

# Research on Innovative and Distinctive Science Education Programs Based on Nature in Rural Kindergartens

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**Abstract:** The foundation of primary education is laid by rural kindergartens, which take on the significant responsibility of teaching children scientific literacy, practical skills, and other aspects. The local environment that young children live in is the basis for the rural curriculum education resources. Once it has been tapped and organized, children's engagement and enthusiasm in learning can be enhanced. The introduction of localized resources can improve teaching content and raise students' engagement and enthusiasm in learning. Based on this, the author proposes a school-based curriculum development model that utilizes localized knowledge. Building and improving evaluation mechanisms can enable prompt assessment, adjustment as well as enhancement of teaching effectiveness. In summary, this study is of great significance for promoting the development of local curriculum resources for science teaching in rural kindergartens and can be taken as a reference for their development and use.

**Keywords:** Rural kindergarten; Innovative and distinctive science education programs; Nature

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## Foreword

As the rural environment offers the best opportunities for children to interact with nature, rural kindergartens should utilize the wealth of local resources available to them to stimulate children's scientific curiosity and to improve their practical abilities. We need to create a carefree learning environment where children can learn to observe, discover, think, and explore. In practical use, we need to make the most of the distinctive characteristics of rural kindergartens to develop children's strong interest in science, and actively explore their potential. Meanwhile, we should also give them scientific instruction, thereby completely liberating their hands, feet, and brains. According to the "Kindergarten Education Program Guidelines (For Trial Implementation)", teachers should encourage young children to accumulate beneficial experiences and perceptual knowledge through contact with nature and various things and phenomena in life. The natural environment in rural areas provides an opportunity for young children to conduct scientific exploration. Therefore, we should fully utilize the natural environment to carry out a rich variety of games and practical activities to ensure that young children can learn through play.

## 1. Analysis of the development status quo of rural curriculum resource

### 1.1 The definition and features of rural curriculum resources

"Rural curriculum resources" refers to a way of curriculum design that naturally combines teaching and learning content with the real-life environment that young children live in. Young children can develop an intuitive grasp of scientific knowledge by learning about the unique environment, historical culture, and natural resources of rural areas. They should start their scientific exploration with things around them. Teachers should give young children the space, materials, time, and opportunities to fully utilize the educational benefits of local resources if they want them to grow up to be science enthusiasts, truly understand and love science, and feel that science is not beyond their reach—just within the bounds of the abundant local resources!

## **1.2 The problems in the development and utilization of local curriculum resources**

Firstly, there is a lack of systematicity. Rural kindergartens lack systematic planning and design when adopting local curricular resources, which results in a lack of diversity and effectiveness in teaching methods and content. Secondly, teachers are not qualified enough. Because rural teachers are often of lower quality, they are unable to adequately tap and utilize resources from the local curriculum and are unable to adjust their teaching methods to the demands of young children. Thirdly, there is a lack of effective evaluation mechanisms. Teaching evaluation of rural curriculum resources is a challenge for rural kindergartens, and the evaluation methods and metrics used are not objective and scientific enough<sup>[1]</sup>.

## **2. The Innovation of this study**

### **2.1 Innovation in topic selection**

A search on relevant websites like “CNKI” reveals that very few scholars have looked into this subject at the moment. While only one piece of the literature currently in publication focuses on curriculum construction in the scientific domain, the majority is “research on natural and Kindergarten-based Curriculum.”

### **2.2 Conceptual innovation**

Currently, rural kindergartens in China have not made the most of their unique advantages. Instead, they have heavily replicated the varied hardware equipment of urban kindergartens and mimicked the “advanced” kindergartens in cities. This program focuses on the unique natural characteristics of rural areas, breaks free from the limitations of urban education concepts, and explores an innovative and distinctive curriculum path. It is based on the close relationship between rural areas and nature<sup>[2]</sup>.

## **3. The theoretical significance and application value of this study**

### **3.1 Theoretical significance**

This study can offer a fresh perspective on modern “natural education” by drawing on Chen Heqin’s “living education” theory as well as the ideas of Chinese and international educators on “nature and education” in the field of natural learning. Additionally, from the perspective of innovative curriculum development, this study can improve and complement the development of the kindergarten curriculum in preschool education.

### **3.2 Application value**

With kindergartens serving as the research object, this study is grounded in the real conditions of kindergartens and takes into consideration the inquisitive nature of young children. It is based on the natural conditions of Xinfeng County. This study can also allow teachers to take part in curriculum design, which will improve their course knowledge and development capabilities and help them progress professionally. Ultimately, this study will enrich the practical experience of kindergartens, reflect the characteristics of rural kindergartens, and serve as a reference for the development and utilization of other types of kindergartens<sup>[3]</sup>.

## **4. Development of Innovative and distinctive Science Education Curriculum Based on Nature in Rural Kindergartens**

### **4.1 Change educational philosophy**

“Early childhood education is by no means aristocratic.” Such feelings are frequently expressed by rural kindergarten teachers. If they want to carry out science education more successfully, they must establish a new perspective toward education, resources, and young children. They need to reevaluate their conception of educational work and acknowledge that education is not just about imparting knowledge but also about fostering the holistic development of young children. Meanwhile, it is vital to reevaluate the available resources and recognize and utilize any natural or social resources that might be overlooked. Kindergarten teachers in rural areas must be aware of their responsibilities and missions. In addition to being teachers, they are also inheritors of rural culture and traditions. By developing and utilizing distinctive rural resources, we can contribute to the development of rural communities while simultaneously offering children diverse educational experiences<sup>[4]</sup>.

### **4.2 Tap the abundant local resources to help rural children to learn science**

Young children can learn and explore from the dirt, sand, water, and other objects that are available everywhere around rural kindergartens. They can build stoves out of small stones, construct bridges out of small branches and wooden sticks, and even collect some hay and a few leaves. Under the guidance of teachers, young children can understand the characteristics of common items and phenomena in their surroundings, which will ignite their interest in science education. For instance, the ground of our kindergarten is brick-paved, and when a kindergarten teacher is playing with the children, a child may suddenly notice that fresh grass has sprouted

in the spaces between the bricks. Even beneath the heavy bricks, the grass continues to grow. In such a case, the teacher may realize that this is a good teaching opportunity, so she intentionally guides other children by asking, "Look, where is the grass growing?" She hopes that young children can discover this peculiar phenomenon on their own. The children may start looking for land without any grass growing on it with the teacher's guidance. They may find that in places where bricks are placed, especially in areas where sunlight cannot reach, grass does not grow. Through such practical exploration, young children can gradually understand that on hard surfaces such as sand, stones, and bricks, where the soil is compacted or covered, sunlight can't reach the soil and support the growth of grass. Only in areas with plenty of sunlight and soft soil can grass thrive<sup>[5]</sup>.

### **4.3 Parents make full use of community resources to promote the integration of collaboration between the home and the school**

Involving parents in kindergarten childcare and education, as well as synchronizing home and school education, are inevitable trends in the development of early childhood education. First and foremost, though, we need to change rural parents' educational philosophies because they generally doubt their knowledge and ability to teach. We can have regular parent meetings, lectures on childcare and education knowledge, special open days, and "parenting classes" using propaganda tools like bulletin boards. Secondly, we can invite parents with expertise in various fields to join us in the exploration of science courses. For instance, Xiaoming's father has a large-scale farm. We can invite him to classify and explore the poultries that the children are interested in, as well as to tell them about his farming experiences. Also, we can ask Tiantian's grandmother, who is a fundus in vegetable gardening, how to take care of the garden. As a result, children's interest in learning can be greatly enhanced, and parents may also feel more responsible for their children's education. Children are more open to exploration when there is interaction between the home and school!

### **4.4 Conclusion**

Rural kindergarten education is confronting unprecedented opportunities and challenges as a result of the ongoing development of education reform, yet scientific education in these settings has a great deal of potential and value. In summary, kindergarten teachers must be grounded in reality, make full use of the natural resources available in rural areas, and apply them flexibly to provide a substantial amount of educational content for young children if they want to localize scientific education in rural kindergartens. Natural science curricula based on nature have a major positive impact on kindergarten education in rural areas. It can help to narrow the education gap between urban and rural areas and achieve educational equity.

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