

Exploration on Primary School Science Curriculum Construction and Teaching Reform Based on Core Literacy

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Abstract

Primary school science curriculum is the main carrier to cultivate pupils' scientific thinking and innovation ability, but it is not enough to rely on classroom teaching alone. Schools must create a social environment for science education and realize the sharing of educational resources. Taking Taian Yuefeng primary school as an example, this paper mainly analyzes and studies how to cultivate pupils' scientific core literacy from the three levels of school, society and family education, and reforms the curriculum content system and practical teaching methods.

Keywords

Primary school students; Core literacy; Innovative thinking; Innovation ability; Home school co Education.

1. Introduction

In 2014, the Ministry of Education clearly put forward the concept of "core literacy" for the first time in the Opinions of the Ministry of Education on Comprehensively Deepening the Curriculum Reform and Implementing the Fundamental Tasks of Lide Shuren. Learners should have the necessary qualities and important talents that truly meet the requirements of personal lifelong healthy development and rapid economic and social development, and identified six college students' core literacy with humanistic heritage, scientific spirit, learning to learn, healthy life, responsibility and practical innovation as the main contents [1]. In the notice of "Science Curriculum Standard for Compulsory Education Primary School" issued by the Ministry of Education in 2017, it is required to strengthen classroom practice and guide teachers to achieve the core quality requirements of students' all-round healthy development [2]. UNESCO has pointed out the qualities that citizens of developing countries in the 21st century should possess-the five main pillars of lifelong learning, including learning to seek knowledge, learning to do things, learning to live together, learning to develop and learning to change.

How to realize the Chinese dream of great rejuvenation of the Chinese nation lies in how to cultivate a large number of innovative talents with high quality. Science class in primary school is an important core subject in the development stage of compulsory education aiming at cultivating children's natural science and cultural literacy. This paper summarizes the most basic scientific and technological theories and technologies in various fields of natural science and technology [3]. The cultivation of core literacy is the need of the new curriculum standard of primary school science and promotes the development of primary school students' abilities. Taking students as the main body, focusing on cultivating the comprehensive quality of primary school students, by guiding primary school students to learn to think and ask questions in the right way, and implementing creativity, we can improve their sense of participation, cooperation and social responsibility, so as to promote their future study and development. Cultivating primary school students' innovative literacy is the core of quality education, which

meets the needs of the development of knowledge economy era and is also an important way to cultivate the backbone of national development [4].

2. The Reform Ideas Based on the Six Elements of Core Literacy

The research group selected primary school students in Tai 'an city as the investigation object, cooperated with the science curriculum teachers in primary schools, completed the questionnaire of this topic, sorted out and summarized the present situation of science practice curriculum, compared the six elements of core literacy and carried out practical teaching reform.

Humanistic background, the introduction of scientific and technological inventions and the study of scientists' good moral character in teaching can enhance pupils' cultural self-confidence and pride.

Spirit is to cultivate primary school students' research skills on science and technology and realistic learning attitude. Using familiar natural phenomena in daily life to carry out teaching, integrating theory with practice, and effectively improving teaching efficiency.

Learn to learn, guide pupils to use various resources to learn, choose their own learning methods and learning strategies, and pay attention to the cultivation of pupils' self-learning ability.

Healthy lifestyle enables primary school students to establish a basic understanding of natural survival activities and life phenomena, love and fear nature, and have green living methods and sustainable development ideals and behaviors. For example, in the environmental part of the atmosphere and water body, primary school students' awareness of caring for the environment is cultivated by making environmental protection handwritten newspapers and other activities.

Responsibility and responsibility, lead primary school students to establish positive values and behavior methods, form the spirit of group will and mutual assistance, care about the global challenges faced by mankind, and cultivate the patriotism of primary school students.

Practice, which organically links and uses scientific phenomena in daily life with knowledge points in textbooks, improves pupils' inquiry ability and practical innovation ability.

3. The Reform of Science Curriculum in Primary Schools

(1) Carry out interesting experiments to stimulate students' interest in learning and cultivate students' innovative consciousness.

Design interesting experiments in combination with the actual life to cultivate pupils' curiosity and thirst for knowledge, and actively discover problems and acquire knowledge. For example, through the stories of famous scientists such as "True and False Crown", we can stimulate and cultivate the innovative consciousness of primary school students who are good at thinking.

(2) Encourage hands-on practice and cultivate students' innovative ability.

Explore experiments and materials that are close to life, and encourage pupils to design and make scientific laboratory equipment, such as beverage bottles and foam boxes, so as to realize the reuse of waste and cultivate pupils' practical ability and innovative consciousness.

(3) Encourage questioning and cultivate students' innovative thinking.

Pay attention to the training of primary school students' questioning and innovation ability, and explore the creative potential. Guide pupils to expand their thinking, find problems from various aspects, and try to analyze and solve them by themselves.

(4) Multi-disciplinary infiltration to cultivate students' innovative quality.

Strengthen the connection and penetration between disciplines, stimulate the desire for innovation, teach primary school students to think about problems, and cultivate good

innovation literacy. Let students watch scientific videos such as "Tiangong Classroom" to stimulate students' thirst for knowledge and set up lofty ideals.

4. Specific Measures for Implementation

(1) Through the investigation report, we can understand the current situation and existing problems of practice teaching of science curriculum in primary schools in Tai 'an City, deeply study the new curriculum standard of primary schools, and extensively consult the literature to find the connection point between core literacy and science curriculum construction, and build an optimized practice teaching content system of primary schools. Science defines the connotation and characteristics of "primary school science curriculum construction based on core literacy", revises the teaching content and practical teaching methods of primary school science curriculum based on core literacy, and cultivates the interest of primary school students by holding regular science and technology festivals [5].

(2) Combining family practice activities with classroom teaching to realize "home-school co-education". Fully arouse students' self-learning awareness, guide students to explore experimental materials in their lives, and work with parents to design and make them. Through interactive discussion on the network platform, we will show it in class after summarizing, evaluate the effect and sum up our experience.

(3) Explore a new mode of co-construction and cooperation in education and teaching, build a platform for teachers' majors in colleges and universities to serve local primary education, further promote the school-running characteristics of teacher education in Taishan University, and strive to achieve the school-running goal of "building a high-level application-oriented university with distinctive characteristics of teacher education". Organize Taishan College teachers, college students and pupils' parents to carefully plan and design the implementation plan on a regular basis, and participate in the "righteous education" and "research" activities of primary schools in Yue Feng.

5. Expected Effect

Combining common sense of science and humanities with humanities and social sciences deepens pupils' understanding and cognition of nature, develops the ideology of caring for nature and protecting the environment, and improves their social practice ability and sense of responsibility.[6] Through the reform, primary school students gradually develop the following abilities:

- (1) Through the observation of natural phenomena, discover the rules and ask questions;
- (2) Establish a concise plan of scientific exploration activities through hypothetical answers;
- (3) Write observation diaries and simple scientific practice research reports;
- (4) After thinking and processing, get your own understanding or result;
- (5) Evaluate your study objectively, learn to question through discussion and exchange, and cooperate with each other to complete the project.

Communicate and cooperate with the science teachers in Yue Feng Primary School, and work out the teaching and practical activities of the science curriculum under the guidance of the six elements of core literacy. Participate in the "righteous education" and "research" activities of primary schools in Yue Feng on a regular basis to realize the sharing and intercommunication of educational resources. Through nearly three years of cooperation and co-construction, it has achieved certain results and won unanimous praise from students and parents.

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