Problems and Solutions in Implementing Science Education in Rural Kindergartens at Present

Yan CHEN
School of Primary Education, Zaozhuang College, Zaozhuang, 277300, Shandong
cy198311@126.com

Keywords: Rural kindergarten; Science education activities; Problems; Solution strategy.

**Abstract.** Compared with the city, the implementation of science education activities in rural kindergartens has some problems such as the lag of science education concept, the shortage of full-time teachers, unreasonable education contents, single teaching methods and organizational forms, and unreasonable evaluation. This paper puts forward some strategies to solve these problems: changing ideas, renewing the concept of scientific education in kindergartens, matching full-time teachers, establishing an effective training mechanism for rural preschool teachers, building a diversified training model for preschool teachers, making full use of rural resources, and establishing a correct evaluation concept.

**Introduction**

Kindergarten education activities include five areas: health, language, society, science and art, and science is one of the important areas. Science education for children is an important way for children to know the world around them and gain knowledge and experience, and it plays an important role in achieving the goal of kindergarten training. The National Guidelines for Kindergarten Education issued in 2001 clearly stated: "Science education for young children is science enlightenment education, focusing on stimulating young children's awareness interest and exploration desire." The State's Guidelines for Learning and Development of Children Aged 3 - 6 ( hereinafter referred to as the Guidelines ) issued in September 2012 mentioned that" the core of scientific learning for young children is to stimulate inquiry interest, experience inquiry process and develop preliminary inquiry ability. "It can be seen from the Outline and Guide that kindergarten science education is very important for children's development, but when we look at the current situation of the implementation of science education activities in rural kindergartens, we find that there are many problems. In-depth analysis of these existing problems and their causes has important practical value and significance for further promoting scientific education activities in rural kindergartens and improving the development level of rural children.

**The Main Problems Existing in Implementing Scientific Education Activities in Rural Kindergartens**

**Scientific Education Concept Lags Behind**

For a long time, many rural kindergartens only pay attention to the setting of traditional subjects, such as literacy, arithmetic, common sense, etc. According to the author's visit to parents, 73.4% of rural parents believe that children attending kindergarten are learning Chinese characters and arithmetic, while kindergartens strengthen literacy and arithmetic teaching to children for the sake of students and under the pressure of parents. Some administrators and directors also think that children should learn more pinyin and arithmetic. Some teachers do not understand the value of scientific activities because they have never received scientific education. They think that scientific activities are only for children to understand common sense. Even in some demonstration parks in villages and towns, scientific activities are only on the surface, but in the actual process of activities, the natural and social environment familiar to children's lives is often the main content, and teachers mainly use classroom teaching to ask children to remember some simple facts and truths. Using this method to
carry out scientific education activities in kindergartens will seriously affect the children's interest and the improvement of their overall quality.

**Lack of Full-time Teachers**

In January 2013, the Ministry of Education issued the "Kindergarten Staff Allocation Standard (Provisional)" which stipulates: "Full-time kindergartens are equipped with two full-time teachers and one nurse per class, or with three full-time teachers; The half-day kindergarten is equipped with 2 full-time teachers per class and 1 nurse if possible." In the actual teaching, the author found a serious shortage of full-time teachers in rural kindergartens through interviews and surveys. The standards for the establishment of teachers in various districts and counties are not in line with the reality of rural kindergartens. Taking Zaozhuang as an example, only 7% of the total number of preschool teachers are recruited each year in Zaozhuang. In recent years, with the expansion of non-rural kindergartens and private kindergartens, the conditions of treatment are much better than those of rural kindergartens, resulting in a large loss of full-time teachers in rural kindergartens. However, newly recruited teachers do not want to come to the countryside, making rural kindergarten teachers "unable to come", "unable to support" and "unstable", and the shortage becomes more and more uneven.

**Teachers' Professional Quality is not Ideal**

The low professional level of teachers is also a prominent problem in rural kindergartens. Chen Dongmei and others have chosen 12 kindergartens in Zaozhuang (of which 42% are private kindergartens and 58% are public kindergartens); were interviewed and investigated by questionnaires. The results show that at the academic level, preschool teachers with undergraduate education accounted for 17%, preschool teachers with college education accounted for 46%, preschool teachers with technical secondary education accounted for 21%, and preschool teachers below senior high school accounted for 16%. From the perspective of professional qualifications, at present, 46% do not have a teacher's qualification certificate, 38% hold a kindergarten teacher's qualification certificate, and 16% hold a primary school teacher's qualification certificate. In terms of treatment, only (10%) of preschool teachers are above 2000 yuan, (13%) of preschool teachers are 1500 - 2000 yuan, and (77%) of preschool teachers are below 1500 yuan. From the above data and through interviews, it is found that preschool teachers have low academic qualifications, low pay and lack of professional qualifications, thus affecting the healthy development of preschool education.

On the other hand, some students majoring in pre-school education have never studied the curriculum of science education and the design and practice of kindergarten education activities at school, but have only learned many theories and skills of singing and bouncing in preschool education. In practice, they do not know how to apply them to kindergarten teaching activities. Many students only begin to contact kindergarten and kindergarten teaching activities after graduation practice. The author randomly investigated three schools in Zaozhuang where preschool teachers were trained, only one of them had relevant courses. 69% of the students did not know how to design teaching activities before the practice, and 92% of the students did not want to carry out preschool science education activities in the kindergarten because they lacked scientific knowledge and had no confidence in carrying out science education activities.

**The Teaching Content is Unreasonable**

Kindergarten textbooks are used differently, and primary school contents have been added to varying degrees. According to the author's survey, the current teaching materials used in kindergartens include "Shandong Kindergarten Curriculum Guide" by Tomorrow Publishing House, and "Open Curriculum of Multiple Intelligences Activities" by Rural Reading Publishing House. In specific teaching, 65.5% of the teachers in large classes and all the teachers in middle and small classes and preschool classes added to some extent the content of Chinese phonetic alphabet, arithmetic and other primary schools, 34.5% of the large class teachers use the textbook of grade one in primary school. The scientific activities carried out in some parks are divorced from the reality of children's life, and some scientific knowledge that children are not familiar with or understand is
selected as the teaching content, which is time consuming and not interesting to children at the same time. In addition, there are some villages with kindergartens whose curriculum is rather messy, and they do not carry out corresponding scientific education activities according to children's different ages, and the contents are not systematic, even if some activities are planned, they are just decoration. Due to the lack of teaching pressure in rural kindergartens, some teachers follow their own inclinations, do not have teaching objectives and corresponding activity designs in carrying out activities, and some teachers do not even prepare lessons and do not write lesson plans.

Teaching Methods and Organizational Forms are Single

Science education in kindergarten should take the interest of children and their desire to explore as its main goal, emphasizing to overcome the drawbacks of traditional science education methods and only paying attention to the teaching of scientific knowledge. In the actual scientific activities, most teachers adopt the teaching method, which makes children lose their interest in learning. Some teachers pay attention to their own operation demonstration and explanation demonstration, but neglect the children's own operation. Although some of them have also arranged for children's hands-on operations, children's minds always operate under the direction of teachers, listen to teachers' explanations, see what teachers show them, and answer questions that teachers think children should answer and know. In the practice of kindergarten science education, some teachers have a deviation in their understanding of "child-centered" thinking that "child-centered" is to leave the child to himself without interference. Or because some teachers lack scientific knowledge and educational skills and methods, they cannot guide young children to conduct scientific activities in a timely and effective manner. These ways and means not only deprive young children of the opportunity to gain experience through hands-on operation, but also stifle their desire to actively explore and their interest in participating in scientific activities.

Evaluation is Unreasonable

Kindergartens often only attach importance to the teaching of scientific knowledge and the cultivation of scientific skills, and regard how much knowledge is taught and how many skills are cultivated as the main criteria for evaluating the teaching effect. However, when teachers evaluate scientific activities, they not only don't know enough about children's development level before the activities, but also don't pay enough attention to children's exploration process and performance during the activities, and often overemphasize the evaluation of children's learning results. The concrete expression is that teachers are used to judge the right and wrong of children's inquiry as "authority". The teacher's practice in guiding the children to explore makes them feel that the correct answer lies in the teacher's mind, and its performance is that the children always ask the teacher if they find out what is right or not. Over time, young children become dependent on teachers and try to cater to their ideas, so most teachers now play a more critical role than an active supporter and promoter.

Strategies for Implementing Scientific Education Activities in Rural Kindergartens

Change the Thinking and Renew the Concept of Kindergarten Science Education

Children in the 21st century have a wider range of knowledge and a stronger thirst for knowledge than their predecessors. They are smart, active, naughty and good at exploration, and do not like being bound by teachers and adults. The realistic needs of children's development and educational modernization put forward new demands on the traditional scientific education ideas and concepts, and it is imperative to change the traditional scientific education ideas and concepts. At present, the concept of preschool education advocates "teachers should guide children to participate in activities, stimulate children's interest in learning activities, cultivate children's curiosity, and enable children to develop in the process of observation, experiment, experience, cooperation and interaction. In kindergarten science education, we should really understand and grasp these advanced concepts of
early childhood education and use them to guide our own educational and teaching activities.”① As preschool teachers in the new era, we should establish a new concept of children and teachers and a learning concept of lifelong education, open education and education development.

**Equipped with Full-time Teachers, Strengthen the Construction of Preschool Teachers, and Effectively Improve the Level of Preschool Teachers**

According to the standards for kindergarten teachers, rural kindergartens are gradually equipped with teachers, and the proportion of public kindergarten teachers is continuously increased by employing pre-school education graduates or transferring surplus teachers from primary and secondary schools. At the same time, we should strictly implement the entry system for preschool teachers, implement the real-name system management for the employed non-compiled preschool teachers, and establish a mechanism for guaranteeing preschool teachers' wages and increasing their incomes. ② Strengthen the interactive communication between urban and rural areas, employ famous teachers and directors to guide the development of scientific education in rural kindergartens, and try to avoid the duplication and waste of training and training caused by the frequent flow of teachers.

**Establish an Effective Training Mechanism for Rural Preschool Teachers to Improve the Scientific Education Level of Rural Preschool Teachers**

Do a good job in the interaction between urban and rural areas, give full play to the exemplary role of the city experimental park or demonstration park, and be responsible for the training work of the township central park, which is responsible for the training work of the villages and towns. At the same time, the content of the training should be combined with the actual needs of rural areas, seize the center and break it down one by one. The government should adopt a flexible way to organize preschool education expert lectures or teacher training, emphasizing the training and improvement of preschool teachers' scientific literacy. Preschool normal colleges and universities should organize special scientific educators to attend lectures and observe scientific activities in kindergartens. Kindergartens should arrange corresponding teachers to prepare scientific activities. Teachers from both sides should discuss the subject of scientific education activities in rural kindergartens, design lively scientific activities and experiments suitable for rural children, gradually establish scientific education activities suitable for all ages in practice, and summarize effective steps and forms to guide children to carry out scientific education activities.

**Build a Diversified Teacher Training Model for Preschool Education and Offer Scientific Education Courses**

The reform of the preschool normal education system, as a preschool normal school that trains preschool teachers, should appropriately enrich the teaching content and set up courses related to kindergarten scientific education activities. The author believes that the current preschool normal education (including pre-school students in undergraduate colleges) should establish the following scientific education curriculum system: First, natural science curriculum. Including comprehensive science courses (such as physics, chemistry, nature, biology, geography, etc.). The second is the theory course of infant science education. Including preschool education, preschool psychology and preschool hygiene; The psychology of early childhood science education, the comparative education of early childhood science, etc. The third is the skill course of science education for children. Including the teaching method of infant science education, the design and guidance of kindergarten science education activities, the educational skills of infant teachers, and the training of infant science education experimental skills, etc. Fourthly, the practical curriculum of science education for children. Including educational investigation, probation, practice and trial teaching of early childhood

---


②Luoyingzhi and Li Zhuo. Current problems in rural preschool education development and their coping strategies. preschool education research, 2010, (10)
science education. These courses influence and restrict each other. In order to enable kindergarten teachers to complete the transition from learning to scientific teaching practice, setting up the course "kindergarten scientific education activity design and guidance" in kindergarten normal education curriculum can play a role of connection and transition.

**Make Full Use of Rural Resources, Adjust Measures to Local Conditions, and Form a Kindergarten Science Curriculum System with Rural Characteristics**

During the one-day activity, kindergarten teachers should choose the things that are common and interesting to children in rural areas and the actual life in rural areas as the content of the activity. This will help children truly understand science and love science, and children will feel "science is not far away, science is at hand. Therefore, rural kindergartens need not blindly copy the teaching contents of urban kindergartens or provide some teaching materials unfamiliar to rural children. We make full use of the inexhaustible and inexhaustible resources in the countryside to enrich the science education curriculum in kindergartens. For example, the sand, water and various plants that can be seen everywhere around the kindergarten in villages and towns can be the object of children's study and inquiry and a good material for children's scientific education. Let children explore earthworms, snails, crickets, ants, cicadas, poultry and livestock, and observe the characteristics of these animals. Let children understand the growing environment, characteristics and process of common vegetables and crops. Organize young children to pick, dig wild vegetables, cook vegetables, taste vegetables, etc. to make them curious and ask questions, and learn to express the exploration results in a way they like and share them with their peers.

**Set up a Correct Evaluation View**

Every preschool teacher should look at children from a developmental perspective."Our evaluation is to understand and judge the current level of children and provide basis for further guidance and promotion of children's development, rather than to judge the intelligence quotient of children and label children as good, middle, inferior or good, middle and poor". In addition, each child has its own characteristics, and there are great individual differences among children. Their development starting point, development speed, advantages and final development level are different. We should respect these differences among young children, make as few horizontal comparisons as possible, and see their own development and progress at the original level more.

**References**


---