Research on the Cultivation of Students' Logical Thinking Ability in Primary School Mathematics Teaching

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Abstract: At present, China has vigorously carried out quality education, and the quality and level of teaching in each school have been significantly improved. Under such an educational background, the ways and goals of cultivating primary school students have also changed a lot. For the elementary school mathematics classroom, in addition to the basic computing power and the study of mathematics, helping primary school students to establish correct ways of thinking and cultivating their logical thinking ability has become a very important new topic in primary education. The ability of logical thinking will accompany people's life and play a vital role in the future development of children. This article briefly discusses how to improve students' logical thinking ability.

1. Introduction

Primary education is the starting point of nine-year compulsory education and a key period for children to form their own knowledge systems and skills. As the embryonic stage of learning, children can play a vital role in laying a solid foundation for future study and work in the primary school stage. The current social competition is extremely fierce, and it is difficult to be recognized by the society without having high-quality abilities and professional knowledge. To become a person with agile logical thinking ability and professional knowledge, it is necessary to focus on training and lay a good foundation in the primary school stage. Therefore, elementary mathematics education to train students is not only mathematical knowledge and computing ability, but also cultivate their rational thinking and reasoning ability, lay the foundation for children's growth, stimulate their interest in learning, cultivate their positive thinking and courage. The spirit of inquiry.

2. Importance and Necessity of Cultivating Logical Thinking Ability

2.1 For Personal Growth

For a modern person, the ability of logical thinking is not only important for his study and life, but more importantly, it will affect his ability to think in the future, to deal with practical problems, and to intervene in dealing with work matters. The pupils' minds are very immature, they don't have their own complete three views, and the way to look at the problems is relatively simple. Therefore, it is especially important to help students in the mathematics classroom to improve their ability to understand things, to improve their ability to solve problems, and to develop their problem-solving and logical thinking skills. In education, children learn to no longer be limited to the appearance of things, but to grasp the internal factors and find the fundamental way to deal with problems. Therefore, for a person's growth, starting from the elementary stage of the child to focus on cultivating these abilities will greatly help him become an adult in the future.

2.2 For Mathematics Teaching

For mathematics classrooms, logical thinking skills are very important. In many schools, cultivating children's logical thinking skills is one of the important teaching goals of the mathematics

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classroom. This is also one of the important teaching methods that can improve their mathematics ability and cultivate their comprehensive quality. The teaching characteristics of this stage require that children should have strong logical thinking ability, because the knowledge points of primary mathematics are relatively complex, lacking internal laws and connections. In addition to constant memory knowledge points and problem-solving training, there should be a certain abstract thinking ability to digest and absorb knowledge points, internalize and absorb various complicated classroom knowledge into their own things, and build their own mathematical knowledge system. Not only that, but China has already cultivated children's logical thinking ability in the new curriculum standard and incorporated it into the training goal. This is also one of the important basic tasks in primary education. Gradually cultivating their logical thinking skills can also help mathematics classrooms improve efficiency and improve mathematics computing and application skills. Whether it is practice, homework or exams in class, students need to have a certain logical thinking ability to solve practical math problems. Children should have their own views on things, no longer stick to the ignorant state of things in childhood, but should grasp the inherent logic of things transformation and development. Therefore, whether as a teaching method or a teaching goal, it is very important and indispensable to cultivate children's logical thinking ability.

2.3 Regarding the Law of Education and Teaching

Logical thinking runs through the students' entire learning life, not just primary mathematics. Other knowledge of various subjects requires certain logical thinking skills, especially those that require children to think and calculate, and their complex and cumbersome knowledge. Point, we must use our own abstract thinking to grasp the inherent laws of the discipline, analyze the problem type rationally, strengthen our ability to grasp the breakthrough of the problem, and have a thorough and thorough analysis and understanding of the problem, in order to be able to The study is exquisite and thorough. Take mathematical geometry as an example, triangles, circles, squares, etc. Although they belong to different chapters, the methods and knowledge of the questions are very different, but when thinking about problems, they must be from the area and circumference. Start at an equal angle. Use the problem-solving skills that you have learned to think about the inherent logic of these topics, and build the ability of students' image thinking to better learn geometric knowledge points.

3. How Students Change Their Thinking

For students, it is not easy to change the way of thinking to deal with complex problems. Especially the active and active group of primary school students, it is difficult to think deeply about the inner meaning of the topic, and simply think about the surface of things with simple ideas, but cannot grasp Its deep meaning. This requires the children to master the knowledge and think deeply when dealing with the topic, in order to solve the complex problem.

3.1 Comprehensive Law

The comprehensive method is also called the analysis method. That is, when encountering a problem that is relatively difficult to understand and relatively complex, the split topic can be analyzed hierarchically, the problem is analyzed layer by layer, and then combined with what they have learned. Grasp the connotation of the deep hidden topic and find a reasonable and effective solution method. The key to the comprehensive method is to analyze the problem, focus on the key words in the topic, associate the textbook knowledge and the content of the teacher's class, and then analyze and find a better way to do the problem. Using such a method, it is possible to solve problems that students have not seen, and to be able to review textbook knowledge, which is an effective new problem-solving method. When students can't find a suitable direction to do the problem, they can use this method to change the way of solving problems and seek a convenient way to solve problems.

3.2 List and Examples

This method is suitable for difficult math problems, especially for some complex and difficult

problems. This method is aimed at the teacher's class and story. For these problems, teachers can repeat the similar topics repeatedly, and then draw inferences from them to find the inner laws of similar problems, so that students can master the law of solving problems. Applying logical thinking, for these individual problems without clues, Lenovo analogizes similar topics to find ideas for solving problems. When you encounter similar problems in the future, you will be able to solve them without any clue. This method requires teachers to explain it repeatedly in class. For example, when teaching the problem of elementary school equations, students can encounter similar problems and give similar questions to answer them. Compare them and find their commonality rules. To master the method of doing the problem. When you encounter similar equations in the future, you won't have any more clues.

3.3 General and Individual Laws

In philosophy, things often have general and individual characteristics. The particularity of things contains universality, and universality contains particularities. The two exist and complement each other. The logic of mathematics and the thinking of solving problems are similar. For some special and difficult questions, it is often derived from the knowledge points that have already been learned. At this time, students must not panic and chaos, but they should think of similar topics they have learned. Relevant knowledge points, and then seriously think according to the requirements given by the questions. From the common problem-solving methods that I have learned, we will make special answers according to the special requirements of the questions, so as to find solutions to problems and break through the problems. The mathematics topics are always different from each other. Different topics seem to be very different. In fact, they all have basic internal connections. They are always derived from basic knowledge points, and the difficulty is improved. At this time, we should start with the basic knowledge points and gradually find out the way to solve the problem. Such a problem-solving process requires students to be flexible and fluent, to find the logic within the things, to test the students' abstract ability and logical thinking.

4. How to Cultivate Students' Logical Thinking Ability

Among the various new teaching methods that emerge in an endless stream, there are many effective ways to help students build abstract thinking and develop logical thinking skills. Teachers can learn to apply these methods to their own classrooms to help them learn and grow better.

4.1 Carefully Designing Teaching Plans to Establish Classroom Teaching Objectives

Classroom is the place where teachers and students have the most exposure and have the greatest impact on their education. In the same way, the development of children's logical thinking ability and the activation of learning interest must also be completed in the classroom. Teachers must carefully develop teaching plans before class, and clarify the learning objectives of each class in order to achieve better classroom results, in order to improve learning efficiency. Because only the goal is clear and the teaching method is clear, it is possible to bring the knowledge points to the students better and guide them to learn, so that they can understand and master all kinds of knowledge. In the process of developing a lesson plan, teachers should focus on how to improve students' ability to think logically and how to improve from mathematics classroom knowledge. For example, when learning multiplication, teachers should prepare a lesson about multiplication before class. First, let students clearly understand the importance of multiplication in mathematics learning and their computational ability. Then the teacher should analyze the law and content form of the multiplication method, let the children understand the origin of the multiplication, grasp the rules of the rhyme, and help the students to deepen the impression, better understand the law of multiplication of different numbers, and multiplication. Similarities and differences with additions to help them learn multiplications better, while at the same time improving their ability to grasp the inherent logical laws of things.

4.2 Cultivating Students' Personality Development

Primary school students tend to be more natural than adults. Many people who are called geniuses gradually cultivate their individuality from an early age and focus on their talents. However, there have been many problems in the process of education in our country, which often suppress the natural development of students' personality and let them bury themselves in the sea of questions. When many teachers explain math problems, they often insist that a certain topic must be solved by some fixed method. Some students thought of a new method of solving problems and made a question, but they were judged as wrong by the teacher. This practice severely suppresses students' ability to think and judge themselves and suppress their personality development. In the actual teaching activities, teachers should accommodate the diversity of children's personality, give them more space to think freely and freely, guide them to move forward toward correct problem-solving ideas, and encourage them to think from their different perspectives. Different solutions to the problem. You must not throw your thoughts and methods directly into them.

4.3 Build a Good Teacher-Student Relationship

As a guide for students to learn on the road to growth, teachers should be the relationship between friends and friends, work together, and make progress together. However, in the current teaching practice in China, some teachers are still self-centered, do not consider the children's thoughts and inner feelings, and do not build a good harmonious teacher-student relationship and teaching atmosphere. This requires mathematics teachers to communicate with students frequently, to understand the students' opinions on the classroom in real time, to learn with humility, to accept the suggestions made by the children, to make the classroom learning atmosphere more harmonious, the teachers and students have stronger feelings, and to build a good study. Atmosphere and teacher-student relationship. For students whose academic performance is not ideal, teachers must not blindly criticize and suppress, but must not discriminate, but should treat all students with equal grades, encourage them to consolidate places where knowledge is not strong, and supplement students' short knowledge. Board to help them progress together. Students who have good grades should be praised, but they must not be complacent and self-satisfied. They should treat the students equally, and should not cover or over-protect a certain student. They should really put their feelings into the children and patiently teach them.

5. Conclusion

In summary, the primary school mathematics classroom is especially important for the students' logical thinking ability. It can help children to learn mathematics better and help them to learn other subjects, so as to effectively lay the foundation of the elementary school. At the same time, it plays a very important role in the children's future study and work growth. In today's increasingly demanding quality of talents, logical thinking ability is becoming more and more important. The ability of abstract thinking and deep thinking determines the height of a person's growth. Therefore, from the beginning of primary school, we must focus on cultivating children's ability in this aspect, helping them to grow up and become talented, and invest more power in building the motherland in the future.

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