

The Training Path of Biology Core Literacy in Junior Middle School

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Abstract:

Core literacy refers to a number of key abilities and accomplishments in the process of individual learning and growth, which have a decisive impact on the process of human development. UNESCO also requires all countries to strengthen the cultivation of core literacy based on the needs of human growth and development. Based on the theory of core literacy, combined with the characteristics and requirements of subject education, China's educational circles further refine the core literacy requirements of each subject, and put forward the concept of subject core literacy, which provides guidance for the cultivation of core literacy in basic education teaching activities. Teachers should carry out corresponding teaching activities on the premise of respecting students as the main body of the classroom to meet the needs of students' individualized development, which is also the main change of the new curriculum reform. Its purpose is to increase the cultivation of students' core literacy after meeting students' needs for book knowledge. This paper mainly explores how to construct an efficient biology classroom in junior high school under the concept of core literacy.

Keywords:

Core literacy; Junior high school biology; Efficient classroom

Foreword:

With the change of national policy, it is more and more difficult for students to enter high school. Some students are difficult to adapt to junior high school life, and even some students still retain some learning habits of primary school. It is difficult for them to enter junior high school life, not only in life, but also in classroom learning. The consequence of this is that some students begin to appear the phenomenon of partial subjects. At the same time, according to the actual situation, the study found that students pay little attention to the course of biology and do not attach importance to biology ideologically. Teachers must dig deeply into textbooks, study students carefully, combine with the practice of biological experiment teaching, so that students can gradually understand the deep connotation of biological science, so as to understand the meaning of life, gradually form the core literacy of life science, and better exercise their ability and character to adapt to social development.

1. The importance and significance of the cultivation of core literacy of disciplines.

Junior high school biology is the enlightenment education of students for life science, to a large extent, it will affect

students' attitude towards life, so junior high school biology is a relatively key subject, teachers need to highlight students' attitude towards life objects through correct teaching methods, establish students' rational thinking, through the understanding of the corresponding biological knowledge. To help students master different aspects of scientific inquiry spirit, rational thinking ability and life concept, especially some experimental designs in biology, can cultivate students' careful observation of problems, cultivate students' ability to find out problems and explore answers, especially some students' science thinking ability, and in the process of learning biology. It can help students understand certain scientific knowledge content, help students cultivate the consciousness of cherishing life and understanding the preciousness of life in the concept of treating life, and this kind of scientific literacy is a vital part of human literacy, the cultivation of this kind of scientific literacy can help people shape their own good values and cultivate the corresponding professional thinking ability. Biology itself is a discipline with a wide range of fields. Biology includes not only animals, but also plants and microorganisms and other different fields. Affected by the COVID-19 epidemic in recent years, biology also has a good development prospect in the future. The development of biology

will not only affect medicine, but also have a significant impact on different fields such as military chemistry. Starting from junior high school biology, we should cultivate students' core literacy and help them build up their interest in biology, which will help to cultivate high-quality biological talents in China in the future and lay a foundation for the cultivation of national professional talents.

2. Analysis of the difficulties faced by junior high school biology classroom teaching

(1) The traditional teaching concept is heavy, and the concept of core literacy has not received due attention.

With the implementation of the new curriculum reform, teachers and schools pay more and more attention to the concept of core literacy. However, under the influence of exam-oriented education, many teachers and students do not pay enough attention to the course of biology. They think that biology is not the main subject, so the focus of students' learning will shift, and even some students give up biology learning directly. Of course, some teachers do not attach enough importance to the subject of biology, which leads to the loosening of many students' minds. This also directly leads to the fact that the concept of core literacy has not received due attention, and the bio-efficient classroom can not be constructed.

(2) Lack of teaching equipment and low investment in disciplines

With the further development of nine-year compulsory education, more and more people begin to realize the importance of education, and the investment in related education is gradually increasing. At the same time, especially in some places where teaching conditions and teachers are relatively backward, their educational resources are constantly improving. Whether it is modern educational facilities or some teaching equipment, they are gradually being improved and satisfied. Biology teaching has the necessary teaching equipment and can be used, students' interest in learning, as well as their learning efficiency has been greatly improved. However, from the reality, we can know that compared with the teaching input of mathematics and Chinese, the teaching input of biogeography and history is relatively small, so that there are still many places, although there is a lot of input above, but it can not fully meet the practical application of biology and other disciplines in teaching, which greatly hinders the construction of efficient classroom.

3. Strategies for Constructing an Efficient Biology Classroom in Junior High School under Core Literacy

(1) Cultivating the spirit and ability of inquiry in thinking

Learning without thinking is useless. In ancient China,

the value of thinking to learning was emphasized. Junior high school students have strong curiosity and are willing to learn new knowledge, but because of the existence of the teaching thinking mode characterized by "imparting knowledge" for a long time in our country, few students take the initiative to question various problems encountered in learning, lack of deep thinking, so the overall learning quality is not high. Without thinking, it is difficult to produce problems, and problems are the starting point of inquiry activities. When students encounter problems in learning, under reasonable guidance, they will be willing to explore and pursue the answers to the problems. In the process of inquiry, students need to think and analyze, so their inquiry spirit and ability will be developed. To cultivate students' scientific inquiry spirit and inquiry ability in junior high school biology teaching, it is necessary to consciously guide students to think positively. For example, when learning "the main groups of animals", the textbook introduces the common types of animals in the biological world and their basic biological characteristics, which is also the main knowledge of teaching. However, some students feel that there are not many kinds of animals that can be observed and seen around them, so they have a question, "What are the factors that affect the distribution of animal groups?" This is an open question, and there is not much detailed discussion on this issue in junior high school biology textbooks. When students determine the problem, they will begin to think. By looking for information to understand the current situation, and then formulate a practical exploration plan, go to nearby communities, surrounding suburbs and other different ecological systems to conduct targeted exploration and investigation, understand the distribution of animal populations, and then combine the data to think about the factors affecting the distribution of animal groups. Of course, specific inquiry activities are not entirely limited to personal inquiry, but also include the use of other people's research results, such as various video materials, as well as professional analysis. Through the analysis and exploration of students in many ways, we can understand that there are two main factors affecting the distribution of animal groups, natural factors and human factors. Natural factors include many contents, such as geographical factors, environmental factors and so on. In terms of regional factors, some animal populations are only distributed in certain regions, such as giant pandas in western China, while kangaroos are mainly distributed in Australia, and this regional influence is formed in a long history. In terms of environmental factors, camels, for example, are more suitable for arid climates, while amphibians generally live in wetlands and fish must live in water. Of course, with the development of society, the influence of human factors on the distribution of animal groups is more obvious, especially in the areas where people live and live, such as small parks in residential areas, basically only

birds and some small insects can be seen, and few snakes, frogs or other small animals can be seen, which is human activities. As a result, the distribution of animal groups has changed. Especially in some suburban areas, this is particularly evident, perhaps there is a wilderness wetland in the suburbs, in which a variety of animals and plants live. However, when the city expands and the plot is included in the planning, whether it is developed into a residential area or a park, it will lead to great changes in the distribution of animal groups in the area. From the above, we can see that students have a question in their thinking, and then explore it accordingly, and finally enrich their knowledge horizons and learn the knowledge discussed in the book. Biology itself is a subject with many unknown fields, and the spirit and ability of exploration are one of the essential qualities for students to learn biology well and thoroughly. On the way of learning and growth of junior high school students, we must have the spirit of exploration, let students think and explore, think actively in the exploration, and ultimately achieve the overall progress of knowledge, ability and thinking.

(2) Carry out appropriate experimental links.

When carrying out teaching activities, teachers need to cultivate students around the core literacy theme of life concept, and the development of experimental links is crucial to the subject of biology. Through the experimental process, students can strengthen their learning experience, and students can have more profound insights in the process of hands-on operation. It enables students to have a new understanding and cognition of the learning process of biology. In the process of carrying out the experiment, teachers can guide students to form a sense of respect for life, so that students can form a correct social concept, and the development of experimental activities can also increase the interest of classroom teaching to a certain extent, teachers need to let students become the main body of the experimental process, guide students to do the experiment themselves, so that they can complete the experimental process through their own efforts. Excavate the origin of life, understand the internal structure of life, strengthen students' life concept, so that students can gradually discover the charm of biology, and then be able to participate in the learning process more actively and actively. For example, when teachers explain the experiment of "seed germination experiment", because the growth cycle of seeds is very long, it needs a long observation period. If the experiment is carried out in the classroom, the observation effect will be affected to a certain extent. Therefore, teachers can tell students the principles and steps of the experiment in class, so that students can complete the experiment by themselves in scattered time after class. In the process of completing the experiment independently, students need to collect relevant information and materials through various channels, and also need to prepare corresponding

experimental tools, including pure water, mung bean seeds, plastic cups and so on. In this process, students first need to make a culture cup, prepare absorbent cotton, spread it in the cup, then prepare ten mung bean seeds, soak them in the cup with water in advance, take them out after one night, put ten mung beans in two plastic cups on average, put one of the plastic cups in a place with a temperature of 25 C, and provide light for them. Another plastic cup is placed in the dark. After the operation, students can record the germination of seeds every day and share the results with other students. Teachers can give students a week to record their observations every day. On the seventh day, students can summarize the observation records of the previous few days. At this time, students will find that the growth of seeds is not directly related to light. Instead, some seeds grow faster in the dark. In the process of independent experiment, students can have a more real learning experience, in this process, students can see the process of seed germination, so that students can have a more in-depth understanding of the vitality of biology, so as to strengthen the concept of life of students, so that they can promote the formation and development of their core literacy through the biological learning process.

(3) Using inquiry teaching methods to improve students' core literacy

In the process of biology teaching in junior high school, the use of inquiry teaching method can fully mobilize the enthusiasm of students, so that students' inquiry ability and innovative thinking can be greatly improved. At the same time, teachers create situations for students to explore problems through biology classes, guide students to use scientific methods to explore and acquire more knowledge and ability, and lay the foundation for students' lifelong development and overall improvement of their core biological literacy. For example, when students do the experiment of "the influence of light on the life of a mouse woman", they get the experimental results through in-depth observation, group cooperation, reasonable inference, design of experimental scheme, and effective processing of experimental data by using information technology. By using the existing biological knowledge, students can improve their inquiry ability more quickly and promote a comprehensive understanding of society. For another example, when learning the content of "photosynthesis and respiration", students all know that plants can purify the environment, so teachers can ask students at the right time: "Can plants really purify the environment?" After students' in-depth exploration and teachers' explanation, students understand that some plants can not purify the air at any time, plants breathe at night, not only can not produce oxygen, but also absorb the surrounding oxygen and discharge carbon dioxide. Some parents always like to put some green food indoors, especially in their children's bedrooms, and always want

to give their children a vibrant learning environment, but they do not know that plants absorb too much oxygen, so that the oxygen concentration in the bedroom is not high, affecting their children's health. After students fully understand respiration and photosynthesis, they can firmly grasp knowledge points, improve problem-solving ability and expand thinking, which is of great help to the improvement of core biological thinking literacy. In addition, in the process of biology classroom teaching, the use of some proverbs and proverbs in life can arouse students' interest in learning and improve their biological thinking. As people often say, "Even if you jump into the Yellow River, you can't wash it clean." Some students questioned: "The water of the Yellow River itself is very muddy. Of course, the more you wash it, the dirtier it gets." The teacher should tell the students step by step that the water of the Yellow River was originally very clear, but because people cut down trees indiscriminately and destroyed vegetation wantonly, soil erosion was caused and the sediment content of the Yellow River was large. Through these comparisons, students can deeply feel the importance of forests and vegetation, thus deepening their thinking ability and improving their biological core literacy.

(4) Promote students to connect life reality with biological knowledge and enhance the practical value of knowledge.

Biology and society are closely linked, so students can solve some problems in life from a biological point of view, and also deal with the relationship between people and the environment, so as to enhance their sense of social responsibility. For example,

when learning the regulation of human hormones in the second volume of biology in the seventh grade of junior middle school published by People's Education Press, students can explore which diseases are caused by hormones, in other words, let students master what diseases can be caused by the lack of hormones, and it is easier for students to memorize these knowledge points through discussion, and it can effectively enhance students. Enhance students' awareness of social responsibility to care for life and elders. In addition, in the fifth chapter of the seventh grade of junior high school biology education edition, "Green Plants and Carbon and Oxygen Balance in the Biosphere", this chapter emphasizes the important position of green plants in the biosphere, which can help students link the environmental problems in their lives, such as the formation of deserts due to lack of vegetation. Or let students master the common sense of life: in fact, plants will not only absorb carbon dioxide, but also produce carbon dioxide, and cultivate students' concept of low-carbon life.

4. Conclusion

In a word, under the macro-educational goal of educating people, junior high school biology teaching guides junior high school students to achieve better life growth through the cultivation of core literacy. In the growth process of junior high school students, life knowledge learning is important, but core literacy is obviously more critical. Guide them to explore actively, think actively, cultivate a rational spirit, so that students can assume social responsibility, and learn to cherish life, become a qualified future social citizen.

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