

Exploring and Studying the Method of Popular Science Education Based on Insect Practice

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Abstract: Insects are important creatures on the earth. They have a wide variety of different shapes and belong to the most numerous animal groups among invertebrates, and they are found almost all over the world. In the field of education, insect science popularization can be used as a carrier of educational practice to fully demonstrate the characteristics of campus education and teaching, and improve the quality of teaching. In this article, insect practice is used as a carrier to deeply explore and study the teaching process and methods of insect science education.

Keywords: Insects; Practical Carrier; Popular Science Education Method; Principle; Teaching Process; Method

With insect science popularization as an education carrier, it is necessary to establish rich and interesting teaching modules. It can penetrate insect science popularization education into campus teaching materials, ensure that popular science education adapts to teaching principles and refine teaching content. At the same time, we should do a good job in the guidance of experts, the participation of parents, and the realization of home-school interconnection communication, and finally form a special education model that promotes development with special education, and continuously improve the results of education projects and social value with characteristics.

1. The issue of popular science education based on insect practice is raised

As early as 2005, the State Council of our country had issued the “Outline of the Action Plan for National Scientific Literacy”. The outline proposed that the development of science and technology, the dissemination and popularization of science and technology for all should be greatly improved as a whole. As far as science is concerned, it also puts forward specific educational goals, that is, “love animals and plants, care about the surrounding environment, get close to nature, cherish natural resources, and have a preliminary environmental awareness.” For students, they love small animals. Love insects, this is their nature, so carrying out educational and teaching activities based on insect practice can stimulate their interest in in-depth observation and exploration, and it is helpful to inspire their learning and life imagination. At the same time, this is also an effective process of forming students’ image thinking ability and preliminary logical thinking ability.

2. The overall goal of popular science education based on insect practice

The construction of a popular science education system with insect practice as a carrier is very distinctive. It has successfully integrated popular science education into the five major education fields of student education, morality,

intelligence, physical education, beauty, and labor. In this process, we must first enrich the educational content, creatively put forward the educational outline, and plan the education training goals, based on the original research to promote the overall educational reform to improve the level of popular science education, optimize the characteristics, and incorporate a large number of them. Sustainable development operation content, forming a popular science education base oriented to the society, so as to infect students into it, and achieve effective training of students' comprehensive learning quality in a point-to-point manner.

3. The specific content of popular science education based on insect practice

The specific content of popular science education based on insect practice as a carrier includes “insect classroom” and “animal science corridor” that can stimulate students' interest in learning and desire for knowledge and so on. This is a popular science education environment with more distinctive features. Furthermore, in the process of completing the core content of insect science education, it is necessary to create a school-based series of educational textbooks closely following the educational goals of students, and to develop teaching guidance based on the basic framework of the textbooks and principles of teaching methods, forming a distinctive teaching activity program with significant effects. To ensure that students always have a good learning experience; Third, to build a relatively stable expert-led system to ensure a school-based teaching environment led by teachers and participation by parents. At the same time, it is necessary to create a teaching reform implementation team to effectively promote the deepening of the teaching reform. Finally, pay close attention to the relationship between school education and the community, and expand teaching channels.

4. Methods of popular science education based on insect practice

In the construction of popular science education methods with insect practice as the carrier, we should first do a good job in environmental creation, and pay special attention to the creation of “insect classrooms”, “science corridors”, “insect breeding areas” and “book database” to complete the construction. In this process, it is necessary to carry out topic selection education, formulate educational research plans, hire experts to provide one-to-one assistance, ensure effective construction of the science education environment with insect practice as the carrier, and formulate corresponding teaching plans. In the process of screening the content of teaching activities, carry out teaching reflection, adjust the teaching plan and activity content in time, and form a special science education activity design system with insect practice as the carrier. This should include painting, hand-made, nursery rhymes, stories, popular science dramas, etc. Insect imitation exercises and other content, in-depth exploration of the methods and ways of conducting popular science education with insect practice as a carrier.

4.1 Building an educational environment

In the process of constructing the teaching environment, it is necessary to combine the teaching content to enrich the teaching process, establish “insect classrooms” and “science corridors”, thus forming a world of insect science and education. In the characteristic process of popular science education, it is necessary to be led by experts to ensure the optimization of professional health. In the popular science education system with insect practice as the carrier, it is necessary to carry out one-to-one teaching activities to form a relatively strong teaching and academic atmosphere and strengthen the effectiveness of scientific activities and popular science activities. In this process, a good and complete science education network can be formed. Of course, teachers should also organize students to carry out insect science and technology innovation competitions, forming a teaching concept of “experts led, teachers taught, and parents assisted”. In the teaching process, it is necessary to reorganize and improve the school management system and mechanism, build a relatively democratic, open, and scientific management system mechanism to ensure the optimization of the educational environment.

4.2 Clear teaching principles

In the process of clarifying teaching principles, it needs to form a variety of teaching principles. The first is the principle of innovation. In the teaching process, it is hoped to ensure the effective penetration of various teaching activities and to infiltrate the educational activities of various insect practices as the carrier. For example, in the teaching process, it is necessary to establish a scientific and educational activity—“The Story of Me and the Silkworm Baby”, and the educational theme of “Live Insect Breeding” shall be established by this scientific and educational activity. Art elements should be introduced in the

teaching process to show students insects, insect heavy-color paintings, paper-cut insects, and butterfly paintings formed by colored clay sculptures. In addition, a section of “Insect Stories” has been established in the field of language teaching to teach students to learn insect rhymes, to design insect science scripts for students, or to create an insect role game system to guide students to make their own insect mimicry exercises.

In the application of popular science education methods with insect practice as a carrier, it hopes to establish a daily teaching and research system for scientific research leaders and school-based training. It is necessary to base on the reality of school teaching activities, find problems in practice, and select the correct topics to ensure the continuous deepening of the insect time education reform and form the driving force for the development of education and teaching.

4.3 Carry out teaching activities

In the process of carrying out teaching activities, teachers hope to use insects as carriers to carry out preschool science education activities, show the content of educational functions, and actively carry out various teaching activities. In the insect-themed practice activity of “The Story of Me and the Silkworm Baby”, teachers hope to cultivate students’ love and sense of responsibility to help small lives grow. This can be clearly reflected in the activity of breeding silkworm babies.

In environmental protection activities, teachers should instill cognitive education content. Combining the actual content of science education, combining insect practice as a carrier, allows students to experience the strange insect world in life observation and practical operation, and experience the colorful brilliance they present in the natural world. In the outdoor inspection activities, teachers lead students to deeply integrate into nature and feel the charm of education on the theme of “The Story of Me and the Silkworm Baby” under the background of the harmonious development of nature.

In aesthetic education, teachers hope to show students more kinds of insects besides silkworms, highlighting the unique beauty of form and color. Under the guidance of teachers, students started teaching handicrafts and paintings, felt the charm of various insects in the process of creating works, and pursued a unique aesthetic mood. For example, in the teaching of insect painting, the teacher hopes to improve the students’ awareness of colors, and draw insects in a variety of colors that they like freely and unrestrictedly, such as blue ladybugs, red silkworms and so on. In the handmade activities, teachers hope to improve the students’ hands-on simulation process and cultivate their artistic creativity. For example, using straws to make butterfly abstract works can infect students in aesthetic art education.

5. Conclusion

There are many kinds of popular science education methods based on insect practice. Teachers need to boldly innovate in the process of exploring these educational content and method models, in-depth strengthen exchanges and discussions with students, and explore new ways of insect-based biological science education and teaching development. And strive to create a good independent and open learning space for students.

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