

## On the Cultivation of Students' Innovation Ability by Creating Curriculum of Comprehensive Activity Course of Chemistry

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**Abstract.** The reform of new curriculum of chemistry promotes the development of comprehensive activity courses of chemistry in middle school, which injects new vigor and vitality into the reform of chemistry curriculum in middle school and also brings chemistry teachers working on new round of teaching reform new opportunities and challenges. Under the background of new curriculum reform, carrying out the study of comprehensive activities of chemistry in middle school has an important significance to deepen the reform of new curriculum of chemistry and optimize the structure of chemistry curriculum.

### Introduction

Comprehensive practical activity course is a new type of curriculum which comes into being with the new round of basic education curriculum reform. From the new curriculum system of basic education in China, the provision of the comprehensive practical activity courses not only has structural breakthrough, but also has interdisciplinary characteristics and no uniform curriculum standard, which provides teachers with creative and imaginative space.

### The Era Background of Setting up Comprehensive Activity Course of Chemistry

The cultivation of practical innovation ability has become the core problem of the world education reform. How to cultivate students' practical innovation ability? Various countries around the world have been actively exploring and making bold attempts, especially they set up a comprehensive practical course in primary and secondary schools, which changes the passive acceptance of students learning into active discovery learning so as to cultivate students' practical innovation ability. The United States, France, Japan and other countries have opened multiform comprehensive activity courses. Therefore, setting comprehensive activity course has become the trend of curriculum reform of basic education in the world.

Our country has carried on the curriculum reform for many times, but it only emphasizes the importance of the extracurricular activity, and has never put forward the comprehensive activity course, so the cultivation of practical innovation ability is the weak link, and even is the "dead zone". Comprehensive activity is integrated into the required courses in China's new round of curriculum reform of basic education, which is of great significance to improve the curriculum structure in primary and secondary schools, enrich the types of courses and promote the change of the students' learning method.

## **Characteristics of Comprehensive Practical Activity Course of Chemistry in Middle School**

### **Comprehensiveness**

Comprehensiveness is the basic characteristic of comprehensive activity curriculum, which means the comprehensiveness and interdisciplinarity of subject selection. The topic of comprehensive practical course of chemistry refers to chemistry and environment, energy, resources, agriculture, biology, medicine, food, health and other fields, and it trains students to use chemistry and other subject knowledge to solve practical problems.

### **Practicalness**

“Activity” is the main form of comprehensive activity course, and students complete a subject, experience and feel the society, feel the life and cultivate practical innovation ability through “investigation”, “analysis”, “experiment”, “exploration” and other activities.

### **Openness**

The openness of comprehensive activity course refers to open activity content, diverse activity form and flexible activity achievement. Comprehensive practical activity course respects students' personality development and has definite theme goal and flexible and open content. The content, way and realization form of achievement of activity are different, which can be the research report or developed product.

### **Autonomy**

Comprehensive activity course respects students' interests and hobbies, which provides a broad space for students' personality development. Compared with other types of courses, it has obvious characteristic of autonomy.

## **Basic Content and Type of the Comprehensive Activity Course of Chemistry in Middle School**

### **Basic Content of Comprehensive Activity Course of Chemistry in Middle School**

The survival of mankind cannot do without basic necessities of life, natural environment and social environment. Chemistry is closely related to nature, society, production and life. Therefore, it is the research content of comprehensive practical activity course of chemistry in middle school in the following relevant fields with chemistry, including nature, environment, energy, medicine, health, industrial and agricultural production and others.

### **Basic Type of Comprehensive Activity Course of Chemistry in Middle School**

*Natural environment.* From the point of view of the relationship between human and nature, it studies the following relevant subjects, including environmental protection, ecological construction, energy utilization and others.

*Chemistry life.* From the view of human life, it studies the related topics which are closely connected with human life like basic necessities of life.

*Interdisciplinary comprehensiveness.* From the point of view of science and technology and times, it studies the relevant subjects which are closely connected with chemistry, such as life science, new material science, space science, military science and other new technology fields.

## **Implementation and Management of Comprehensive Activity Course of Chemistry in Middle School**

### **Overall Planning, Clear Goal and Distributed Implementation**

The implementation of the comprehensive activity course of chemistry in middle school needs to co-ordinate arrangements and make general plan of comprehensive practical activity of school. According to the overall plan to develop comprehensive practical activity course plan of chemistry, have clear goal and formulate implementation plan so as to ensure the implementation of comprehensive practical activity course in middle school in an orderly manner according to plan.

### **Making Students' Autonomous Choice and Active Inquiry Combine with Teachers' Guidance**

Making students' autonomous choice and active inquiry combine with teachers' guidance is the key to implement comprehensive activity. On the one hand, students have to choose the subject they are interested in, form the sense of subject awareness and explore positively and actively through personal independence, group cooperation, class cooperation, different grade cooperation and other ways; on the other hand, teachers should make an effective guide to students' research activities, create a situation for students to find the problem, help students to find the right way to explore and guide students to successfully complete the activity task.

### **Correctly Handling the Relationship between Chemistry Teaching and Comprehensive Activity Course**

Close connected with content of comprehensive activity course of chemistry selection in middle school, comprehensive activity course should promote the students' understanding and application of chemistry knowledge, and intramural practice is combined with extramural practice; modern information technology is combined with comprehensive practical activity course.

### **Adopting Flexible and Diversified Implementation Method**

According to the contents of activities, they should take the following activity ways as main ways, including group, individual and class. They also adopts cooperation way, for example, two schools or more schools make a cooperation, and they can also invite professional personnel of enterprises and institutions, research institutes and colleges and universities to guide.

### **Conclusion**

Under the background of the implementation of innovation and entrepreneurship of our country today, it is essential to popularize and study comprehensive activity course. Through promoting comprehensive activity course, training students' innovative practical ability, and improving the comprehensive quality of students, it lays the foundation for the students to walk into the society.

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