructivism³ is a new educational concept in the 1980s, emphasizing that knowledge is actively constructed in the process of interaction, consultation and reconciliation between individuals and other individuals. The derived constructivist learning theory emphasizes that students are the subject, and teacher knowledge plays the role of auxiliary guidance (Von Glasersfeld, 1989). The teaching of constructivism mainly focuses on the following points: (1) the design of the learning situation, (2) the adjustment of the roles of teachers and students, (3)

³ Leslie P. Steffe, Jerry Gale. (1995). *Constructivism in Education*. 1st edition. New York, <https://doi.org/10.4324/9780203052600>

the in-depth exploration, (4) the role of peer strength, the movement of cooperative learning, (5) Multi-angle evaluation. It is the spirit of constructivism to allow students to educate in an outdoor environment or a forest environment, allowing them to observe, discover, explore and think through contact with the real environment, and to construct their own environmental concept.

1.2.3 Learning hierarchy

Ford (1981) believes that the teaching of outdoor education should be hierarchical, so he proposed an outdoor learning class. In an outdoor learning process, there are a total of seven learning levels (fig 2) ⁴.

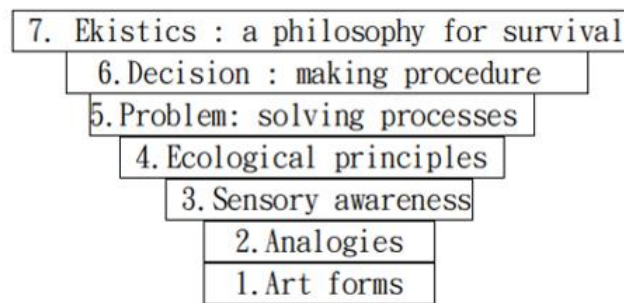


Figure 2. Learning hierarchy

Source: by the website.

In the outdoor education and learning class, the lowest level refers to the perception and recognition of the world environment, and then through transformation, the new experience is combined with the old experience, and the symbolic meaning of the scene is felt through the senses. The first three classes are mainly about understanding and feeling the outdoor environment, which arouses interest in activities. With the understanding of the first three classes, learners can gradually comprehend the ecological principles of nature, and then gradually improve the level of learning. Learners can build a harmonious life between humans

⁴ Ford. P. M. (1981). *Principles and Practices of Outdoor/Environmental Education*, 1st edition pp:53-55.

and the environment based on accurate ecological knowledge and the results of rational thinking.

1.2.4 Cone of experience

Edgar Dale proposed the Cone of experience⁵ model in 1946 to illustrate the process of experience learning. He pointed out that all activities in which students directly participate and use their senses to gain experience will inevitably arouse high learning motivation and interest. He proposed six learning methods with completely different learning efficiency (fig 3).

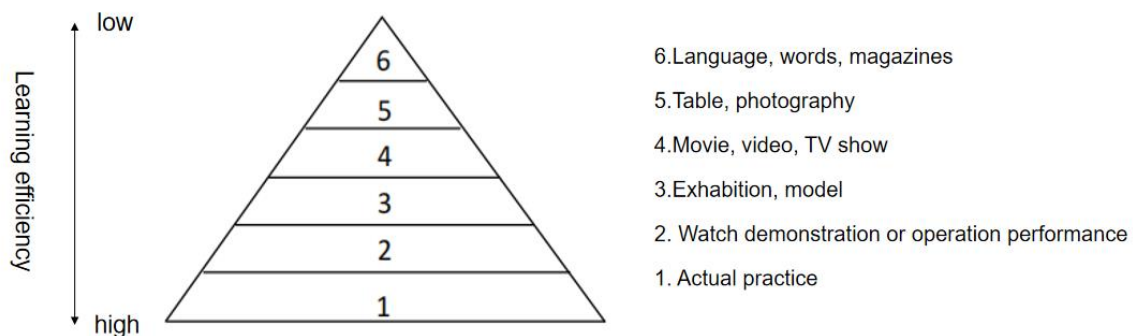


Figure 3. Cone of experience learning method by Edgar Dale

Source: by the website.

1.3 The benefits of the outdoor school education.

Based on the purpose of the outdoor school education, it is important to children, because 7-10 years old is the time to begin to recognize about space, size, distance, environment, number, time, and body condition, children can think logically by the specific matters. Children aged 0-6 will benefit more from outdoor activities: while boys and girls discover and explore, nature can give them great surprises and imagination.

Children are born to find, to research, to catch, so the nature is the best stage to show the natural instincts. They can learn how to foresee the dangerous and how to avoid it, learn to share and

⁵ Bruner, J.S. (1966). *Toward a theory of instruction*. Cambridge, MA: The Belknap Press of Harvard University Press.

cooperate with other friends. Most important thing is that they can touch the nature without distance, and the nature will be the best teacher in their life ⁶.

Experiences that occur in nature can provide psychological and physical benefits, including promoting health, losing weight, reducing the risk of vitamin D deficiency, improving concentration, and reducing learning pressure. In addition, the benefits extend to all subject areas and influence the learning process on a global scale, including improving problem-solving skills, stimulating natural intelligence and divergent thinking, and improving management skills.

Outdoor education is a comprehensive concept that can be used in schools and extracurricular areas, as well as outdoor learning and adventure education. It uses social education disciplines, health, and environmental sciences, is suitable for people of all ages, and is inclusive of participants' own conditions.

In the social part, boys and girls, as well as all learners, will effectively broaden the social scope because of their participation in outdoor education. Outdoor education aims at human development, and provides the possibility of living and learning together with other people and the environment through the basic methods of senses and experience. Finally, outdoor education is suitable for people of all ages. People's creative use of materials is becoming more mature, and the sense of positioning has been strengthened. Therefore, we can measure our abilities based on estimated risks and fears in our hearts to prevent danger.

In such an open game process, the communication between children and teachers and parents is greatly increased. Parents can discover their children's interests and preferences during their children's games, so as to give them positive guidance in future life, and at the same time avoid conflicts with children due to ignorance of the children's likes and dislikes. Also the teachers can

⁶ Blair, D. (2009). *The child in the garden: an evaluative review of the benefits of school gardening*. Journal of Environmental Education. 40(2), pp.15-38.

pay more time with children so that they can know more about them, not only the angle of class, but also the society, humanity, personality, and so on. This is conducive to teachers in the future teaching process to provide each student with appropriate help as much as possible in a targeted manner.

In addition, according to Keith McRae (1990), an Australian outdoor education scholar ⁷, outdoor education has the following values:

- a. Children's sensory experience in outdoor education can enhance learning in all curriculum areas.
- b. Develop more life skills and maintain a correct attitude towards life, which is as important as gaining knowledge.
- c. Cultivating children's awareness of environmental protection is a necessary work to understand the entire human environment.
- d. Students should be exposed to activities ranging from recreational sports to adventure education and participate in challenging outdoor activities
- e. Outdoor education can build children's independence, self-confidence and self-esteem.
- f. Outdoor education can promote the development of children's interpersonal relationships.
- g. The outdoor education environment gives teachers the opportunity to get to know students in different environmental conditions, and to learn more about students.
- h. Outdoor education enables students to enjoy the excitement of exploration and generate direct learning interest and motivation.

1.4 The risk of the outdoor school education.

The biggest safety hazard for children playing in outdoor spaces is personal safety. If children play outdoor, there will be lots of risks that teacher need to assumed and make plan on how to

⁷ Keith McRae. (1990). *Outdoor and Environmental Education: Diverse Purposes and Practices Paperback*. Macmillan Co of Australia.

avoid them or how to deal with them if the risk is really happened during the class.⁸ Children like running, jumping, clamping, and they always eager to try to go to somewhere forbidden and out of teacher's sight. In the city, the traffic risk and road risk are the most serious risks, so generally the outdoor school will be taken on the park or on a suburb where have less cars⁹.

In the forest, the animal, the unknown plant, the rock. They will get in trouble when they are out of sight of adults.¹⁰

⁸ Caesar, B. (2001). *Give children a place to explore*. Child Care Information Exchange,3(1), pp.76-79

⁹ Sandseter, E. B. H. (2009b). *Risky play and risk management in Norwegian preschools- a qualitative observational study*. Safety Science Monitor, 13(1)

¹⁰ Guldberg, H. (2007). *A playground tumble can do you good*. Spiked. Retrieved 17 November 2011, www.spiked-online.com/index.php?site/printable/4077/

Chapter 2.

Overview of the outdoor school education in Europe

2.1 School System in Europe

2.1.1 School system in Italy

The education system in Italy is divided into five main levels: preschool, primary school, lower secondary school, upper secondary school, and university.^[11]

Italy has both public and private schooling. Public education is free for all children who are resident in Italy regardless of nationality. Public school is high quality, equivalent or even higher than private schools.

School is mandatory from ages six to 16. Mandatory schooling is divided into three levels: primary, lower secondary, and upper secondary.¹²

In some regions of Italy, you may find comprehensive schools, known as “istituto comprensivo”, teaching all levels, from pre-school to secondary education.¹³

School Hours in Italy may vary from school to school. For most primary and lower secondary schools, classes tend to be from 8:00 and 13:00, Monday through Saturday. Other schools may only run from Monday to Friday, in which case, students would have a one-hour lunch break and classes until around 16:00.

The majority of students in Italy attend public schools, with private schools taking in as little as 10% of students in the country. If you opt for a public school in Italy, you should expect your child to learn all subjects in Italian. If you want your child to take classes in English or in another language, you should look for international schools or other private schools instead. Alternatively, you can opt for Catholic schools, but expect Catholicism to play a part in your child's education.

¹¹ Middle States Commission on Higher Education (2007), *Student Learning Assessment: Options and Resources*, Middle States Commission on Higher Education, Philadelphia, PA

¹² OECD (2012), *Starting Strong III: A Quality Toolbox for Early Childhood Education and Care*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264123564-en>.

¹³ OECD (2005), *Formative Assessment: Improving Learning in Secondary Classrooms*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264007413-en>.

When it comes to the quality of education, public schools are perceived as having equal or even better performance than private schools. One study even shows public schools in Italy do better in terms of educational and labor market outcomes than private ones.

2.1.2 School system in England

At an age of five, English children start to go to a play school or kindergarten. At an age of eight, they regularly go to a primary school, where they stay for four years. After primary school, the children are now about twelve years old, they go to a comprehensive school for five years. At the end of this period they pass an examination which is called "GCSE Exam".¹⁴

If they have good marks and want to continue for another one year, they can pass the "A-Level Exam". After passing the examinations, they can either go to a university as well as to an advanced technical college or they enter a profession as an apprentice. 7 % of the English children go to a public school after primary school. Public schools are private elitist grammar schools for which you have to pay very much. These students have the chance to go to elitist universities in Oxford or Cambridge.¹⁵

English pupils do not repeat the class, they are always dragged along with the class. In England the lessons begin at 9:05 o'clock and take 70 minutes in general. Between 11.30 and 11.50 o'clock there is lunch-time at school and the students have their meals. Lessons end in the afternoon at about 4 o'clock normally.

2.1.3 School system in Spain

Education in Spain is free. Children have to go ten years to school. First children at the age of three go for two years to a nursery school. At the age of six they go for six years to a primary school. After that, at an age of twelve, children can go to schools where they obtain further education for four years. After this period students could decide between making a vocational

¹⁴ <https://www.brightworldguardianships.com/en/guardianship/british-education-system/>

¹⁵ [UK Education System | Study in the UK \(internationalstudent.com\)](#)

training for two years or the "Bachillerato", which is a preparation for the university. ^[16]

The university system consists of three steps: 1. The first takes three years and is called "Diplomatura". 2. The second step takes three years and is called "Licenciatura". 3. Students, who will reach a doctor's degree, have to make the third step for two years and have to write a thesis.

2.1.4 School system in France

At an age of three, French children start to go to a voluntary all-day school ("école maternelle"). At an age of six, they regularly go to primary school ("école primaire") where they stay five years. After primary school the children are now about eleven years old and go to a "college" for four years. At the end of this period, they pass an examination which is called "Brévet". After passing the "Brévet", they can either go to high school ("lycée") or to a vocational school ("lycée professionnel"). The third alternative is to enter a profession as an apprentice. The vocational school takes two years and high school takes three years. At the end of the last class of high school, they pass the examination "le bac".

French pupils normally stay twelve years in school to pass the school-leaving exam. Teachers make the report with a point system. Number 0 is the worst mark and number 20 the best. The lessons in France begin at 9:00 o'clock and take 55 minutes in general. Between 13:00 and 13:55 o'clock there is lunch-time at school and the pupils have their meals. Lessons end in the afternoon at about 5 o'clock normally.

2.1.5 School system in Germany

The German education system consists of pre-school, primary, secondary, and tertiary education. Full-time schooling is compulsory at primary and secondary levels for all children

¹⁶ Aida Terron, Josep M. Comelles, Medical Anthropology Research Center (1939-1975). *Schools and health education in Spain during the dictatorship of General Franco*.

aged 6 to 15. However, German education generally lasts until the age of 18.¹⁷ Children under three may attend nursery (Kinderkrippen), while those aged three to six may go to a pre-school (Kindergarten/Kita). These are available either mornings, whole days, or even evenings and weekends in some places.

These types of childcare in Germany can be private, public, or church-run, so some are free while others charge fees. These can vary considerably across states and are usually based on income. Many have waiting lists, so put your child's name down as soon as possible. In large cities, you will also find bilingual preschools.

Primary school (Grundschule) is compulsory for children in Germany. A child begins Grundschule in the autumn term of the year they turn six. There are usually four grades or years (1 – 4) in German primary education, although in some regions primary school continues until year 6.

Secondary education in Germany consists of two general phases, although things vary across the different states. There is the lower phase (sekundarstufe I), which in most states takes place between ages 10 and 15/16 (or from grades 5 to 9/10). This is compulsory for all students. The upper phase (sekundarstufe II) continues until students are 18 and is optional. This stage focuses on either vocational training or preparing students for higher education.

All German secondary school students receive formal qualifications after successfully completing their studies. Gymnasium students spend their sekundarstufe II period preparing for the final Abitur examinations needed to get into German universities.

¹⁷ Education, Audiovisual and Culture Executive Agency (2019). *Annual activity report 2018*. Ref.Ares(2019)2255206 – 29/03/2019

STATE	School age	Step 1 (kindergarten)	Step 2 (primary school)	Step 3 (junior high school)	Step 4 (senior high school)	Compulsory age
England	5	Kindergarten (3)	Primary school (4)	Comprehensive school (GCES exam) (5)	Comprehensive school (a-level exam) (1)	5-16
		5-7	8-11	12-16	17-18	
France	3	École maternelle (3)	Primary school (5)	College (4)	Lycée (3) 15-17	6-16
		3-5	6-10	11-14	Lycée professionnel (2) 15-16	
Spain	3	Nursery school (3)	Primary school (6)	Educación secundaria obligatoria(4)	Bachillerato (2)	6-16
		3-5	6-11	12-15	16-17	
Germany	3	Kindergarten/Kita(4)	Grundschule (4)	sekundarstufe I (5)	sekundarstufe II (3)	6-18
		3-6	7-10	11-15	16-18	
Italy	3	Scuola dell'infanzia (4)	Scuola primaria (5)	Scuola secondaria di primo grado (3)	Scuola secondaria di secondo grado (5)	6-16
		3-6	7-11	12-14	15-19	

Figure 4: Education System in Europe

Edited: By the author

Source: OECD (2015), *Starting Strong IV: Monitoring Quality in Early Childhood Education and Care (ECEC)*, Table 4.1, OECD Publishing, Paris, <http://dx.doi.org/10.1787/888933243203>.

2.2 The way how the children learn in Europe.

2.2.1 Indoor.

Children have the regular lesson indoor during the simple semesters. In Europe, the basic idea of education is: education should give children a happy childhood. So, most of the time, for children in lower grades, the teacher will guide the children through completing some designated projects, such as painting and sculpture, to guide the children to understand some truths in the process, rather than through books and cramming education. In class, children can speak freely and argue with teachers and classmates. Children do the tasks with teachers and

classmates, and during that time they can see how the teachers do, learn how to communicate with others, try to express themselves. At the end of a semester, students get different grades instead of final exam results. This is very friendly to the child's physical and mental health.

2.2.2 Outdoor.

In normal classes, children have some opportunities to go outdoors. The teachers give some games and lead the children do the games. In addition, during vacation time, parents will spend a lot of time with their children, and they are more at ease to let their children do some things alone.

In outdoor sports, children are guided to engage in many outdoor sports, such as rock climbing, skiing, or simply playing in the forest. If they are in the forest school, there is no any toys, just the nature. The children need to research and find in the forest, so that they can touch the nature directly and they are free to go anywhere.

Forest school attaches great importance to how to use the four educational resources of air, soil, fire and water in the outdoor environment. In order for young children to develop comprehensively through physical and social activities outdoors, teachers will create different areas for different types of outdoor activities.

Fresh air is beneficial to the healthy development of young children. Teachers build cabins or tents for young children in the forest, where children can play role-playing games. In some forest kindergartens, teachers and children will use the branches of willow trees to weave caves, tunnels, etc. The wicker sprouts and the willow branches are lush, providing an excellent private space for children to play games.

There is usually a grassy hill outside the forest kindergarten for children to climb. Swings are also often essential, because swing-like activities are important to the development of young children's kinesthetic perception.

The outdoor sand area is a very favorite area for children, where children can dig sand pits, build roads or castles, etc., and can also transport the sand to other areas for games. Sandy areas are often equipped with water sources, which are convenient for young children to play.

Fires are also an integral part of outdoor environments. In winter, teachers and young children will sit around the fire to warm up and chat, or bake food together. The fire is usually surrounded by two circles of sleepers or pebbles. The inner circle is where the fire is made, and the outer circle is used to protect young children and keep them at a safe distance from the fire.

Teachers provide toddlers with real tools and teach them how to use them, such as toddler-friendly wheelbarrows, shovels, buckets, and more. These tools are placed where children can freely access them. Teachers also teach young children to sharpen sticks with sharp knives. This is a very favorite activity for young children, it helps to release psychological pressure or tension, and it also provides opportunities for young children to chat with teachers.

In addition, many forest kindergartens also raise animals, such as rabbits, goats, chickens, pigs, etc. The type and number of animals kept depends on the size of the kindergarten. Teachers and young children share the care of animals. Children are naturally fond of small animals, and in the process of caring for small animals, children's emotions and cognition will develop accordingly.

Outside, young children are seen as independent, capable individuals with plenty of hands-on opportunities. At the same time, identifying hazards and accepting challenges is also part of outdoor learning. The role of the teacher is to support and guide children to learn to judge for themselves whether it is dangerous or not. Teachers firmly believe that it is only after experiencing dangers and challenges young children know how to protect themselves and others.

2.3 The outdoor school in Europe

2.3.1 Denmark: 'skovbørnehave' (forest school).

In Denmark, people have always put great emphasis on the outdoors, believing that it can provide people with health, happiness and education. After the 18th century, influenced by Rousseau's naturalistic educational thought, the Danes paid more attention to contact with nature and regarded outdoor activities as a positive aesthetic experience.

Inspired by Froebel's kindergarten in Germany, Søren Sørensen founded a "play and preparatory school" in Denmark in 1854. He publicly appealed: "Children of four or five years old should not be kept in classrooms with stale air. At such a young age, children should enjoy games and sports, especially in the fresh air."

In 1952, Ella Flatau founded the first forest kindergarten - "Wandering Kindergarten". Toddlers who go to school in this kindergarten gather at one location every morning and then set off for a long day walk in forests, fields, etc. At the end of the day's activities, the children meet again at the meeting place in the morning, waiting for their parents to pick them up.¹⁸

Forests cover 12.7% of Denmark's land area. In this vast forest classroom, teachers teach almost everything: such as how to make a campfire, how to climb trees, how to use sharp knives to cut up food.

¹⁸ Education Scotland Foghlam Alba. *Outdoor Learning Practical guidance, ideas and support for teachers and practitioners in Scotland*. www.educationscotland.gov.uk.

The school will arrange all the PE classes in the first week of winter in the forest. Not only that, it's not unusual for children to be taken to the forest or the lake by their teachers in class. The two teachers drove with more than ten students, and we either ran in the forest, or picked up leaves, stepped on puddles, and climbed up and down in the forest.



When we met flowers and plants that interested us, the children could ask the teacher questions at any time. There is no one type of 'forest school' in Denmark, each setting varies depending on where it is situated (in a rural, semi-rural or urban area) and according to the people using it (pedagogues, children and parents). No two are the same. There are settings that are situated in woodland, usually referred to as forest or nature kindergartens.

Danes, who consider themselves forest-raised, regard contact with nature and taking part in as many outdoor activities as possible as a positive aesthetic experience. They believe that all life experiences and basic life skills can be learned while playing in the forest.

2.3.2 Norway

In Norway, the whole society is willing to create such an environment for children to spend a happy childhood, and it has become the consensus of the whole society to build a kindergarten in a place with mountains and water. Norwegian kindergartens try to use wood to build a variety of outdoor equipment, such as swings, slides, tables,



sand pit fences, etc. Tree stumps are ready-made benches, dead wood is natural teaching tools, and some kindergartens even use wood for the main part of the car and cart children ride. The

ground is just dirt, covered with sand and gravel to match the environment¹⁹.

Every parent must prepare a set of weather-proof clothes and a pair of waterproof shoes for their children when they enter the garden, so that they can carry on outdoor activities as usual when it rains. There are fluorescent strips on the outside of the clothes. Even when the light is not good, teachers can use the reflection of fluorescence to find the children in time to ensure the safety of children in sports.

2.3.3 Germany

In Germany, outdoor education is a simple and direct way of learning outside school. It is based on the principles of discovery learning and inquiry learning, and emphasizes the direct use of senses to contact and understand nature and society. Outdoor learning in Germany is diverse. Groups such as walking and roaming, school



trips, reconnaissance, hiking, lectures and research and study Tours are all part of outdoor learning in Germany. In addition, outdoor school is also the main form of task for German teenagers during the holidays. Students can go hiking and exploring for about three weeks to investigate the flora and fauna of the surrounding environment and finish their task with a report.

2.3.4 Finland

Finland is covered with snow for nearly six months. The days are short and the nights long. It breaks at about 10 a.m. and gets dark at 4 p.m. In Finnish kindergarten, it's crucial: children have 3-5 hours of outdoor activity every day, rain or shine, snow or ice, and the only thing that

¹⁹Mark Leather. University of St Mark & St John (2018) *A critique of "Forest School" or something lost in translation*. Journal of Outdoor and Environmental Education. 21:5–18.
<https://doi.org/10.1007/s42322-017-0006-1>

stands in the way of outdoor activity is courage and determination. Wear outdoor clothing and equipment that protect you from wind and rain.

In Finland, hundreds of kindergartens offer nature-themed activities. In some Finnish kindergartens, five -and six-year-olds spend 80%

of their time in the forest. Even snow and ice are considered a bonus for Finnish children, who can ski, skate, build snowmen, have snowball fights and seize the short daylight hours to play outside.



2.3.5 France

Children often participate in outdoor nature classes organized by the school, conventionally called "Green Classroom". This is the most common way of teaching in France, usually involving a few pleasant days in the countryside, led by a teacher, accompanied by a handful of volunteer parents.



The course requires as much exposure to nature as possible, such as a farm or a provincial nature park, to learn about domesticated poultry, wildlife and plants. The schedule is usually divided into two parts: math and geography in the morning in a temporary classroom or outside, group lunch is followed by a full afternoon of pure nature activities such as a walk in the woods.

It's more like an exciting adventure for kids. Start thinking and planning long before you leave, such as: understanding and preparing for the new life environment; Discuss with your friends whether it's acceptable to find things (spiders, lions...) that you might find DIY personal items. Games to play on the train, books to read, everything needs to be ready before departure.

2.4 What is the character of the parents during the children's education?

The parents are like the teacher, or a mirror, and friends. Children have the incredible study ability, and they stay with their parents for a very long time, so they will observe what the parents do and imitate the actions. Parents need pay attention to their daily words and deeds. Parents is like a leader in the children's life, they give lots of choose to children to let them realize which is their most interested in.

But parents are most like the friends with their children, they can play the same game with their children, they can talk with them, listen the advice from them, answer every question from them patiently or lead them to think independently. So that children are willing to share more ideas and thoughts with their parents, and they think they are respected at home. It is beneficial to make a good connection between parents and children.

2.5 What is the difference of the education between the children and the teenagers when they are growing up?

Since children are guided to discover all kinds of different things from an early age and find a profession they are interested in, they are keen to feel everything in the world, rather than sticking to the knowledge in books, so they can get more sparse field. The society gives them plenty of time and opportunities to make professional choices. Once they have made a choice, they can enter the relevant school for in-depth study. At this time, their right to choose is completely equal.

But when children grow up and they enter professional colleges, they will study a career more professionally, which is conducive to making contributions to society in the future. Therefore, professional colleges have high requirements for graduates. Only when you truly understand your chosen major, you can officially graduate and enter society. So it can be say like it is easy to get into a college but hard to graduate.

However, there is one thing can not be changed is that the interest is the best teacher in the

life. Since children have developed the habit of independent and active learning since they were young, they can adapt to such a learning environment in a highly professional university and complete their studies through independent thinking and independent learning.

In my opinion, this is a very scientific and reasonable phenomenon. Because children in childhood are more suitable to obtain truth from the exploration of running and jumping, and to take the initiative to obtain abilities from the rich environment. They are more suitable for acquiring knowledge from books when they grow up. Don't let the children sit down too early to accept the knowledge given to them by adults. This will kill the children's imagination.

2.6 What do the architects do to improve the environment of school.

2.6.1 Non-essential spaces and the infrastructure.

In fact, designers and architects rarely participate in the design of some non-essential spaces, such as school square and school garden, because their purpose is not to design the school as a place with biodiversity or experiential learning. But the school garden and infrastructure are really important in a primary school. Because children is willing to go outside during the after class period,

2.6.2 School gardens.

When architects design schools, they often pay attention to the internal space of the building and the connection between the building and the external environment, and design as much green space as possible for the campus. Therefore, there are often many gardens in schools, but there are very few parts that people can touch at close range. This part needs to be designed and utilized.

Chapter 3.

Overview of the outdoor school education in China

3.1 What is the outdoor school education looks like in China now?

In July 2001, the Ministry of Education issued the "Guideline for Kindergarten Education (Trial)", which proposed to "carry out a variety of outdoor games and sports activities, cultivate children's interest and habits in participating in sports activities, strengthen their physical fitness, and improve their ability to adapt to the environment. "In 2012, the Ministry of Education issued the "3-6 Years Old Children's Learning and Development Guide", which stated that "to ensure children's outdoor activity time and improve children's ability to adapt to seasonal changes. Children's daily outdoor activities are generally not less than two hours, of which The time for sports activities is no less than one hour, and the seasons must be adhered to." This regulation is for children in kindergartens. Up to now, some changes have taken place in the teaching mode of kindergartens. But what is worrying is that once a child enters elementary school, he enters a modern education system that cannot be changed.²⁰

The existing outdoor education in China is not very popular, and the target population is not children, and most of them are quality education for adults. Contains several categories of quality development, hiking, and extreme sports. Among the existing outdoor education camps in China, a small number of camps have carried out parent-child projects. Parents can lead their children to participate in outdoor sports projects. The purpose is to enhance the children's quality in all aspects while also enhancing the relationship between parents and children.²¹

Although outdoor education is a new term in China, its development in China has been extremely rapid in recent years. The following factors are behind its huge market demand:

The influence of national policy -- family planning policy, which relieves a large part of the population pressure for us, but has many disadvantages. Under the influence of One Child Policy, the growth of the only Child in the society has encountered various practical problems,

²⁰ <https://www.chinaeducenter.com/en/cedu.php>

²¹ Zhu Jiaxiong. (2009). *Early Childhood Education and Relative Policies in China*. International Journal of Child Care and Education Policy volume 3, Published: 20 February 2015 .pp:51–60.

such as excessive indulgence from the family, resulting in obesity, poor physical fitness, increased psychological problems, reduced thinking initiative, lack of individual innovation and creativity impulse, weak social skills, weak willpower and so on.

The disadvantages of traditional school education, in the face of the pressure of college entrance, the traditional school education almost only pays attention to the students' course results and neglects the most important part of school education --moral education and critical thinking. Moral education is educating students, guiding students how to become a "person" rather than an examination machine, and critical thinking is a spirit that dares to challenge "authority", which is conducive to innovation and promoting social progress, but the traditional school education does not encourage these.

The rise of China's outdoor industry in recent years has made the first generation of outdoor players realize that nature is a very ideal classroom, which can teach them a lot and will bring their children into the ranks of returning to nature.

3.1.1 Outward bound training.

Quality sports is a teaching mode that is most similar to the concept of children's outdoor education. It is usually led by a professional team to participate in a training camp for two days and one night or three days and two nights in a special outdoor camp on the outskirts of the city. Arrange various game tasks in the training



process, and achieve some training goals by completing the tasks. The purpose of the training camp is roughly as follows: exercise mental quality, exercise physical fitness, and cultivate a personal sense of collective honor. However, it is generally used as a project for the company's holiday training staff. I think it's because modern young people lack this part of education as

they grow up. At the same time, this is also conducive to fostering a tacit understanding between colleagues, and is conducive to improving work efficiency on weekdays.

3.1.2 Camping.

Elementary school camping activities usually occur on a certain festival. The whole class and the teacher go to a nearby park, set off in the morning, bring snacks, play some games in the park, and spend a day in the park with the classmates and the teacher. After the end, the students return to school collectively and end school on time. This is the most suitable activity for outdoor education in China's current school education. At the elementary school level, about a school year, the school organizes a camping activity. Every child is looking forward to this day.



Another way is parent-child camping. On weekends, parents take their children and are led by a professional team to camp on the lawn or forest in the suburbs. Generally, there are specific camping bases for such activities. Almost all camps that include children are parent-child camps, and there are very few camps where only the children themselves participate.

3.1.3 Summer camp

There are some specialized organizations that organize summer camps for children, but there are still many differences between them and outdoor education. The purpose of summer camp is to allow children to develop in all directions, but the first thing to do is to ensure the safety of children. Therefore, many summer



camps organize children to play games indoors or on the playground, so that children can experience the feeling of abandoning books and having fun. Many children like to participate in summer camps, where they can make many good friends, mainly because they can always have partners to play with them. It doesn't matter what you play, just don't go to the cram school. However, outdoor education, which requires the accompany of parents in many cases, is difficult to be accepted by most families in China. The obstacles are not because of ideology, but because of the oppression of real life.

3.2 Why it is hard for Chinese to accept the outdoor education?

Outdoor education is an internationally advanced education method, but it has not been popularized in China, and even this kind of education system is rarely known. There are two reasons for this. The first is that the Chinese people's educational concepts are influenced by the traditional methods of education in ancient times, and it is relatively difficult to change them in a short period of time. The second reason is that the current education system makes children and their parents very nervous about their children's learning. Not only do children have to bear a lot of learning pressure, but parents also shoulder more social and educational responsibilities. It is difficult to get out under high-intensity pressure, so naturally there is no time to take care of the emerging education system. Now I will talk about China's traditional education methods and the status quo of China's education.

3.2.1 The Chinese traditional private school called "SISHU".

The earliest education method in China appeared in the Western Zhou Dynasty about 3,500 years ago. At that time, people acquired historical knowledge by reading the articles of sages. People learned six subjects "filial piety, musical instruments, archery, horse riding, language, and mathematics." The most important are the first two. This part teaches people how to observe filial piety, while paying attention to etiquette and hierarchical system. Every action and

norm have absolutely standardized regulations. In other words, from a long time ago in ancient China, the education that children received from an early age was "allowed and not allowed", without expressing their opinions.²²

Around 500 BC, Confucius, as the first great educator and thinker in China, had a profound influence on the future development of education. Advocate guidance in educational methods and draw inferences from one another. But since then, the private school education method still relies on reciting the works of historians to comprehend the truth of life. The most common way of education is that the husband recites a poem, and the student reads a poem until it is fully mastered. It can be said to be a complete duck-filling education.

About AD600, China created the imperial examination system, which is a state-organized examination. Candidates can rely on good results to get a chance to be promoted to an official position. Everyone has equal opportunities, but it is also the only opportunity. At that time, the most important subject of the examination was writing, which was to examine who had a deeper understanding of the ancients' writings. It can be seen that in ancient China, the emphasis on liberal arts was much greater than that of science such as physics and mathematics.

For a long time, people only need to skillfully recite ancient articles and thoroughly understand the knowledge in books to get a good future. Recitation and understanding of existing book knowledge are China's long-standing education method. To be honest, this method has been used until now. Therefore, the enthusiasm for knowledge in books is the Chinese learning method that has been passed down from ancient times to the present.

²² Chen Dongli. (2018). *A brief history of Education development in China*. China Social Sciences Press. pp35-46.

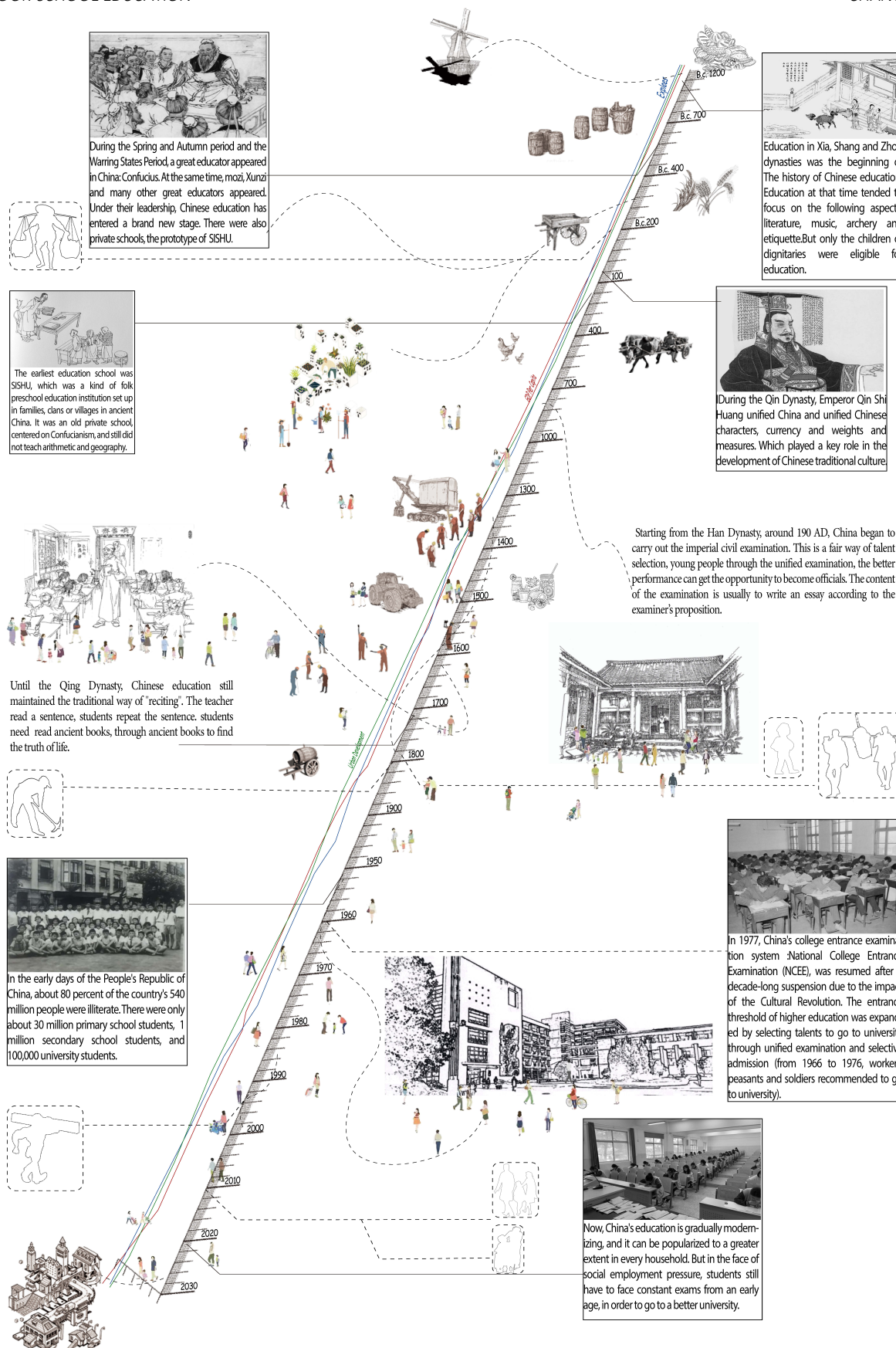


Figure 5. A brief history of Chinese education

Source: by the author.

3.2.2 The status quo of China's education system

(1) Exams.

Nowadays, Chinese children have been placed high expectations on their parents since they were young. Under the spur of their parents, children read, study, take exams, and participate in various tuition classes in order to gain more knowledge earlier than their peers. In such an educational environment, guidance and open thinking are not needed. Children only need to learn the knowledge of the already mature education system and do well in the exam exercises to gain a sense of accomplishment. And different from the exams in European education, each subject has precise scores for each exam and participates in the ranking of the class and the entire academic year. In such an environment, no parents want their children to be at the bottom of the entire list

In addition to this, the most important thing is that when children enter elementary school, junior high school, high school, and university, they all need to pass very rigorous examinations. Among a very large number of candidates, the ranking of test scores means whether they can enter the school they want. Therefore, in the current Chinese society, the level of test scores is almost the only criterion for judging children. This is not caused by parents' ideas, but is caused by the pressure of today's Chinese society and the education system.

Therefore, it is not an exaggeration to say that Chinese children are now bound by exams.²³

(2) Specialty, like piano, drawing, or sports is necessary.

While children are getting general education, in order to promote children to cultivate more interest, the state has different policies for children with other abilities-if you master a specialty, you have the opportunity to get a better school admission ticket. However, this regulation has gradually been misunderstood in recent years. In order not to lose to other children in all

²³ Li, Xia. (2018) "China to Provide More Children with Affordable Preschool Education." Xinhua, http://www.xinhuanet.com/english/2018-11/15/c_137609136.htm.

aspects of their children, parents send their children to various special classes to "cultivate interest." This makes this interest a necessary option, so in addition to ordinary classes, children will be arranged for one or more "interests", interspersed in the holiday

(3) Quality education

The school's outreach training focuses on school physical education. At this stage, outreach training has developed from a curriculum product into an educational concept and educational model. It has also been recognized by the education system and applied to related fields, becoming the main brand of outdoor experiential education in China.

This kind of expansion training is not sports plus entertainment, but a comprehensive refinement and comprehensive supplement to orthodox education. At present, outreach training is mainly guided by physical activities, focusing on psychological challenges, with the purpose of expanding the mind, character, and will, and improving the personality. However, this kind of quality development movement is mainly carried out among college students.

(4) The school in the countryside.

Unlike children in cities who need a lot of "interests", children in rural areas seem to have no time and opportunities to run their own hobbies. China is still a developing country, a large population and uneven distribution of educational resources are current issues that cannot be ignored. Rural population accounts for 36.11% of China's population ²⁴, but educational resources are less than 10% of the national total, and the quality of educational resources cannot be compared with that of cities. Most rural children do not have a very rich life. Apart from going to school, they help their family with some farm work or take care of their family members. They have no special skills, but they have a very rich outdoor life, so they have strong self-care and understanding skills since childhood.

²⁴ 2020 China Census. <https://www.census.gov/popclock/world/ch>



Children in rural areas are educated to study hard since they were young, leave the countryside and go to big cities. Such a cycle will result in more and more crowded population and resources in cities, drain of rural talents, lagging development, and no adjustment. However, there are many qualities in rural children that urban children do not possess. This is the quality that they naturally form when they urinate, that is, independence.²⁵

3.3 Why don't Chinese choose outdoor school education?

3.3.1 The pressure of the reality.

China is a country with a large population, and it is also a developing country undergoing rapid development. Therefore, people have a lot of work pressure and life pressure, especially in cities, working more than 60 hours a week is simply the norm for ordinary people in cities. Tired of running around in life will reduce the time parents spend on their children. It's a good life to spend weekends with children. It's more difficult for parents to have time to accompany their children to participate in some outdoor sports. At this time, the current social situation in China cannot be ignored.

3.3.2 The learning status of children and electronics lifestyle

In addition to parents carrying the pressure of life, children's examination pressure is also much greater than that of European children of the same age. Under the current education system, the most important label on children is their academic performance. Therefore, schools and

²⁵ Caixin Media: *China's Rural Youngsters Drop-Out of School at an Alarming Rate*, Researchers Find. March 24, 2016. [FSI | SCCEI | REAP - Caixin Media: China's Rural Youngsters Drop-Out of School at an Alarming Rate, Researchers Find \(stanford.edu\)](#)

parents put most of their energies on how to improve students' academic performance, and it is inevitable to ignore other aspects of children's development.

Moreover, the popular way of relaxation among children nowadays is not to do some outdoor sports, but to e-sports. The children all relax on the sofa holding their mobile phones, which is very harmful to the eyes, but this is the status quo.

Chapter 4.

The way to change the status quo of the outdoor school education in
China.

Under the current situation of education in China, children and parents are under heavy pressure. Therefore, changing the way of education is definitely not something that can be accomplished overnight. It is particularly important to promote the development of outdoor education in China step by step with a purpose. There are nothing more than two ways to promote new things. One is to use the new educational concept of outdoor education to generate excitement, and the other is to find common ground from existing culture. I think in Chinese society, the second way is more gentle and more feasible. Chinese people have a strong sense of awe for traditional culture, it will be easier to start from this aspect.

4.1 The essential elements that need to change in the school.

Outdoor education as a way of education can be carried out based on activities in daily life and can be carried out in any environment. Therefore, the campus, as the place where children spend the longest time every day, and the most important place for students to receive various education, is the best initial platform for outdoor education. Outdoor education on campus is an easy way for parents, students and teachers to accept. If you want students to receive all aspects of education in the school environment, every corner of the campus environment should be carefully arranged by architects and teachers.

To promote outdoor education on campus, attention should be paid to the infrastructure construction of the outdoor environment and the division of activity areas. The physical and mental growth of children is very fast, and children of every age will have many different needs and different views on things. What happens on campus is that older children like to bully younger children to show their strength. In response to this situation, if we divide a fixed space according to age, it will have some bad effects, and may even exacerbate the contradictions caused by different age levels in campus activities. Conversely, in the construction of the campus environment, breaking through some age levels and not dividing the site of specific ages will consolidate the concept of equality in the hearts of children. Don't let a certain area seem to be for younger children. Older teenagers and children should be allowed to play together, so that

children can have wider exposure to different things and reduce age barriers. More importantly, it can avoid age discrimination.

Similarly, it is very important to enhance children's gender awareness through the establishment of some infrastructure in the campus, but to avoid gender discrimination. Whoever says that girls must like pink, princess dresses, and Barbie dolls. Likewise, boys don't have to wear blue, play football, and be dirty to show manliness. The concept of equality for all must be established from an early age. This is a very important concept establishment in life.

Finally, I believe that in an outdoor environment, it is important to provide a relatively quiet and solitary space while providing a wide shared space. Shelters built with natural elements can provide a relatively private environment for outdoor spaces.

4.2 The countryside and the country school.

We talked about schools in cities before, but in China, the power of the countryside must not be ignored. The Chinese emphasize that everything we eat and drink every day and the source of life, which is essential to life, are all produced in the countryside. Therefore, people think that even if a person succeeds, he still needs to experience life in the countryside. This is called returning to the roots. Life in rural China is completely different from that in cities, and children in cities rarely have the opportunity to actually understand the countryside. Children in the countryside have no chance to experience professional training in specialty classes. And children in the city have many opportunities to participate. The children in the country play in the fields every day, but the children in the city are exhausted in the busy traffic of the city and can only go home at night to play with electronic products. The life of children in the city is more delicate, while the life of children in the countryside is rough. Over time, such urban-rural differences will become more and more obvious in the children's thinking and cognition.

In order to address this situation, if urban children have the opportunity to experience rural life

in the countryside, see with their own eyes how every grain of rice they eat comes from, experience touching the cold stream and the hot sunshine in the fields, The noise of insects at dusk, and the stars in the sky at night. These are things that children in the city cannot see, and they are also knowledge that parents hope every child can learn. Nature will be the best teacher for children in these cities.

At the same time, for rural children, there are not many opportunities to learn many professional expertise, nor many opportunities to discover what hobbies they have, but they know how to better take care of themselves and the people around them since they were young. Therefore, we can provide them with an opportunity to go to the middle of the city and see the bright lights of a truly modern society. I don't know the night lights in the city or the stars in the sky, which one would they prefer? Let different children walk into different living environments to truly achieve the goal of enlightenment. In strange groping again and again, every child planted a seed in his heart, and when they really grew up, each seed would bloom a different fragrance but the same beautiful flower.

4.3 Turn farmland into outdoor camp, turn rural school into outdoor school.

4.3.1 It's the most effective way to persuade parents to let their children leave the classroom

Under the pressure of life in contemporary China, parents want their children to live a safe and healthy life, but they don't have much time to take care of and accompany their children. Instead of letting children go to all kinds of after-school training classes, it is better for the school to organize organized outdoor activities, which can not only reassure parents, but also let children get healthy physical and mental development.

4.3.2 There are many schools take children to study in the countryside now.

At the same time, there are a lot of school organization similar to the "urban children experience

life" one such activity, make learning in the classroom every day, after school life, playing and playing computer games city children can have a chance to really come into contact with nature, breathing in the city for less than the air, see can't see the stars in the city. At the same time, students in rural schools will also go into the rice field, experience farming life, which can help children know more plants, animals and insects. At the same time, it can also let the children more real experience of the working people's not easy, which will make them more cherish their own meals, but also more grateful for their own life.

This is a enhance life experience life classroom: the majority of children will be the first to leave parents to live independently, or in far away from the familiar living environment of the nature, this takes a lot of courage and confidence, to quickly adapt to the new environment, as well as the sorting clothing, personal items, the ability to manage personal hygiene, further to reach the height of the teacher deployment task.

It's also a great group experience: kids often have their own cliques and close friends, boys in groups and girls in groups. Living together for a long time can promote mutual help and learn to care for others. They also have to work together to complete tasks such as setting and organizing tables and chairs, distributing collection and washing dishes, cooking and cleaning.

Children are also lucky enough to be exposed to and learn many ancient skills: in the workshop, they make mud walls made of straw and mud, covered with straw to keep warm; do physical exercises in the wild grass; cook with simple utensils and fruits and vegetables picked in the wild.

On different farms, livestock farms, we can learn about planting seeds, working in the fields and picking fruit, as well as taking care of livestock. Many children in China are born and raised in big cities built of concrete jungle. These activities provide a good opportunity to get in touch with nature, understand the growth process of plants, fruits and poultry, and then understand the real earth, our home.

Such programs give children memories of their collective life from an early age, and also foster a sense of responsibility for eating fresh fruits and vegetables, supporting pollution-free agriculture, and protecting the environment. Training and education at an early age can have lasting effects throughout life. What is more significant is that sometimes parents learn from their children and grow together.

When they return to school, they discuss or give presentations on the projects they are most interested in: how to get water from nature, how to use solar energy to heat water, the principles of environmentally friendly toilets, etc. Children can share their experiences and knowledge and get more information from other children.

4.3.3 Show the utmost respect to Chinese traditional culture.

In many rural areas of China, there are some artisans, many of which are handed down from generation to generation in ancient China. However, in the information age, some traditional cultures are faced with the dilemma of no inheritor. However, Chinese people's reverence for traditional culture is innate. Young children are the future of the country, leading children to rural areas can learn more about traditional Chinese culture, can better promote the spread of traditional culture, more traditional Chinese culture can be continued. For example, wicker weaving technology in Xiangyang, Hubei province, has emerged since the Neolithic Age. Due to the needs of human civilization, it has been continued to this day. In 2008, it was listed in China's "intangible cultural Heritage protection" list. You don't see people doing this in the cities, but in certain villages, you can see almost an entire village where everyone can knit by hand. This is the charm of cultural heritage. Such cultures need to be passed down from generation to generation, so it is important for children to learn more about traditional culture from an early age.

4.3.4 What else do we need to think about the design?

In rural life, pastoral life is the most important part. In the eyes of educators, this part is the

most natural outdoor education camp. But the field is too unpredictable, so we need to make some actual changes in the field to truly turn this natural world into an outdoor camp conducive to learning.

If you want to create an outdoor camp, you need to investigate and study. In outdoor education, what kind of harvest the children hope to achieve, what kind of infrastructure construction is needed to turn a primitive field into an outdoor camp, and what difficulties will they encounter in the teaching process, what kind of needs do teachers have when teaching? These all need us to investigate.

The transformation of rural fields into outdoor camps and the promotion and promotion from the perspective of traditional Chinese culture is currently the most effective way to develop outdoor education in China.

Chapter 5.

The workshop *A scuola nel parco* in Novara

5.1 The concept of the workshop

There are many outdoor education institutions in Europe, and the development of outdoor education has also gone through a long time. But this does not mean that this activity is sufficiently complete in Europe. Before we do a design, we need to know who is the user and what do they really want. If we want to do something about outdoor school education, we need to research what do the students and teachers really want.

A scuola nel parco It is a project that hopes to have a deeper understanding of outdoor education in a limited time based on some theoretical support through field inspections and investigations. The purpose of this event is to understand their true ideas and needs through communication and activities with students and teachers in Novara's Scarabocchi festival, we let them create the ideal playground in their mind, and to detect the risks and advantages of outdoor school education by collecting needs. The whole workshop is divided into two parts, which contain different but related work content and different participants. Throughout the event, we have the opportunity to work with children and their parents and teachers to understand the true needs of outdoor education end users.



Figure 6:Environment of the park and school



Photo: by the author

5.2 Try to modify the playground in workshop 1.

The first studio was held in St. Andrew's Park in front of P. Thouar Elementary School. In the

space at the entrance of the school, the students pointed out that this is only way to school, and it is also the place where they spend the waiting time for school. The children will play football or others on this grass. Parents will gather here to chat and wait for their children to come out from school. This is a place they are very familiar with, so we need some guidance to make them think of things that they would not usually notice. Through the textual and graphical guidance of children, let them express their opinions and suggestions about the park they are in.

5.2.1 Prepare

According to the purpose of our activity, we divide the whole activity into groups of subjects and student grades, which are divided into four subjects: art, English, science, and Italian. Among them, science and Italian are divided into third and fifth grades.

These six groups correspond to a certain day of the week. In the six groups that have been divided, we design special and different material bags according to the characteristics of each discipline. In the material bag, there are some colored cards, fragments of materials, some patterns and some words, and some lesson activity plans. These materials will become elements that can stimulate children's thoughts and inspire children's imagination of activities and spaces. At the same time, we also drew the site model drawings and some questionnaires with site drawings. These materials will play a role in inspiring children to express their opinions in this seminar.



Figure 7: The school site.

Source: by the author

5.2.2 Purpose

The activity lasted all morning. During this period, we distributed the axonometric drawings of the park prepared in advance to the students, asked them to write down their views on San Andrea Park on paper, and asked them to report what they liked about the park and what they didn't like. What, what they want and what is their favorite place. They can freely express their opinions. We guided them to write some words or draw some patterns on paper as much as possible. After communicating with classmates, everyone gradually began to express boldly.

It is worth noting that those students who sit on the same table representing the same subject and grade will influence each other, so many times everyone will express similar or even the same opinions.

After this we launched the second project. We sent the materials bags prepared in advance to the students to let them imagine that on a certain school day, the course of this day must be held in the park, and there are also set course arrangements and activity plans. We send each group of students a drawing of A0 with a site model. They need to imagine the space that needs to be occupied in the park according to those requirements, how to use these spaces, and what actions should be included, and combine these ideas Reflected on the drawings。

5.2.3 Result

In this workshop activity, each group of students will be influenced by other children in the same group when expressing their opinions, but they also show better synergy when working together. The results show that the students prefer a well-equipped space and



a clean and tidy free area. They also like bright colors like school murals and playground equipment, and natural things like grass, fields and fountains instead of concrete gray benches. They have both good and bad views on trees. Some students think that trees will obstruct their vision while playing, but some like to play games around them.

The students also put forward some requirements for the equipment that needs to be owned on the playground. Since most of the students we choose are about 10 years old and have some understanding of the functional equipment in the space, we will propose to improve the facilities in the space, such as trash cans, toilets, etc.

How to divide the park space, the children think that the concrete road in the site is very inappropriate. In their opinion, it is a sad color, and setting up such a path is a negative way of separation. The children wanted to separate the canteen, classroom and play area, and proposed many organized activities that need to be designed, such as a field and some amusement facilities. This kind of activity with a prescribed range of activities has long been a habit of children in their childhood lives, doing appropriate things in designated areas.

However, this activity has different views among teachers. They believe that this area is not easy to manage, lacks protective boundaries, and there are no protective measures adjacent to the

road. The grass lacks some basic teaching game props, which is slightly empty.

According to the needs of the students, I suggest that divide the site into two parts, one is free activity area (area A), the other is teaching area (area B). Among them, The A area is divided into three parts: A1 is the living area, which deals with living problems such as having lunch. A2 is a rest area with planted trees and grass, which can be set up as an exhibition place for students' works. The results of outdoor education can be displayed to stimulate students' enthusiasm. A3 is the free activity area. This area should have a spacious and clear vision, so that teachers can pay maximum attention to the safety of students during free activities. Therefore, it can be set up as a small court, and also has a canopy to provide shelter when the weather changes.

B area is divided into four parts: B1 is the teaching area, where some infrastructure will be set up for students to gather and listen to the teacher, as well as places where they can write. Necessary equipment, such as sand pits or pools, will also be set up. B2 is a relatively quiet corner in the teaching area, where some semi-open Spaces can be set up to provide some children with a space to think alone. B3 is for entertainment equipment area, set some entertainment equipment that students like, such as seesaw, slide, swing and so on. B4 is an area where cars occasionally pass, so teachers need to be vigilant during class and warn children not to stay there too long. In general, area B1 is the main area for outdoor teaching.



Figure 8: Functional partition proposal diagram of workshop 1

Source: by the author.

5.3 How the children draw about the playground in workshop 2.

Compared with the first workshop that took place on paper, the second workshop took place in a concrete model. Based on the conclusions obtained in the first workshop, we will make some effective guidance in this event. We hope that students can express their hope for the campus through the design of the model.

5.3.1 Prepare

In this workshop, we set up four identical site models through the design of "basic elements", and selected different representative schools for each site. "Basic elements" refer to elements with the same color and material, regular shapes, and different sizes, which can be spliced with each other, including squares, circles, cylinders, and so on. We also provide paper, cloth, cotton or cotton thread of different materials and colors. Through the splicing and imagination of these existing elements, children can turn the elements into objects they want, such as trees or seesaws, and place these items in the existing elements. In some models, they can get the playground look they want.

In addition, we sorted out the conclusions of the first workshop and found that children have a lot of imagination for trees, and trees are also one of the most frequently mentioned elements by children. Therefore, in response to this situation, we have given some illustrative images of activities that can be done through trees in this workshop, hoping that these images can inspire the children.



Figure 9: Base element for workshop 2

Photo: by the author.

5.3.2 Purpose

The event took place on a sunny afternoon in the broletto courtyard in the center of Novara. We put the playground models representing four different schools on four tables, randomly guided some children to participate in our project, and let the children complete the design of the ideal park with the props provided by us, including the space design and architecture that constitute the park design. Therefore, the difference from the first project is that each child in this activity did not know each other before, and the age ranged from six to ten years old. However, this situation did not cause trouble to the activity. Instead, the experiment results have diversified meanings through children's mutual communication.

Children start to create under the leadership of their parents, but the entire creative process is completed by each child himself and herself. Some of them made slides and seesaws, some put

wooden sticks into tents, some built a tree house, and some pulled nets between the "trees" they planted. Compared with the final result of the experiment, the imagination of the children during the experiment made me feel even more incredible. In the end, the four groups of children completed the design of the park in front of them with the help of each other.

5.3.3 Result

Workshop 2 is more interesting for children than Workshop 1, and it also makes the results of the experiment more intuitive. But when we sorted it out, we found that the children were very clever thinking when creating, but it was no different from the first proposed solution. This may be because most of them have not done the first subject training, so they cannot get the further thinking we hope to get. Or maybe it is the content shown in the second topic that further confirms what the children want in topic one. But I don't think that from their creation, we can easily conclude that they like brightly colored and lively outdoor spaces, and hope to create trees like tree houses.

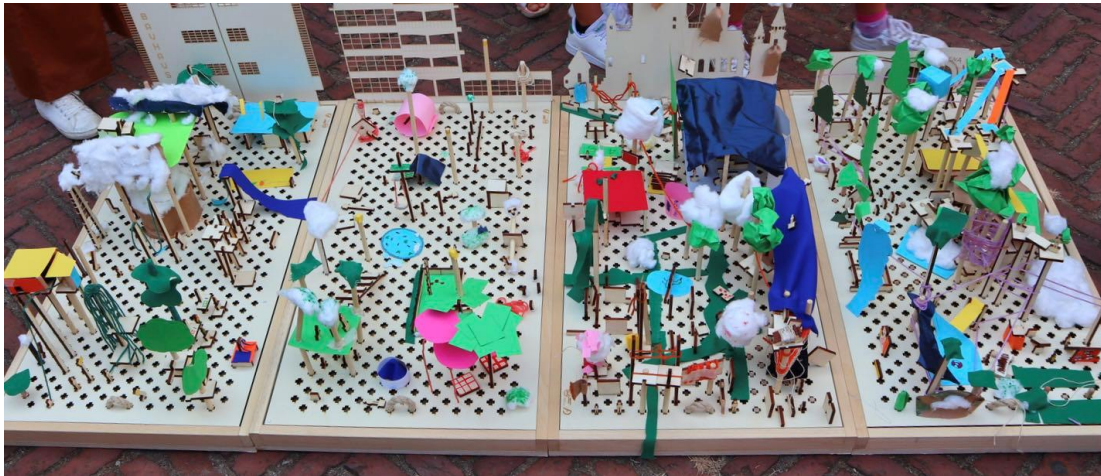



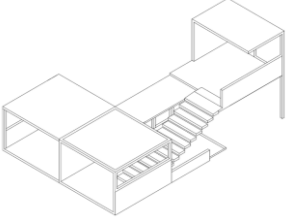

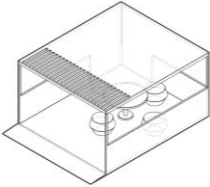

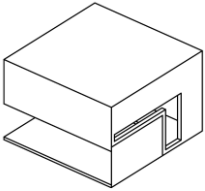

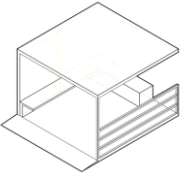

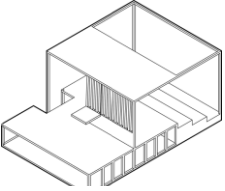

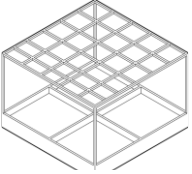


Figure 10: Model by the students in workshop 2.

Photo: by the author.

Original model by students	Transform in architecture	Practical use
		Spiral staircase.
		Open staircase.
		Rest area
		Private area
		Semi-open space.
		Semi-open overhead space.
		Garden.

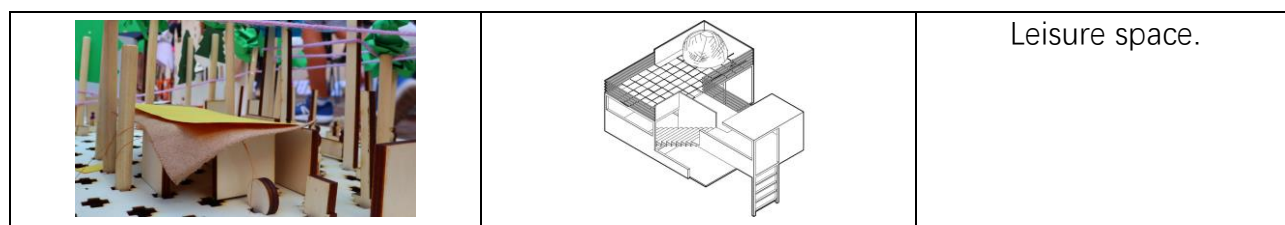


Figure 11: The element created by students in workshop 2

Source: by the author.

5.4 Summary.

Here I list a table to show the conclusion of the activity. We need to take into account the questions raised in the table below when designing outdoor education.

Student's requirements		
	Needs	Requirements
A.1. Standard teaching		
A.1.1. Standardized teaching	Listen to the teacher clearly.	The location chosen in the classroom should be relatively quiet.
A.1.2. Freestyle teaching	Have a broad view	Reduce unnecessary public facilities.
	Separate teaching from life.	The teaching area is clearly indicated and has a boundary with the living area.
A.2. Free time		
A.2.1 Physiological requirements	There is a dedicated space outdoors for life-related matters.	Setting up a dining area, toilets, trash cans, etc. outdoors increases the convenience of outdoor classrooms.
A.2.2. Response ability	The classroom should guard against some weather changes.	Some shelters should be set up.
A.2.3. Environmental effects	There must be enough colors in the classroom to make children feel excited.	Pay attention to the choice of materials and colors when setting up course project props.

Figure 12: Student's requirements on the workshop

Source: by the author

Teacher's requirements		
	Needs	Requirements
B.1. Standard teaching		
B.1.1. Standardized teaching	The speech can be heard clearly.	The location chosen in the classroom should be relatively quiet.
	Provide effective protection to children	Set up professional protection games
B.1.2. Freestyle teaching	Can see the location of each child	Reduce unnecessary public facilities.
B.2. Free time		
B.2.1. Response ability	The classroom should guard against some weather changes.	Some shelters should be set up.
B.2.2. Security range	Let the children move within a limited safety range.	It is necessary to set up obstacles that will not damage the vision, and separate it from the uncertain space outside the classroom. Such as bushes.
B.2.3. Rest time	Students must be clear about the time range of the class, and only rest during the break time.	Set up distinct areas to separate the rest area from the exercise area to avoid unnecessary danger.

Figure 13: Teacher's requirements on the workshop.

Source: by the author.

Chapter 6.

The requirements list of building an outdoor school

6.1 Five points of behavior

The speed of development of children's sports is amazing. 0~1 years old, mainly develop initial movements, such as raising head, turning over, sitting, climbing, standing, walking, etc. Around one and a half years old, children can usually move around. By the age of 2, he has a steady pace and can walk briskly, even run and jump. After 2 years old, children begin to develop basic movements, such as running, jumping, straddling, pushing, pulling, throwing, catching, kicking, etc. By the age of 4 to 6, children's basic movement development gradually matures, their intelligence improves significantly, and their creativity begins to develop. Their movements have different combinations and they will create interesting movements.

At the same time, Swiss psychologist Jean Piaget, who systematically studies children's thinking process^[26], divides children's cognitive development process into perception motor phase (0~2 years old), pre-calculation phase (3~7 years old), and specific calculation phase (8~12). The four stages of age) and the formal calculation stage (13-16 years old) can also be roughly divided into two stages: the pre-calculation stage (before 7 years old) and the calculation stage (after 7 years old).^[27]

In psychology terms, the so-called "calculation" refers to the mental behavior of the mind, which means to compare with other things, understand the rules, and recreate the meaning. Children must have "calculation" after the age of seven. Before the age of seven, he may not have the computing ability at all, or he may only have the unstable computing ability, so it is called the "pre-calculation stage."

Jean Piaget pointed out that taking six years of age as the benchmark, the sensorimotor nurturing stage before the age of six, and the symbolic thinking nurturing stage after the age of six. The sensorimotor nurturing stage is the period when the child's sensory and motor

²⁶ <https://info.babyhome.com.tw/article/9567>

²⁷ Jean Piaget. (1976). *The Grasp of Consciousness La Prise De Conscience engl Action and Concept In The Young Child*.

abilities need to be developed. It includes the movement of large muscle groups responsible for running, jumping, and small muscle groups responsible for cutting and buttoning. That is, children must be fully exposed to sensory stimuli before they are six years old. Running a lot of jumping and jumping are all brain development. Must have sufficient requirements.

Therefore, studying children's activity habits and conducting planned and professional guidance for these habits can make children grow better.

6.1.1 Walking

Walking is one of the most basic and relatively simple basic movement skills. The way of crawling with limbs in infants and young children limits their exploration of the outside world, and the emergence of walking allows them to explore a wider world.

Gait refers to the posture shown when walking. Generally speaking, mature gait patterns have been established at 3 years old, and most children have reached adult walking patterns around 5 years old.²⁸

Japanese scholars studied the influence of gender and age on preschool children when they walk across obstacles and found that walking across high obstacles is a test of the dynamic balance of preschool children. Bizama (2018) research shows that regardless of the walking experience, visual environment interference will seriously affect children's gait performance. Sutherland (1980) conducted a 7-year follow-up study of 186 normal children and found that among these determinants of gait maturity, the most important factor is increased limb length and better limb stability, which is unilateral Increase in standing time of limbs. Studies have shown that the concurrent tasks of walking posture and walking are two key factors that affect children's learning of the basic motor skill of "walking".

For children who are learning to walk, other body functions are still in the development stage,

²⁸ Freitas D L, Lausen B, Maia J A, et al (2018) . *Skeletal maturation, fundamental motor skills and motor performance in preschool children*. Scandinavian Journal of Medicine & Science in Sports, .

such as balance ability, leg strength and body center of gravity, etc., and they cannot immediately learn adult walking patterns.

Only with the increase of age and the increase in the number of walking exercises, children will gradually form an adult-style walking style. The concurrent tasks of walking at the same time are also very important for children's learning to "walk", and concurrent tasks have a great impact on children's walking speed, stride length and arm coordination. Therefore, although walking is a relatively simple basic movement skill, it takes a period of practice and development to be truly learned and proficient, and it will also be affected by the number, type and difficulty of tasks during the learning process.

Therefore, in outdoor education camps, it is necessary to set up special training equipment for children's walking posture. For example, the balance beam.

6.1.2 Running

Running is a kind of displacement skill, which is the development and extension of walking. After children have mastered walking, they gradually become dissatisfied with the walking speed and start to try to walk faster. The action of running is to walk at the same time. There is a situation where both feet are off the ground. Running began to be learned about half a year after walking. Sherid (2008) showed in a study that children can run at 18 months, but they have the highest level of running coordination when they are 6 to 8 years old. Therefore, during this period, it is easier to improve the standardization of running actions, develop habits, and reduce physical damage caused by exercise.²⁹

Running includes a series of forms ranging from jogging to sprinting. Most athletic activities and games for children and young people require running. Running is a very common movement skill and is widely used by young people in various sports games. The development

²⁹ McGraw M B. (1940). *Neuromuscular development of the human infant as exemplified in the achievement of erect locomotion[J]*. Journal of Pediatrics, 17(6). pp: 747-771

of children's running skills requires that each leg have enough strength to push the body forward and upward, and it also needs to have the ability to maintain body balance in a dynamic state. In addition, they must also have the ability to coordinate their legs to maintain a continuous steady pace.

Children are energetic and like to run. Special and safe tracks should be set up in schools. There are suitable track lengths for different age groups. Therefore, the corresponding track length should be set up according to the age span of the school students. And in accordance with national regulations, set the runway orientation, runway material, and service life limit.

6.1.3 Jumping

Jumping (Jumping) is a physical ejection skill, which includes the flight and landing of the feet, which requires the coordination of the whole body. Because of the lively nature of children, it is relatively easy to learn to jump. However, it is not that simple to truly master the skill of jumping. Standing long jump and vertical jump are the most commonly used jumping methods in children's daily life and physical activities. At the same time, there are other ejection skills that are sometimes referred to as jumping, such as tapping and hopping.

Children like to jump, which means that they have the ability to cross obstacles on the ground and also have space to exercise physical coordination. Therefore, I think schools should set up special safety obstacles and professional equipment to fully exercise and give full play to the children's athletic ability. Explore the potential of more children.

6.1.4 Crawl

Crawling is the interaction of arms and legs in the prone position. At about seven or eight months of age after birth, the baby exhibits for the first time crawling with the abdomen in contact with the supporting surface, which is also called creeping. Babies can get their abdomen off the supporting surface and crawl with hands and knees in about eight and a half months.

Once the baby has mastered crawling, it is not surprising that a variety of crawling movements

occur. For example, a baby may crawl with two hands and one on the ground. The adult crawls on the ground with his hands and feet instead of on his knees. This is also called "hands and feet crawling."

After the child has experienced the crawling period in the growth stage, he learns to walk. Once they learn to walk, children are rarely willing to continue crawling. But crawling is a very beneficial exercise for anyone, and the exercise of hands and feet can increase the coordination of the body. Therefore, for slightly older children, upright crawling is the main activity and form of exercise. Tree climbing, wall climbing, ladder climbing, rope climbing, and rock climbing are all climbing as the main movement skill. Climbing requires high limb strength. Upper body strength training generally focuses on gymnastic skills, such as horizontal and parallel bars, and suspension skills.

As a relatively difficult sport, first the school should give adequate protection measures to prevent children from being injured in the process of climbing. Schools should be equipped with corresponding recreational professional facilities for this sport, such as rock climbing, single and parallel bars, etc..³⁰

6.1.5 Throw

Throwing is one of the basic movement skills commonly used in sports activities. It is a major movement in baseball and the world. It also exists in basketball, football and cricket. In North America, throwing movements appear in many sports activities in schools and communities. The ability to hold throwing movements is very important for children to actively participate in sports activities in schools and communities (Mckenna, 1998).

In China, throwing activities such as sandbag throwing are also common children's games in elementary schools. In throwing activities such as sandbag throwing, there are not only certain

³⁰ Hung Y C. Meredith G S. Gill S V. (2013). *Influence of dual task constraints during walking for children[J]*. *Gait & Posture*, 38(3). pp: 450-454.

requirements for the throwing power, but also high requirements for the accuracy of the throwing. In elementary schools, especially in the fourth to sixth grades, the distance of throwing softball is used to measure the mastery of throwing skills, which was once a content of the physical education final exam.

At present, throwing a solid ball has become a test content in the "National Student Physical Health Standard" from elementary school to university. The test ball for elementary school is 1 kilogram, and for junior high school and above it is 2 kilograms. In the high school stage, students in a few schools with sports grounds can also develop the skill of hand-throwing by throwing javelins. Studies have shown that when children's throwing patterns are correct, they will throw faster and farther (Barrett8 Burton, 2002).

Schools should pay enough attention to this movement. During the throwing process, the setting of the game position range must be clear, and the protective measures for participating children must be adequate. It is recommended to set this large-scale sport as a group activity, such as throwing a ball, which can increase the fun of the game and also can increase the child's sense of teamwork.

6.2 Five points of planning.

Mr. Lynch's book ³¹ once summarized five elements for urban design, namely paths, edge, districts, nodes, and landmarks. In my opinion, for children, kindergarten is their small city. In this city, they can give full play to their abilities and imagination, take risks, and create. Therefore, I think that a kindergarten outdoor teaching base should also have a design concept based on these five elements.

³¹ Kevin Lynch. (1960). *The Image of the City*. MIT Press.

6.2.1 Paths

The main function of the path is to organize space and activities in the space. In children's living habits, although they don't know the principle of "the shortest line between two points", they can always get where they want to go through the nearest path. The path setting should be clear, and every activity part of the outdoor camp should be organized reasonably。

6.2.2 Edge

The boundary is to create a relatively safe and reliable living environment for children psychologically and physically. They are the real part that can be perceived. It can be walls, curbs, ropes, curtains. In children's living habits, the sense of boundary is very weak. Therefore, if you want to set the boundary to be really effective for children, you must set the boundary clearly enough. Its purpose is to let children first have an awareness of the concept of boundaries.

6.2.3 Districts

Area usually refers to a whole flat area with the same functionality. The division of areas can make it clear that children can do certain things in certain places. Consciously find the right place, eat, play, sleep, etc. activities. Doing different things in different places can also increase the children's crisis awareness, so that when the teacher emphasizes which places cannot go, they will have a more specific awareness. The area is divided by the boundary, it can be a specific obstacle, it can also be represented by the ground of different materials, and it can even be divided by a height difference such as a step. In the previous experiment, we also verified that children like some space design with clear boundaries, such as lunch space.

6.2.4 Nodes

A node refers to the focal point of a certain area, and sometimes it can also be regarded as the entrance of a certain area, or a condensed place of all the characteristics of this area. In outdoor education, nodes are very important. There is a node that makes it easier for teachers to gather

children together and do some necessary instruction before entering a special area. Such guidance can also strengthen the child's sense of boundary to the venue. It should be noted that before outdoor sports, it is important to listen carefully to the precautions the teacher said.

6.2.5 Landmarks

Landmarks originally represented some public art, buildings, signs, etc. in the city. In the environment where the landmark is located, at least one aspect is unforgettable. To a certain extent, it symbolizes the style and features of a city and its unique signature. But in outdoor education, the landmarks here refer to street signs, signs, or some large public signs that are easy to remember and conspicuous. These landmarks can really help people outdoors. For example, recognize the direction, seek medical treatment in time, seek effective help, find water source, etc.

6.3 Five points of nature.

6.3.1 Vegetation

Plant resources are an indispensable item in outdoor teaching courses. Among the rich natural resources, plants have rich ecological characteristics, such as appearance, shape, characteristics, folklore, whether they are poisonous, and whether they are alien species, and many other topics that are worth learning and explaining. From the perspective of plants, cultivating students' independent thinking ability and independent learning ability can also effectively further increase the interest and diversity of learning, thereby enhancing students' learning motivation, and gradually constructing students' perception ability and skill training. In addition, it can also lead students to understand and value the rural environment, and then generate a sense of protection and care for the environment, and finally have the ability to reflect on ecological issues.

As part of the teaching base, vegetation can sometimes be used as a shelter or as an important way to explore and climb, which can promote children's thinking about nature.

6.3.2 Grass

Grassland can be the best factor for children to stay close to nature. Children can do anything on the lawn and give the whole body to the earth. The texture and color of the grass are very suitable for children to relax.

6.3.3 Water

Child educator and psychologist Sun Ruixue wrote in her "Capturing Children's Sensitive Period"³²: "Sand and water are the best gifts that nature can give to children, and no toy can match them." Because water and sand have a common feature, that is, they have no fixed shape, so children can play as they like according to their own wishes. Not only that, children themselves are more interested in toys that are changeable, dynamic, and diversified in shape. Water is such a "toy", which is unmatched by any artificial toy. Children like playing with water, mainly because they can get happiness from it, and children are curious, playing with water can satisfy their desire to explore nature.³³

From an adult's point of view, water is lifeless, colorless and tasteless. Except for the cooler water used for bathing in summer, it has no other meaning. But the water from a child's perspective is very interesting. The baby is soaked in amniotic fluid in the mother's belly. Therefore, almost all children have a natural affinity for water. They show great interest in water and will not get tired of playing. In the eyes of children, they communicate with water. For example, the sound of water flowing, the water being sprinkled in a basin, and the shape of a cup change will give children a great sense of satisfaction and accomplishment. Children will be very happy to play with water.

However, while providing an environment for playing in the water, protective measures must be taken to prevent children from drowning or slipping and getting injured, or from heatstroke

³² Sun R.X.(2014). *Capturing Children's Sensitive Period*. New Buds Publishing House.

³³ Li Jing. (2012). *Environmental enlightenment for children: Earth water World*. New Buds Publishing House

and sunburn.

6.3.4 Sand

Playing with sand is an entertainment item that most children like very much. However, many parents are afraid that children may accidentally rub sand into their eyes when playing with sand, and prevent children from playing with sand. Sand is not only solid, but it slips through the fingers when caught in the hand. It is also called fluid. It is changeable and easy to be grasped. Its endless form and endless play methods satisfy and develop children in essence. Inner needs and creativity in operation. There are many benefits to playing in the sand.³⁴

1. Exercise the child's hand-eye coordination. When children play in the sand, they will slap the sand vigorously or use a shovel to shovel the sand to build castles and sand sculptures. The action of shoveling sand can develop the child. It not only promotes children's physical health, but also promotes children's brain development, which can inspire children's thinking to be more flexible and so on.
2. Promote the rapid development of children's perception. In the early development of children, there is mainly the development of sensory movement. Sand, a solid and fluid thing, can provide children with special sensory sensations. Sand is fluid, and the child's little feet will sink when stepping on it, especially when grabbing a handful of sand, the sand flowing between the fingers will give the child a special feeling, which effectively develops the baby's perception.
3. Can enhance children's creativity. In the eyes of children, sand is varied and charming. Because sand is a very common and infinite primitive material in life, sand can inspire children's strong curiosity and thirst for knowledge, and satisfy children's desire for creation in life.
4. It can increase the child's ability to recognize spatial relationships. Spatial relationships are difficult to express. Use a small shovel to put sand into the bucket, fill it continuously, and then

³⁴ Xu Manzhi. (2019). *Playing with sand and water, let the kindergarten become a source of happiness for children*. Examination and Evaluation, (04). pp: 24-30.

buckle the bucket over, and a small shape, such as a sand castle, will appear. This process will further develop the child's ability to recognize spatial relationships.

5. Children get effective emotional vent through playing in the sand, and they are more energetic. Playing sand is a seemingly simple game, but it gives children a great sense of satisfaction and accomplishment. Children play in their favorite ways and feel the joy of making the decision.

6.3.5 Stone

Different from sand and water, the natural resource of stone is in ever-changing ways in nature. There are no two identical leaves in the world, and no two identical stones. In the eyes of children, these different looking stones are very good game props. Children can make many fun things with leaves. Small stones are the treasures they have obtained through countless "adventures"... These gadgets can make children's Whimsical ideas can be turned into games, which can develop children's imagination and creativity. In the eyes of children, the color, shape, texture, and texture of each stone are the character of the stone, and they will collect the stones they like. With some positive guidance, they might put the stone together into a painting they imagined. This is the beginning of children's exposure to art through understanding nature.

6.4 Five condition factors of architecture.

6.4.1 Color

Eyes are the windows through which children know the world, and color is an important element that composes the world. The purer, brighter, and more saturated colors are more visually stimulating. For example, red, orange, yellow, green, blue, purple, etc. are visually sensitive colors that easily attract children's attention. The experiment of the Australian psychologist Werner proved that children, especially preschool children, are mostly based on the colors that have a strong visual impact on their knowledge, discrimination, and choice of things. It can be

seen that color plays an important role in children's visual space and the tendency to attract children's psychological attention.

Children from 4 to 7 years old are very sensitive to visual stimulation and love colors, especially bright colors. This is not only their psychological characteristics, but also their psychological needs. In particular, some simple and natural colors can easily resonate with children, making it easy for children to understand, appreciate, learn from, and express. For children, the environment has its own language. Bright colors can easily arouse children's emotions, make them feel the changes of colors, master the changes of pictures and artistic beauty, and make the environment more artistic.

The most important thing is to make full use of the "color treasure house" of nature. For children, nature is the most colorful area. As their perception of color increased, they gradually had a stronger emotional response to the bright sun, blue sky, splendid mountain flowers, and lush green leaves.

As for the unusual coloring and bold imagination in children's drawings, they are all expansions of free space. Don't correct them rigidly. It can gradually remind the child to observe the nuances of the colors of real objects, so that he can actively explore and master the differences of colors.

Of course, in addition to color, hearing, smell and touch are all factors that cannot be ignored in children.

6.4.2 Pattern/texture

The color and texture of the material can be regarded as the physical characteristics of the material. The texture of a building material in the children's teaching activities will have some impact on the children's psychology. Like color, texture is also a medium for materials to express emotions. The color and texture of the building materials set off the character of the building on the one hand, but also echo the environment on the other.

6.4.3 Material

Building materials are the physical entities that create the building space, which collectively reflect the surface state of the building, giving people a different feeling of space. Different materials produce different moods and convey different architectural styles. Throughout history, building materials reflect different architectural styles and forms, and different materials highlight the characteristics of ancient civilized buildings in different regions. For example, the ancient masonry buildings in Western countries and the ancient wooden buildings in Eastern countries. When you think of Gothic architecture, you think of glass. This is a concept left over from the inheritance of ancient culture.³⁵

Tadao Ando said: "As long as any material is used correctly, it can shine and reveal the authenticity of the material." In outdoor environments, special care should be taken in the use of building materials, especially buildings used by children. It should be as close as possible to the original appearance of nature, and at the same time, it can increase the children's enthusiasm for nature exploration.

At the same time, it is extremely important to pay attention to the protective effect of materials on the safety and health of children. Taking the floor materials in outdoor spaces as an example, the floor materials can be divided into hard floor materials and soft floor materials according to their softness and hardness. According to the natural properties of materials, it can be divided into natural materials and artificial materials.

The cement floor in the hard floor material is not restricted by weather conditions, has good flatness, and does not require any maintenance at ordinary times. Cement floor is the most common ground material in kindergartens around the 1990s, and it is still commonly used in many rural kindergartens. Commonly used soft floor materials, the plastic field, are composed of polyurethane prepolymer, mixed polyether, waste tire rubber and other materials. Due to its

³⁵ Victoria Ballard Bell. Patrick Rand. (2014). *Materials for Design 2*. Princeton Architectural Press.

proper hardness and elasticity, wear-resistant, non-slip, and bright colors, it can reduce the rate of fall injuries. In recent years, plastic venues have become a common ground material used in kindergartens in my country.³⁶

It is worth noting that this material is wood chips, especially anticorrosive cork chips after special treatment. Anti-corrosion, waterproof and soft enough, it is a good planting cover, and it is also an excellent ground protection material. It protects the natural beauty of kindergartens, protects children's safe games and sports, and also protects the earth's ecology and environment, giving children opportunities and rights to get close to nature.

6.4.4 Shape

Children's cognition of shapes is a process. In the early stage, children cannot recognize some regular shapes, so they will draw some unknown figures. This is the inherent characteristic of children. The well-known child psychologist Piaget divided the development of children's geometric concepts into four stages³⁷:

Stage 1 (before 3 years old) Graffiti stage. At this time, the child can initially memorize some simple figures (such as circles, squares, triangles), but they do not have a deep understanding and it is difficult to draw them by themselves.

In the second stage (3 to 4 years old), they can distinguish closed figures and open figures, as well as the internal and external relations of the two circles, and the intersecting relationship, but they cannot distinguish between different closed figures. At this time, when children draw circles, squares, and triangles, they can only draw approximate figures.

In the third stage (4 to 6 years old), they can distinguish between straight lines and curved shapes, but they cannot distinguish between complex straight lines. The cognition of straight

³⁶ Tang Hongliu, Zhang Yan. (2019) *Analysis of the Relationship between Basic Attributes and Emotional Expression of Building Materials*. China Architecture Publishing& Media.

³⁷ Jean Piaget(1960). *Child's Conception of Geometry*.New York, Basic Books.

lines, angles, slopes, etc. began to develop.

Stage 4 (6-7 years old) Can draw all figures correctly and possess the shape concept of Euclidean geometry. At this time, the child can distinguish the common graphics more accurately and master the basic characteristics of some graphics.

At this stage, various living objects can be props for children to recognize graphics, which can not only enhance children's sensory sensitivity, broaden their vocabulary, but also achieve mathematics enlightenment. Therefore, the shape of some buildings or structures in the outdoor space is very important. On the one hand, this largely determines whether the building destroys the beauty of the outdoor space, or whether it is well integrated into the local nature. On the other hand, it is also more important, whether children can effectively perceive this shape. Irregular shapes are full of characteristics in children's eyes. They will give different shapes different names, which will stimulate children's imagination.

It is worth mentioning that in the design of outdoor teaching, the teacher will guide the children to form a circle, which is a common method used by teachers. Because of the centripetal nature of the circle, the child's eyes will unconsciously look towards the center of the circle. It can be seen that the ring can play a role in gathering people psychologically. Therefore, in the design of outdoor educational buildings, some of the same elements can be placed in a ring where children are expected to gather, or a ring-shaped device can be designed simply.³⁸

6.4.5 Size

The essence of architecture is to provide people with a space for production and life, and the direct psychological effect on users is the relationship of scale and proportion. Yoshinobu Ashihara's "External space design" pointed out that the ratio of the street width (D) to the cornice height (H) of the building facing the street will also have a relative impact on the user's

³⁸ Sue Bredekamp.(2016). *Effective Practices in Early Childhood Education: Building a Foundation* .Pearson 3rd edition

psychology.³⁹ When $D/H < 1$, the space is relatively closed, giving people a narrow psychological hint; on the contrary, the sense of closed space is not strong, and it appears relatively empty.

If the proportion of the building is out of balance, it will first give people a prominent psychological hint, and the application of materials is also a serious waste, then it will cause the user's psychological imbalance, resulting in an uncomfortable use experience. Such as the depression and visual impact brought by the large volume and the large scale; the orderly harmony brought by the good proportion; the meaning expression and emotional transmission brought by the shape and details.

Children's perception of space is different from that of adults. Therefore, when designing, we should pay attention to children's perspective and focus on children's scale experience.

6.5 Summary

Based on the above, I compiled a list of requirements of outdoor education schools for the architect's reference. According to the table below, we can think about what different conditions outdoor education needs to meet in different environments.

³⁹ Yoshinobu Ashihara (1918) , *External Space Design*. Yin P.T. China Architecture Publishing& Media.

Table A. Student's requirements			
		NEEDS	REQUIREMENTS
A1. Class requirements	A1.1 listen	Can hear	Choose a location in a relatively quiet area
	A1.2 Express	Can be heard	
	A1.3 Read	Can read in a quiet and well-lit place	There is a shelter with only the roof, and a relatively quiet space. No wall around is good for children's thinking divergence
	A1.4 Write	There is a platform where you can write and draw	Use natural elements to set up desks and benches like tree stumps
	A1.5 Drawing		
	A1.6 Self-learning	There is room for personal thinking	Set up some semi-enclosed spaces to give children a stronger sense of security and a quieter space for independent thinking.
A2. Physiological requirements	A2.1 Lunch	There is a separate area for lunch	Clearly divide the different functions of each area in the site.
			Set up some necessary infrastructure in the lunch area, let the children sit down and eat slowly.
			Set up a place for hand washing and fruit washing.
	A2.2 toilet	Have these daily necessities to ensure that participation in outdoor courses is not affected	The construction of infrastructure in the site, such as toilets and trash cans. But pay attention to these elements not to occlude the field of view.
	A2.3 garbage can		
	A2.4 illumination	Meet the basic needs when the light is insufficient	Lighting equipment is provided on the infrastructure in the site.
A3. Security requirements	A3.1	Will not hurt the body during exercise	Recyclable soft materials, such as anticorrosive wood, are used for the artificial ground in the site.
	A3.2	Will not be bitten by animals outdoors	Choose a relatively safe place without ferocious wild animals
	A3.3	Not get lost	Set up eye-catching placards at necessary locations in the site.
	A3.4	Safe during rest	Explain the class time carefully and set up a clear rest area.
	A3.5	No traffic accidents	If you choose a site close to the road, a separation zone that does not block the line of sight should be set between the site and the road, such as bushes.
	A3.6	Actively respond to weather changes	Set up shelters, semi-enclosed spaces, and fully enclosed buildings.
A4. Sports requirements	A4.1 Balance training	Walk	According to different environments. You can set up a professional track, or you can set up professional equipment like a balance beam for intensive training.
		Run	
	A4.2 Limb coordination training	Jump	Set up a safe area to exercise children's jumping ability, such as placing irregular stones on a relatively flat grass.
		Climb	Set up children's rock climbing projects to exercise children's coordination of limbs on the basis of safety measures
		Drill	Use natural factors to build arched facilities on the site to satisfy the children's heart that likes to drill around. At the same time, if the equipment is set low enough, the climbing training can also be completed at the same time.
	A4.3 Limb strengthening training	Throw	Set up some simple upper body strength training equipment, such as single and parallel bars.
	A4.4 Comprehensive training	Children's basic play needs	Set up some safe and common amusement facilities, which can be combined with the ups and downs of the site.

A5. Adaptability requirements	A5.1	Children are willing to walk into this outdoor education camp	The buildings in the camp are planned on a child's scale, with positive and varied colors
	A5.2	Children are willing to communicate and play with their peers	There are signs or play facilities in the site that can immediately attract children's attention, allowing children to quickly generate common topics.
	A5.3	Children is willing to walk freely in the camp	The path design in the camp is clear, it is necessary to set up more colorful elements or slogans, and reduce the negative color factors such as cement roads.
	A5.4		The area in the camp is clearly and organized
	A5.5		Reduce sight obstructions in the site, a wide field of vision can increase children's sense of security
A6. Creativity requirements	A6.1	Desire to create	Brightly colored devices stimulate the senses
	A6.2		Set up painting walls or creative works display areas to encourage children to create
	A6.3	Cooperate with classmates actively	There are signs or play facilities in the venue that can immediately attract children's attention, allowing children to quickly generate common topics.
	A6.4	Creative ideas can be realized in many ways	There are a variety of natural materials in the venue for children to choose, especially the exclusive area with three types of materials: water, sand and stone
A7. Exploring ability requirements	A7.1	Learn to actively discover the world	There are a variety of plants and different natural objects in the area
	A7.2	Learn to proactively raise questions	Set up vegetable plots and other areas in the area, and participate in the process of understanding
	A7.3	Generate a desire for further understanding of knowledge	
	A7.4		Set up a relatively quiet space, so that children have the opportunity to be alone and think about problems on their own
A8. Emotional requirements	A8.1	Can be alone with parents	Set up some semi-enclosed spaces to give children a stronger and quieter space for independent thinking, or to strengthen the communication between parents and children or between teachers and students.
	A8.2	Can be alone with the teacher	
	A8.3	Can be alone	

Figure 14. Table of student's requirements.

Source: by the author

Table B. Teacher's requirements			
		NEEDS	REQUIREMENTS
B1.Class requirements	B1.1	Hear what the students are saying clearly	Choose a location in a relatively quiet area
	B1.2	Let students hear what they are saying clearly	
	B1.3	Course preparation	There is an area for course preparation and an area for placing teaching props.
	B1.4	Can quickly organize student gatherings	Signs or buildings with conspicuous logos
	B1.5		The circular building design is more conducive to gathering students.
	B1.6	Rich course setting	There are sandboxes, water, and vegetable plots.
B2.Security requirements	B2.1	Ensure that children will not run out of safety.	Set up an isolation belt around the venue that does not block the sight, especially when the venue is close to the side of the road. Such as bushes.
	B2.2	Can take care of every child in the venue	Minimize sight obstructions in the venue. The wide field of vision allows the teacher to see the position of each child clearly
	B2.3	Can quickly walk to a child who needs help	Set up a reasonable path in the venue
B3.Rest requirements	B3.1	Safety during rest	Carefully state the class time and set up a clear rest area.
	B3.2	Lunch	Clearly divide the different functions of each area in the venue, and set up a special dining area.
			Set up some necessary infrastructure in the lunch area, such as tables and chairs, so that children can sit down and eat slowly. Set up a sink.
	B3.3	Recreation area close to nature	Set up a safe lawn area.
B4.Communication requirements	B3.4	Happy rest area	Set up areas for children's basic amusement facilities, such as slides and seesaws.
	B4.1	Have a chance to communicate with children individually	Set up some semi-enclosed spaces to give children a stronger sense of security and a quieter space for independent thinking, and it can also strengthen the communication between teachers and students.
	B4.2	Help introverted children participate in activities	
B5.Appearance requirements	B5.1	The camp is beautiful enough to attract children	The camp has a variety of positive colors and irregularly shaped facilities.
	B5.2	Even in nature, the building is not too obtrusive	The building is as close to natural materials and colors as possible, using some reusable elements and materials
	B5.3	Have a clear entrance	There are obvious signs at the entrance of the camp, and there are also obvious signs at the necessary positions in the site
	B5.4	Sustainable	The building design uses sustainable materials. The infrastructure in the camp uses some reusable components.

Figure 15. Table of teacher's requirements.

Source: by the author.

Chapter 7.

Survey on a school in Guiyang, China, discuss about how to introduce the concept of outdoor school into traditional education.

7.1 The basic information about the school

Shimen National School is located in Shimen, Weining County, Guizhou Province, where the average altitude is over 2,000 meters, belonging to the alpine mountains. From mid-October to March every year, "cold" is the deepest feeling of the people.

There are 22 teaching classes 6 grades, with 988 children totally. The age range of students is 7-12 years old, and there are 78 faculty and staff in the whole school. Since 2016, the educational development of Shimen Township has entered a period of comprehensive acceleration. Due to lack of sports venues, crowded accommodation and insufficient functional classrooms, Shimen School began to relocate to a new campus. Wide plastic running track, standard football field, red and white student apartments and teaching buildings... In this mountainous area where flat land is scarce, the new Shimen School, covering an area of 6 million square meters, is situated on the smoothest land in the township. With better education infrastructure, students can learn and grow better.



Figure 16. Location of the primary school.

Source: by the author



Figure 17. Location of the primary school.

Source: by the website

7.2 Why do I choose this school?

The village where the school is located is in the mountainous area of Guizhou, surrounded by mountains. There is a small amount of flat land in the middle where crops can be grown, and a stream runs through the village. In 2015, the road connecting the village with the city was just completed, and the village is still in an excellent natural environment without being heavily polluted. At the same time, the school has sufficient teaching facilities and educational resources to meet the basic needs of students in their study and life. The school is surrounded by mountains to the north and farmland to the east, where natural resources are concentrated. Therefore, the school has great potential to develop into an iconic outdoor education school.



Figure 18. Picture of the Weining Country



Source: by the website

7.3 Necessary condition of building an outdoor school in forest.

7.3.1 Nature condition

(1) Geographical location and surrounding environment

The school is located on a flat ground in the center of the village, surrounded by mountains and rivers. The mountain has ups and downs, which is suitable for rock climbing and other projects. There are deep rivers and streams with only 10cm, which can carry out water training.

It is suitable for carrying out rich natural education. The village was renovated in 2013, and a perfect highway and railway system with surrounding cities was established. Although surrounded by mountainous areas, the driving is convenient, and the average driving speed can reach 80km/h. It is conducive to connecting with other cities and facilitating the experience of school students and teachers in other cities. There are 7 cities around Weining county, including 21 primary schools and 15 middle schools, about 71000 students. If this outdoor education school is successfully transformed, it will bring a new learning experience to these 70000 students.

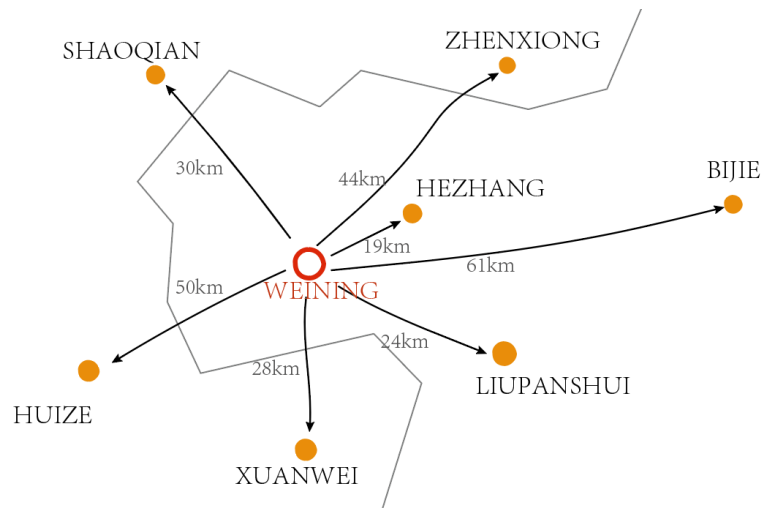


Figure 19 Distance between Weining and other cities

Source:by the author

(2) Vegetation distribution

Due to the complexity of geology, topography and climate conditions in Guizhou, the soil types are also extremely complex, including red soil, mountain yellow brown soil, mountain meadow soil, etc. At the same time, there are many kinds of rock and soil: Black lime soil, purple soil and so on.

Affected by these natural factors, different hillsides have different vegetation in Weining County. According to statistics, the forest coverage rate in Guizhou is as high as 50%, and the number of vegetation species is as high as 227 families. At the same time, as the province with the highest origin of traditional Chinese medicine in China, the province has 576 kinds of Chinese herbal medicine, accounting for 70% of 823 kinds in China.

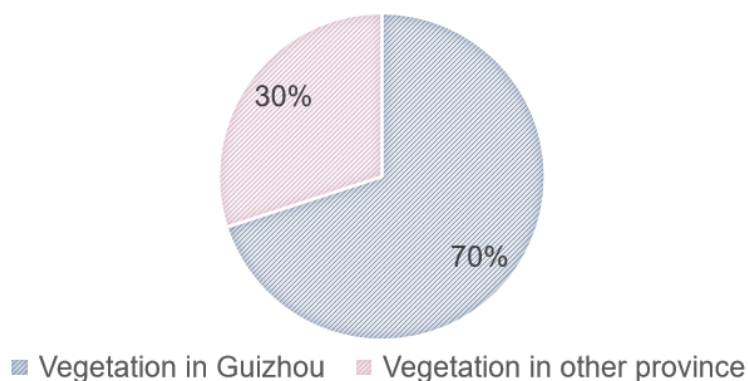


Figure 20. Vegetation distribution in Guizhou province and others in China

Source: by the author

(3) Climate

Guizhou has a humid monsoon climate. (fig 21) Due to its low latitude, high altitude and rugged surface, the cold air in the north and the warm current from the south often intersect here to form a static front. Therefore, it is characterized by "no intense heat in summer, no severe cold in winter, the rainfall is abundant and the rain is hot at the same time." The weather condition is stable and there will be no extreme weather in class, so as to reduce the risk brought by weather changes to the class.

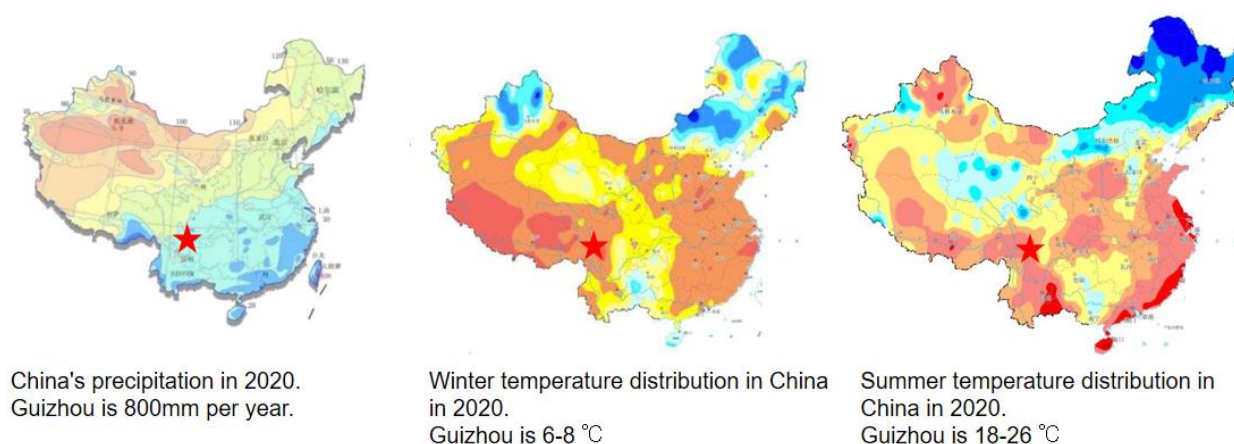


Figure 21. Climate in Guizhou in 2020.

Source: by the China Meteorological Administration website

(4) River system

A tributary of Wujiang River in Guizhou Province flows through Weining county. Wujiang River is an important water system in China and one of the eight tributaries of the Yangtze River. Its water volume is equivalent to that of the Yellow River. Therefore, there are deep rivers and shallow streams in the village, and different water courses can be carried out.

7.3.2 Special culture condition

Many villages in China have their own cultural characteristics. This village is famous for making a special kind of tofu. Tofu is a traditional Chinese food, and Weining county has a special kind of tofu called Hand Torn Tofu. This special craft is the unique culture of this village. At the same time, there is also a very famous plant in Guizhou: Broken Ear-Root. This plant is famous for its fishy smell. Because of its peculiar taste, few people can accept it as a food, but Guizhou people prefer it very much. In the local area, you can also learn the planting technology of Broken Ear-Root from fellow villagers to continue this unique culture. At the same time, Weining county was also rated as one of the "15 Chinese herbal medicine villages" in China in 2016. The village has rich Chinese herbal medicine planting experience and herbal medicine planting base. Rich vegetation types and food characteristics are the cultural characteristics of this outdoor education school.



Figure 22: Special culture, from left to right: Hand Torn Tofu, Chinese herbal medicine, Broken Ear-root.

7.3.3 Infrastructure condition

The school was rebuilt in 2013. It has sufficient teaching resources, teacher resources and a more comfortable indoor learning environment, which can meet the requirements of storing outdoor teaching tools. It also has rich forest resources. On the basis of such conditions, in the process of construction, we should pay attention to the following points:

First, remove the high-risk factors in the forest land, such as poisonous animals , snakes and centipedes, as well as poisonous plants. Second, maintain sites that may cause safety accidents, such as large steep slopes or ground full of rubble. Make effective use of safe steep slopes to form a climbing project area. Third, put in some facilities related to forest school. At the same time, we should make effective use of natural resources as much as possible.

7.3.4 Sustainability in the school

Promote sustainable and environmentally friendly materials in construction, ensure that each part of the material is recyclable and reusable, and is technically perfected. During teaching, try to use the resources in the natural environment and reduce unnecessary resource consumption as much as possible. Pay attention to protecting the environment in outdoor activities, and ensure that no domestic garbage is left after the course, so that nature will always be natural.

As the lifestyle in the village has not been changed, many abandoned daily necessities or work tools come from forest resources. Recycling these abandoned resources can protect the environment while building the campus. For example, children like to cut waste tires into strips

and jump around them. This is called "jumping rubber band" in China. Now we can move more things like waste tires into outdoor classes and make the best use of them.

7.3.5 Maintenance and long-term development

(1) Long-term planning

Different areas in the forest school include log circle, fire circle, mud kitchen, toilet, fairy tale village, physical fitness area, etc. of course, these areas can not be built in one or two days, so we can adopt the three-year plan of the site. In the three-year plan, we need to clarify the objectives. For example, the previous year was to improve the safety construction of the site, The next year is to launch the large facilities of the site, and the next year is to supplement the site environment. Then, in such a three-year planning goal, the gradual enrichment of the site can be realized, and the three-year planning also includes the construction of forest trees, such as allowing trees to grow in a sustainable cycle and enriching the biodiversity of forest land.

During the creation of the development, someone is needed to maintain the outdoor education camp, whether it is a farm or a facility in the forest. At this point you can choose from the teachers and students of the school to look after the facilities. This will not only maintain educational facilities, but also promote students' responsibility.

(2) Use is maintenance—in the farm

For the natural environment, overuse is the destruction of the environment. In artificially developed environments such as farms and gardens, use is maintenance.⁴⁰ When the students planted in the farmland, when the students kept turning the soil, when the students watered the crops, are maintaining the farm this land. People are an important part of the farm ecosystem, so it is best to maintain the farm by guiding students in the right way. However, the children's plants still need to be looked after by a more professional person to ensure that after

⁴⁰ Carolyn Nuttall and Janet Millington (2013), *Outdoor classrooms, a hand book for school gardens*. Permanent Publications, 2nd edition (December 15, 2013). pp75-110.

the students have successfully planted the plants, the final fruit will be successful.

7.4 How to replan the outdoor space.

The rural campus has a high degree of freedom in space. Many rural campuses do not even have walls. Before the reconstruction, the playground of the campus was often passed by villagers' livestock.

The transformation of the school is not to completely ban the previous role of the school, but to reconstruct the undeveloped outdoor space of the school on the basis of retaining the original indoor teaching function. This can not only ensure the maintenance of the original teaching order, but also promote the development of outdoor education mode on a stable basis.

The school is on the only relatively flat piece of land in the hill-ringed village, with its two buildings facing south, backed by a forest. The south slope is the playground. On the east side of the campus, adjacent to residential areas, there is a relatively flat rice field that can be used as a student experience farm. On the west side of the playground there is a small patch of waste land which could be fixed up for livestock. The hill adjacent to the north of the campus can be used as the site of "Forest School", which is convenient and safe.

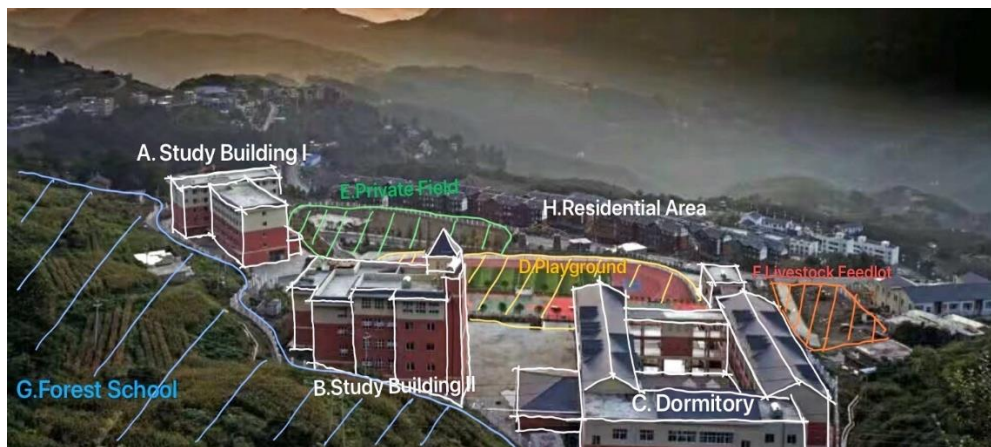


Figure 23, redesign the outdoor space.

Source: pic by website, edited by author.

In the middle of the existing campus building, Spaces based on "BOX" elements can be added, which are versatile and flexible. Similarly, the same elements can be added to rural forests and fields to meet the functional needs of various Spaces. According to the elements that students want to see in the site mentioned in CHAPTER 5, the introduction of the concept of "BOX" can combine different kinds of boxes to form a variety of functions and styles. Here are the functional boxes based on the elements designed by the students themselves. And according to the needs of different sites, can be placed in different sites.



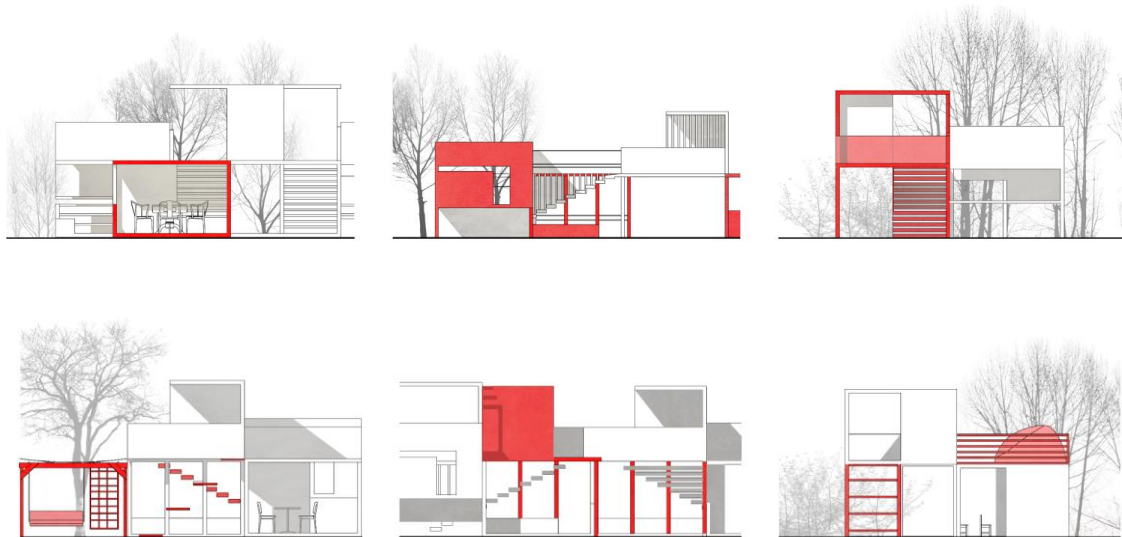


Figure 24. Function BOX

Source: by the author

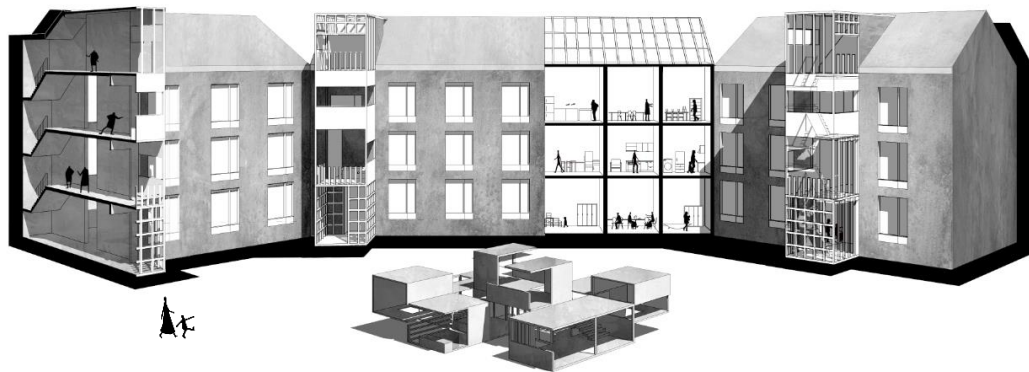


Figure 25. Function BOX in the campus buildings (dormitory)

Source: by the author.

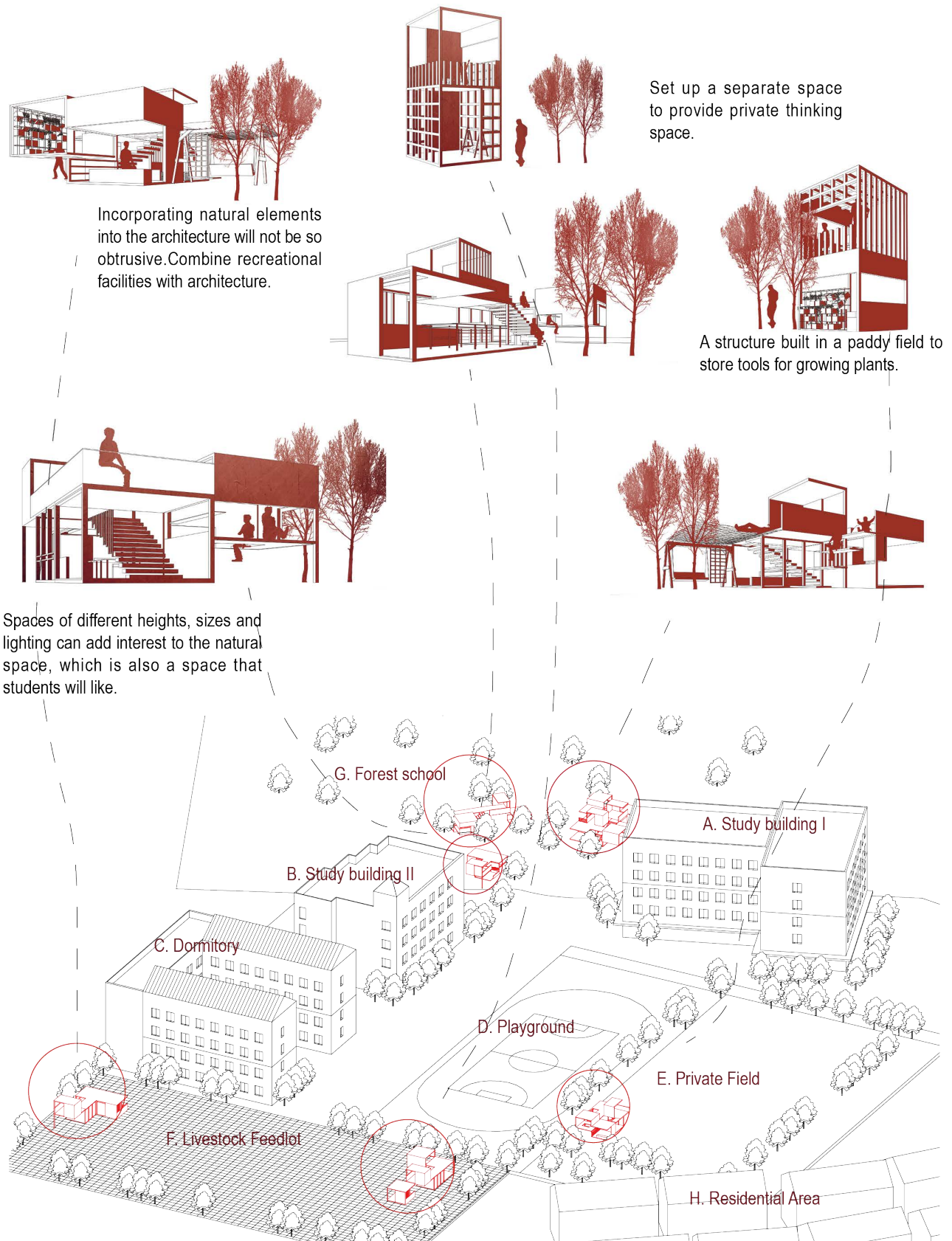


Figure 26. Design of the rural forest school

Source: drawn by the author

7.5 The significance of rebuilding a rural school.

The reconstruction of rural schools into outdoor schools can promote the economic development of rural areas, and let more people go to the countryside to understand the unique culture of the village. Moreover, it is also a good way for rural children to see the outside world. After all, it is the best communication between peers. At the same time, on the basis of outdoor education, the awareness of "environmental protection, learning from nature" can be strengthened to popularize in rural areas. Preserving the natural scenery of Rural China is the most important cultural protection.

7.6 What should we do base on the COVID-19 pandemic.

Along with spaces, paths: make education visible by frequenting streets, squares, green areas, places of proximity and discovery with children, to be explored directly, with your own body and senses to build thought and language.

Outdoor education is more than ever a practice capable of connecting all areas of life, relationships and training for boys and girls, for boys and girls, as well as an opportunity for a pedagogical project that returns this to childhood. which over time has been taken from her.

On the other hand, under the influence of the pandemic, many parents had to change their thinking. They will feel that a long indoor course will be a safety hazard. If the children can be allowed to go out, the outdoor course will be more interesting and safer than indoors. On the other hand, it can also increase children's resistance and improve their ability to resist viruses.

7.6.1 Face to face is absolutely necessary.

Under the pandemic, although various countries have implemented online teaching policies, such teaching is far less effective than face-to-face teaching. The teacher can't see every

student's face, and the students can't respond in time. Many times the professor will feel that he is talking to himself, or the students will feel that the professor has not understood his point of view. The dialogue across the screen is always unsatisfactory. So face-to-face is absolutely necessary. So we have to figure out some ways to achieve face-to-face teaching under severe special circumstances.

7.6.2 The forest school.

In a pandemic, people reduce their exposure indoors, but outdoor exposure can greatly reduce the chance of viral infection. Therefore, it is safe to carry out teaching work outdoors where there is less traffic. Forest school is one of the indispensable. The main goals of forest school in primary age children includes encouraging curiosity and exploration with all of the senses, empowering children in the natural environment, and encouraging spatial awareness and motor development. Forest schools usually provide a higher adult to child ratio than some learning styles, in order to ensure children are supported sufficiently in a higher risk environment.

Children have the freedom to explore the area within the forest, this helps the child to learn to manage their own safety and move around comfortably. The programme allows children to grow in confidence and independence and extend their abilities.

Some children do not perform well in classrooms. They are encouraged to develop their innate curiosity and develop the motivation to learn. They may come from a non-academic family background, may just not be comfortable with the organization of a teacher standing in front of a group of pupils. Boys in general, prefer to be outside, and learn better in this way.

In China, forest education has not been realized, because it is a difficult event to organize and there are great risks. But we can realize this idea from the perspective of parent-child interaction.

7.7 Summary.

The primary school in a mountain village in Guiyang has the basic elements to become an outdoor education school that can satisfy children's curiosity about nature and life. While

learning cultural knowledge, they can acquire more abilities through experience. These are exactly the kinds of lifestyles that children in the city don't learn about. Similarly, transforming rural schools into outdoor education schools is the best way to let more children get in touch with nature at the present stage in China. Organized by the school, teachers lead, into another school, parents can rest assured that such an organization. Students can not only touch nature and stimulate their potential, but also develop self-reliance, teamwork and the ability to anticipate danger. They can deeply recognize the hard work of the working people in the process of experiencing labor, so as to cherish the present life more. At the same time, when the urban children go to the countryside, they will complete tasks with the rural children. The communication between the children is also the best way to open the vision of the rural children. Let the wide world plant seeds in the hearts of children, can encourage them to study hard in the future, go out of the mountain, and finally learn to build their hometown.

Table C Feasible aspects of Outdoor School in China (Taking a primary school in Guizhou Province as an example)			
NEEDS		PROVIDE	
C1. Geographical location	C1.1 Convenient transportation	The highway and railway systems have been improved	There are 36 schools in 7 surrounding cities, benefiting 70,000 students
	C1.2 Wide radiation range	Nearby cities and schools	
	C1.3 Rich knowledge of classroom teaching	Rich vegetation resources	It is the province with the largest variety of vegetation in China, which is conducive to enriching the content of outdoor teaching activities.
		Rich soil resources	Mountainous area, undulating terrain, easy to carry out climbing class teaching activities.
		Rich terrain changes	
		River.	The water ecological course
		Stream.	Experience in water activities
C2. Infrastructure	C2.1 To ensure the teaching	Basic teaching facilities	60 classrooms and matching infrastructure.
		Eating and sleeping	Have a canteen and dormitory.
C3. Security guarantee	C3.1 Controllable teaching scope	Clear vision of forest environment	The outdoor teaching forest is adjacent to the school.
	C3.2 Safe transportation	Close distance	From the indoor classroom to the outdoor classroom only through the back door of the school.
	C3.3 Environmental safety	Non-toxic plants	Check harmful plants and animals before teaching activities.
		Animal harmless	
	C3.4 The weather changes	Geographical environmental hazard	Special isolation of steep terrain for climbing classes.
		The climate is suitable	There is no cold in winter and no hot in summer, the climate is stable, and the teaching schedule is not susceptible to weather changes.
C4. Cultural features	C4.1 Distinctive culture	The weather is stable	
		Traditional specialty food	Making process of Hand-torn Tofu.
C5. Campus maintenance	C5.1 Keep the school running	The city of Chinese herbal medicine	Known as one of the "Ten City of Chinese herbal medicine", Chinese herbal medicine planting technology.
		Crop maintenance	There are local villagers to maintain, paid, to help local farmers employment.
		Camp maintenance	Local teachers and senior students are in charge.
		The long-term development	In response to the call of the Chinese government, educational reform has developed gradually.

Figure 27. Table C Feasible aspects of Outdoor School in China

Source: by the author.

Chapter 8.

Final Conclusion

The purpose of outdoor education is to enable students to learn independently what they can learn in class or more during outdoor activities. Therefore, it is a positive, healthy and effective way to learn. The development of outdoor education in several Nordic countries is relatively advanced, and they even integrate outdoor education into daily classroom learning to cultivate children's outdoor activity ability. In this way, children have been fully physical and mental exercise, not only will not be injured, but more understand how to protect themselves when danger comes, physical quality will be stronger.

However, not all European countries have popularized outdoor education like Denmark or Finland. In fact, most European countries are still actively looking for their own outdoor education model. Designers and teachers of outdoor education should think about how to transfer knowledge more effectively in outdoor education, how to connect the ability of learning in outdoor education with the education system, how to avoid harm to children in the process of outdoor learning, and how to transform the outdoor space to achieve the best education environment.

In China, outdoor education is almost a new educational concept. Constrained by the traditional education methods, as well as the influence of China's national conditions and social development, the traditional exam-oriented education still accounts for almost 100% of China's education methods. So outdoor education in China can only slowly advance. Due to the pressure of life, heavy social responsibility, many parents have no time to take care of their children's education, but the hope of life on their children's academic performance. This makes children unknowingly bear more and more pressure when they are facing one exam after another. Life, work, examination and entering college have become the four most important words in every family in China. To get Chinese children out of the classroom and into nature, it is impossible to go against traditional education. Only by following the traditional thinking of Chinese parents can we get twice the result with half the effort. Therefore, it is an important method to take the first step of "promoting outdoor education" by introducing the concept of

inheriting traditional culture and "thinking of the source when drinking water" and pushing rural life to the front of urban school education. Let city students know rural life and feel the natural world without electronic products. This can not only promote the development of outdoor education in China, but also accelerate the pace of rural development in China. As a developing country, China is duty-bound to actively build every village.

Based on the introduction and division of outdoor space of the Shimen Primary school in Weining Country, Guizhou province, this paper takes Shimen School as a case study and designs it as a rural outdoor education school, hoping to start from a school and find more rural schools, so as to gradually realize the promotion of outdoor education in China. For the design and planning of outdoor education school space, we still need to start from the demand. The users of outdoor education are primary school students, so we should know what primary school students like and want. In September 2021, I participated in the workshop. After summarizing the activities of about 50 primary school students, we drew a series of conclusions about what kind of facilities and design students prefer in the outdoor environment. For example, many children prefer clear functional division in the space and perfect living infrastructure.

Outdoor education is more relaxed than traditional indoor education, so that children can release their nature more freely, but also more independent to understand the appearance of the world, understand their own hobbies, while learning knowledge, exercise practical ability, interpersonal skills and other necessary skills in life. Therefore, we have to say that outdoor education will be the trend of educational development in the future, and it is imperative to promote outdoor education.

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