

# Discussion on the Effective Use of Error Resources in Primary School Mathematics Classroom

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## ABSTRACT

With the development of the times, most primary and secondary schools have begun to carry out curriculum and teaching reform, in order to further cultivate students' ability of inquiry thinking. Mathematics is a relatively abstract course. With students' high thinking ability, they are faced with many problems and challenges. In this process, the teaching mode of teachers is too traditional. In class, teachers always give endless lectures, so that students have little time for independent thinking and inquiry learning. At the same time, teachers pay too much attention to the use of "correct resources" in the teaching process, but ignore the use of "wrong resources" and the use of value. The long-term continuation of this teaching mode will reduce the enthusiasm and initiative of primary school students in mathematics learning, and learning is very bad for students. Therefore, teachers should pay attention to the correct use of "wrong resources", and make effective use of these resources for classroom teaching, in order to improve students' learning enthusiasm and the cultivation of inquiry ability.

## 1. Introduction

It is very common for students to make mistakes in elementary school math classes. These classroom error resources do not affect the teaching effect. If teachers can make full use of classroom error resources, they can achieve unexpected teaching results. In order to effectively make use of the resources of classroom mistakes in primary school mathematics teaching, teachers should first correctly understand the mistakes, realize that it is normal for students to make mistakes in learning, guide students to learn patiently, and stimulate students' enthusiasm for classroom participation. Teachers can also give wrong forms of conclusion, so that students can analyze problems in the interference environment and improve

the ability of analysis and judgment. Teachers should also timely arrange students' error-prone exercises, and strengthen the repeated intensive training of error-prone questions. Mathematics is a very objective subject, and there is a strict line between right and wrong. Therefore, it is very common for students to make mistakes in the elementary school math class. As the saying goes: Knowing mistakes can change how. As a resource, some errors in primary school mathematics teaching may have a positive impact on primary school mathematics teaching. Therefore, primary school mathematics teachers should actively explore various forms, effectively use the wrong resources in the classroom, in order to achieve a better mathematics classroom teaching effect.

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## **2. The Utilization Status of Wrong Resources in Primary School Mathematics Classroom Teaching**

### **2.1 Teachers do not Recognize the Importance of Wrong Resources**

In primary school mathematics teaching, most teachers adhere to the principle of teaching correct knowledge, and believe that mistakes should be avoided as far as possible to effectively improve the efficiency of mathematics classroom teaching. Many teachers ignore students' mistakes in teaching, usually only speak the correct answers, and do not study the causes of students' mistakes, leading students to ask questions. This situation occurs because teachers do not realize the importance of wrong resources, do not explore the value behind the mistakes, which affects the development of students' thinking, but also limits the development of students' personality.

### **2.2 Insufficient Utilization of Resources**

In the process of primary school mathematics teaching, teachers should make full use of the mistakes found in time and give full play to their value through effective ways. However, at present, the use of wrong resources by primary school mathematics teachers in China is not deep enough, just floating on the surface, which reduces the utilization value of the wrong resources themselves, making students often make the same mistakes in learning. This is the main reason why students can not understand their own mistakes by simply explaining their mistakes or directly publishing the correct answer, not deeply impressed with their own mistakes<sup>[1]</sup>.

### **2.3 Teachers' Ability to Apply Wrong Resources is Insufficient**

Teachers should have strong mathematics teaching ability and brand-new mathematics teaching concept to strengthen the application of mathematics error resources. However, from the actual situation, in the primary school mathematics classroom teaching, teachers' ability to use the wrong resources is slightly insufficient. On the one hand, teachers lack a tolerant attitude towards students' mistakes, it is difficult to calmly, let alone appreciate. Teachers are more indifferent to the mistakes that students make, or directly help students to correct their mistakes<sup>[2]</sup>. On the other hand, teachers do not explore the reasons for the problems in mathematics teaching, and cannot build a perfect teaching mode based on mathematical error resources. Therefore, it is difficult for primary school mathematics classroom teaching resources to gain new vitality

because of the effective use of wrong resources.

## **3. The Effective Use of Wrong Resources in Primary School Mathematics Classroom**

### **3.1 Errors and Resources Arising in Teaching Should be Dealt with Appropriately**

Students often do calculations and solve problems in class, but this can also create a lot of problems. In order to let the students enhance the understanding of the source of the problem, the teacher is not emergency to correct the mistakes, but reserved for them to find the wrong opportunity, let them find their own mistakes, so as to guide their own direction of review. And they are often unable to fully find the problem, so teachers need to strengthen the guidance of students, so as to help students to find their own mistakes. For example, when I know the area of a square, I use multimedia to display the title: "Xiao Wang's family has a vegetable field, and its circumference is 16 meters. What is the area of the vegetable field?" In PPT, I deliberately did not reflect the shape of the vegetable field. In this process, some students take it for granted that the vegetable field is a square to calculate. At this time, we can ask students to realize that in many cases, mistakes require us to see the meaning of the topic before doing the problem, to avoid mistakes, so teachers must ask students to learn to solve the problem on the basis of clear thinking, in order to avoid falling into subjective mistakes.

### **3.2 Organize out Error-prone Exercises and Conduct Intensive Training on Error-prone Questions Repeatedly**

"Wrong question" is an important part of the error resources in primary school mathematics classroom. Many students can do math problems, but some problems are easy to make mistakes. Furthermore, if students do not give enough attention to these error-prone problems, they are still more likely to make mistakes when they face the same or similar problems again. Therefore, it is an effective way for teachers to conduct classroom error training to make full use of classroom error resources, organize error-prone exercises and carry out repeated intensive training. In classroom teaching, daily examination and homework arrangement, teachers should ask students to sort out the wrong problem set, and then summarize and sort out the questions that most students are prone to mistakes, and practice repeatedly. Teachers should sum up some rules of repeated intensive training on wrong questions, and practice on time, level and category, with the ultimate goal being to ensure 100% accuracy when students encounter similar problems. For example, in a class quiz, 80% of the

students answered the same question wrong, but it was not difficult, partly because the students were careless and failed to read the question clearly. It is believed that the teacher can conduct repeated training in a certain period of time. First, the teacher can explain the paper the next day, take out the questions separately and explain them again, and emphasize the attention to solve the problem again. In the next class test, the teacher can put the question on the test paper again and let the students do it again in the same situation. In the future teaching, teachers can also set similar questions for students to answer, so that students have a good grasp of similar questions, for this theme, to achieve the effective use of the wrong problem resources <sup>[3]</sup>.

### **3.3 Urge Students to Find Their Own Mistakes and Develop the Habit of Reflection**

Continuous self-reflection is the most important part of learning. Students can actively find their own deficiencies in the process of self-reflection, and then correct them, so that long-term learning will greatly improve students' thinking ability to master knowledge and solve problems. This is a more advanced way of thinking, for primary school mathematics learning. The cultivation of this thinking ability will be conducive to students' lifelong learning. Therefore, primary school mathematics teachers can guide students to find mistakes in the teaching process, and actively give full play to the value of wrong resources, so that students can be improved and improved in the reflection. At the same time, the teacher asked each student to prepare a wrong book, make the students in the process of summarizing and correct mistakes to continuously strengthen the digestion of knowledge, and in the process of marking errors with mark, integration, summarize mistakes, constantly guide students to recall, with the wrong method to solve the problem, in-depth study, finally can effectively avoid the same error happen again, and knowledge and summary also has certain role, is the true sense of the value of error resources <sup>[4]</sup>.

### **3.4 Use Mistakes Skillfully to Make Active Students' Learning Thinking**

Many primary school students think that mathematics problems are complex and changeable, mathematical knowledge is difficult to understand, and easy to make mistakes in the process of mathematics learning. Some teachers will do everything possible to avoid mistakes, want to make the classroom teaching process completely in accordance with their own preset, such a teaching concept seriously hindered the natural development of

students, make it difficult for students to find their own learning defects, it is difficult to find their own knowledge loopholes, is not conducive to the progress of students. In this respect, teachers should adhere to the "everything from the development of students" teaching philosophy, change the traditional teaching strategy, no longer blindly avoid students' mistakes, but to "mistake" into "treasure", guide the student to face the wrong correctly, make the students find the direction from their own mistakes, better organize their own knowledge system, further active mathematics learning thinking, exercise learning ability. For example, when learning the volume relationship between cylinders and cones, the teacher provides students with three different groups of cylinders and cones and a lot of sand: The first group of cylinders and cones have the same bottom area and height; the second group of cylinders and cones have different heights and the same bottom area, while the third group has different bottom area and the same height. The students were then divided into three groups, each filled with a different cone of sand, and then poured into the cylinder to see how many times it could fill the cylinder. During the operation, the first group of students found that they could only fill the cylinder three times, the second group found that they could fill it twice, and the third group found that they had to walk five times to fill the cylinder. At this time, the students were very confused. Some say the cylinder is three times the volume of the cone, some say the cylinder is twice the volume, and the third group says the cylinder is five times the volume. Then, in order to let the students correct their mistakes, let the students observe and analyze the characteristics of the three sets of containers. Soon, the students realized that in describing the volume relationship between the cylinder and the cone, they needed to ensure the same bottom area and height, and concluded that the cylinder was three times the volume of the cone at the same bottom and height. In this teaching case, teachers create opportunities for students to make mistakes and face mistakes together with students, so as to stimulate students' desire to explore, let students actively analyze the knowledge of cylinder and cone, so that students have a deeper understanding of this part of knowledge content <sup>[5]</sup>.

### **3.5 Treat Mistakes Correctly and Make Diversified Evaluation**

Because pupils thinking is simpler, in the face of error knowledge prone to two extremes, teachers should guide students to face their mistakes in daily learning, let the students in error learning confidence and initiative, improve students' mathematical learning ability, change the students' traditional learning ideas, guide students to set

up a good learning attitude. Teachers should also use a variety of evaluation methods to establish communication with students, and set up a variety of incentive measures in the positive evaluation and guidance, so that students feel that error is not a bad thing. In fact, this will help to improve their ability to explore mathematical problems, help to clarify their thinking of solving problems, improve the efficiency and quality of mathematical analysis. At the same time, primary school mathematics teachers should communicate more with students, dynamically understand students' learning mathematics knowledge, understand students' mathematical thinking level, pay attention to the learning and consolidation of basic knowledge, adjust the teaching plan in the learning process according to the mistakes of students, teaching plan and teaching content. In this work, teachers should remember not to blame the students or be angry about their mistakes. They should use the wrong resources as a mirror to understand students, and take this as a starting point for targeted teaching, so that students know where their mistakes are, why and how to avoid them. Compared with the successful experience, the wrong course may play a more important role for students, so teachers must interact with students in the teaching, careful analysis of the students' mistakes, at the same time, teachers should also reflect on their mathematical activity design is scientific and reasonable, to further optimize the classroom atmosphere, improve the efficiency and quality of course teaching<sup>[6]</sup>.

#### 4. Conclusions

Mistakes are the right forerunner, is the ladder to success. The mistakes made by students in class are good resources to strengthen students' knowledge and learning. The real classroom is full of mistakes. Therefore, as a pri-

mary school mathematics teacher, in the actual classroom teaching, should actively make use of mistakes, make full use of error resources, good at finding students' mistakes, enable students to reflect on the causes of error, so as to improve the students' personal ability in activating the classroom teaching, find ways to correct mistakes, to solve their own problems.

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