Universe Scientific Publishing

ORIGINAL ARTICLE

# A Study of Primary Students' Problem－finding and Problem－posingin Mathematics Learning

**Zixi Zhao**

Changsha Normal University, Changsha 410000, Hunan, China.

***Abstract:*** Mathematics curriculum standard of compulsory education clearly points out that primary school mathematics education should focus on the improvement of students' ability to find and put forward problems, which directly affects the development of students' innovation ability. Students' problem－finding and problem－posing can play an important role in classroom generation resources, realize effective interaction between teachers and students, and continuously improve and optimize the effect of students' autonomous learning. The mode of teachers' raising questions, students' answering questions is the dominant mode of traditional teaching mode. Many students find it difficult to ask effective questions or the content of the questions is superficial. It is the only way to provide more opportunities for students to ask questions and realize students' autonomous learning, which is the development of mathematics teaching and the improvement of students' mathematics literacy. Learning from thinking, thinking from doubt, stimulate students to think and try to solve problems can realize the sustainable development of teaching "problem－finding and problem－posing" plays a fundamental role in the process of mathematics teaching. This study focuses on problem－finding and problem－posing in the process of primary school students' mathematics learning.

***Keywords:*** Primary School Mathematics; Problem－finding; Problem－posing; Mathematics Learning

## 1. Introduction

In daily teaching, teachers often find that students seldom ask math questions, and their problem awareness is seriously lacking. When teachers ask students, "what questions can you ask?" Many students seem at a loss. Even if the teacher deliberately said some wrong, the students rarely dare to question, which makes the students completely in a passive state in the mathematics classroom. Not asking questions, not daring to ask questions, and not wanting to ask questions have become the common problems in the process of primary school students' mathematics learning.

## 2. Value analysis of finding and raising problems

### 2.1 Give full play to the main role of students

The new primary school mathematics curriculum reform makes clear the dominant position of students in the learning process. Teachers should organize and arrange various curriculum elements around students when carrying out teaching activities, so as to achieve the comprehensive improvement of teaching quality and teaching effect. In order to show the dominant position in the process of mathematics learning, primary school students must actively participate in various teaching activities, actively carry out exploration and practice, and teachers should actively realize the teaching organization and situation creation, so as to enhance students' problem awareness, enhance students' interest in solving problems, and guide students to effectively participate in the teaching process. When students get exercise in the teaching activities related to problems, they can explore the answers to problems by means of observation, analysis, exploration, demonstration and other methods they are

very familiar with when they encounter difficulties again, and feel the fun and joy of solving problems, which plays a very prominent role in stimulating and promoting students' interest in mathematics.

### 2.2 Activate students' creative ability

Questions are the basis of solving problems. They run through before, during and after teaching activities. Therefore, they are also the necessary links in mathematics teaching. Problem—finding and problem—posing can help students better understand and grasp mathematics problems, and then speed up the process and speed of problem solving. In the process of students' mathematics learning, teachers should insist on students' leading and activating students' potential, so that students can more actively find and put forward problems, problems contained in knowledge can be better found, students' thinking will also be activated, students' desire for knowledge can naturally become learning motivation, and students will maintain their desire to explore knowledge, imagination ability and thinking ability will develop in coordination. Only when students have the ability to find and put forward problems can they better participate in mathematical creation.

### 2.3 Construct cognitive system and ability structure

In the process of mathematics learning, primary school students can effectively find problems and put forward their own doubts, which can further strengthen their understanding and understanding of knowledge. Based on the existing cognitive structure, they can use problems to constantly improve themselves, and understand knowledge more effectively in the process of finding and solving problems. Students will gradually begin to keen to ask questions, and they have a stronger spirit of questioning knowledge. In order to verify their own problems or find the answers to them, students need to mobilize the knowledge they have mastered, start deep thinking around the problems, and realize the transformation of mathematical problems from abstract to concrete. In this process, students will gradually form new ideas, This will also have a very positive impact on the sustainable development of students' thinking and the strengthening of their cognitive structure.

## 3. Teaching strategies for pupils to find and put forward problems

### 3.1 Pay attention to students' differences and teach students in accordance with their aptitude

There are obvious differences between boys and girls in the way of thinking and thinking habits. According to the survey conducted by Zhang Lin in Huai'an primary school, the ability of finding and asking problems between the two is more significant, and girls' performance is generally better than boys. Therefore, in the process of teaching design, teachers should fully consider the differences between boys and girls, and give full play to the advantages of boys and girls. There is a positive correlation between primary school students' ability to find and put forward problems and their performance. Teachers should pay more attention to the students with poor performance, give them encouragement and support, especially give them more opportunities to show themselves, encourage and praise them in various ways, and provide them with the same exercise opportunities. Finding and solving problems should be an effective combination of knowledge and application, which is also a valuable opportunity for students to show themselves. Students with better performance will often get more attention from teachers. Students will be full of renewed confidence after teachers' praise, and then form a virtuous circle, which is also the basis for teachers to find and put forward quality problems more effectively.

### 3.2 Connecting learning with life and enriching educational resources

The resources of primary school mathematics curriculum are relatively monotonous. In the process of learning, students are often unable to put forward mathematical problems according to the actual situation. The quantity and quality of problems found and raised by students cannot reach the ideal state. The important reason for this phenomenon is that the relationship between learning and life is not close. Mathematics curriculum resources need to be more closely related to students' life and continuously enrich students' life and cognitive experience. Dewey's theory of "education is life" makes it clear that school is an open environment. School education resources should be more closely combined with students' life, and the situation in life should be effectively displayed in life and education, which will become more effective teaching resources. Materials in life can better activate students' interest and enhance their sense of security. Observing and discovering problems in

life can be used as an important method for students' mathematics learning. Teachers can play the role of organizers, guides and collaborators, realize the integration of life experience and mathematics teaching, and design situations closer to students' life, students are encouraged to find, put forward and finally solve problems on this basis.

### 3.3 Optimize the teaching design and sort out the teaching mode

Each link of mathematics teaching has direct relationship and internal logic. The orientation of teaching objectives, the selection of teaching contents, the breakthrough of key and difficult points, the development of teaching process and the presentation of curriculum resources will have a direct impact on teaching. Teachers should not only master the teaching design, but also complete the integration and development of resources. The mathematics teaching design in primary school should adhere to the problem orientation, and teachers should give students more time to make conjectures in the classroom and carry out a comprehensive discussion around students' confusion.

## References


1. He X. Research on the elements and connotation of primary school mathematics core literacy——Based on the comparison of mathematics curriculum objectives in the United States, Britain and other five countries. Journal of Mathematics Education 2019; 28(5): 84－91.
2. Chen W, Shen S. Research on deep problems in primary school mathematics teaching——Case analysis based on expert teachers' classroom questioning. Curriculum, Teaching Materials, Teaching Methods 2019; 39 (10): 118－123.
3. Zhang D, Wu Z. An Empirical Study on the cultivation of primary school students' problem posing ability——Taking primary school mathematics teaching as an example. Chinese Journal of Education 2017; (5): 100－104.
4. Wei X, Cui G. Cognitive analysis, simulation and teaching enlightenment of mathematical problem solving in primary schools——Taking the problem of "adding different denominators" as an example. Research on Audio Visual Education 2013; 34(11): 115－120.