Exploration on the methods of cultivating high school students' mathematics application consciousness and ability

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Abstract: under the background of the new curriculum reform, the cultivation of students' knowledge application consciousness and application ability has been paid more and more attention. High school mathematics curriculum has the characteristics of instrumental and practical. Teachers should pay attention to the implementation of the requirements of the new curriculum reform, and focus on improving students' knowledge application ability and application consciousness in limited classroom teaching, so that students can master more mathematics learning methods and realize the development of comprehensive quality. Cultivating students' mathematical application ability in high school mathematics teaching is an inevitable measure to implement the teaching reform, which plays a positive role in improving teaching quality and developing students' comprehensive ability. Based on this, this paper analyzes the cultivation methods of high school students' mathematics application consciousness and ability, in order to provide references for educators.

Key words: high school; Mathematics; Application awareness; Application ability; teaching method

Introduction: with the continuous promotion of teaching reform, the goal of high school mathematics teaching is no longer limited to the mastery of students' knowledge and skills, but pays more attention to the implementation of the core quality of the discipline, and effectively cultivates students' application consciousness and application ability. In this regard, in high school mathematics classroom teaching, teachers should pay attention to the cultivation of students' mathematical application ability, set up the corresponding curriculum situation according to the teaching needs, effectively improve the teaching pertinence, set up various forms of mathematical activities, and let students establish their own basic ideas and develop their application ability in practical learning. The teaching reform has shifted the focus of teaching from the knowledge points of teaching materials to students, which effectively reflects the humanistic nature of mathematics curriculum. Teachers should focus on cultivating students' ability to apply knowledge, so as to effectively innovate curriculum teaching and promote teaching and learning.

1. Actively change the teaching concept and give full play to the dominant position of students

In order to effectively cultivate students' application awareness and ability, teachers should pay attention to changing teaching concepts and correctly recognize the important value of improving application ability for students' future development. For teaching, teachers' teaching philosophy directly guides teachers' teaching behavior. If teachers' teaching philosophy is backward and lack of attention to the cultivation of application awareness and ability, the designed teaching activities can not meet the development needs of students and it is difficult to effectively improve students' comprehensive ability. Teachers are the designers and organizers of teaching activities. They should pay attention to the cultivation of application awareness and ability into the whole process of teaching, so as to design appropriate teaching programs. In this process, teachers should strengthen the understanding of students' actual situation and life experience, set up teaching with the help of students' existing knowledge and experience, effectively cultivate students' creative thinking and application ability, so that students can apply what they have learned to solve practical problems and flexibly use knowledge. Mathematics knowledge is difficult, so teachers should pay attention to innovative teaching contents and methods to avoid the boring feeling of simple theory teaching. In this regard, teachers can create interesting and vivid teaching situations in teaching, so as to better stimulate students' learning enthusiasm, give play to students' dominant position in learning, and enable students to actively participate in course learning and achieve ability development. For example, in the teaching of "median line of triangle", the teacher can create a real-life application scenario: a classmate received a triangular cake on his birthday, and he needs to divide the cake equally among four students, including himself. To ensure the size and shape of the divided cake are consistent, how do you divide it. To solve this practical problem, teachers guide students to discuss in groups and let students get solutions through group discussion. In this process, students analyze problems according to the knowledge they have learned, actively share their views, and get answers through thinking collision. This process can effectively stimulate students' learning enthusiasm, promote students' independent thinking, enable students to better participate in the course learning, and realize the effective application of the learned knowledge.

2. Renew classroom teaching methods and deepen students' application learning

Improving students' classroom participation is an important prerequisite for training students' application awareness and ability. Teachers should pay attention to updating classroom teaching methods, promoting students' active participation, and enabling students to realize the effective application of knowledge in course participation. In this regard, teachers should change the traditional teaching mode of "teaching by teachers and recording by students", guide students to explore by setting different teaching tasks, and promote students to develop knowledge application awareness and develop their own application ability under different teaching tasks. Competition activities can effectively stimulate the competitiveness of high school students. Teachers can organize and carry out classroom competition activities in the mathematics classroom, so that students can focus on the learning and application of knowledge, effectively enhance students'

learning enthusiasm, and consolidate students' mathematics learning foundation. Before organizing the activities, teachers can create corresponding competition situations according to the actual mathematics competitions, so that students can be infected by the situations and participate in classroom activities as soon as possible. Most high school students have a strong sense of competition. Competition can not only enhance students' learning enthusiasm, but also enrich students' learning experience and let students learn more knowledge. In the process of participation, high school students participate in the team, hoping that their team can win, and then can stimulate students' internal potential and enthusiasm for participation. Competition activities can be placed after learning new knowledge or consolidation after class, so that students can apply the new knowledge they have learned for fierce competition. In terms of setting up competition groups, teachers can set up groups according to students' comprehensive learning situation and knowledge reserve ability to ensure that the comprehensive level of each group is close. In terms of topic selection, teachers can take the important and difficult contents of new knowledge and common mathematical problems as the theme, guide students to explore in the form of competition, so as to realize the effective mastery of knowledge. In terms of competition standard setting, teachers can take the calculation time, calculation efficiency, calculation accuracy and other indicators as the competition evaluation criteria, and select awards such as excellent competition group and the fastest improving individual, so as to form incentives for group members. The form of competition is novel, which can provide every student with the opportunity to participate in the classroom and show themselves, and is conducive to improving students' application awareness and ability.

3. Cultivate students' application consciousness by connecting with practical problems in life

In the cultivation of mathematics application ability, teachers should pay attention to the relationship between mathematics knowledge and real life, so that students can view life problems from the perspective of mathematics, extract mathematics knowledge from life, and develop good application consciousness. For example, teachers can apply information technology to integrate more mathematical knowledge for students, enrich teaching by using the resources of Internet and television information channels, promote the teaching content to keep pace with the development of the times, connect teaching with students' daily life and social hot spots, enhance students' learning enthusiasm, and enable students to extract corresponding mathematical information from life problems, Use the knowledge learned to solve practical problems in life. This teaching method can improve the interest of teaching content, show boring and static mathematical knowledge with specific life cases, and effectively stimulate students' learning enthusiasm. Teachers should strive to build a suitable teaching atmosphere so that students can enjoy the learning process of mathematical knowledge, rather than passively accept the knowledge infusion. In this regard, teachers should enhance the interaction with students, so that students can gradually explore the path of knowledge application under the guidance of teachers, and gradually form a good awareness of knowledge application. In lesson preparation, teachers should collect life-related cases or situational information according to the actual situation of students, prepare for classroom teaching in advance, and set some interesting questions and situations for students. In the teaching process, teachers should flexibly adjust teaching problems according to students' feedback to make teaching activities more targeted. At the same time, teachers should avoid direct question and answer communication with students, but promote students to form their own understanding and effectively develop students' thinking ability in the process of guiding students' exploration. For example, in the teaching of the course "the relationship between line and circle", teachers can first use new media to dynamically display the changing relationship between line and circle, and construct the location relationship related to life combined with the course content. For example, the ship returns to the port along a straight line, and receives the typhoon forecast in the process. The affected area of the typhoon is a circular area, Teachers can regard the changes in the distance of the ship and the typhoon influence range in this problem as straight lines and circles, so as to explore mathematical problems. Then the teacher listed the relevant data information, let the students use the mind map to understand the location and the idea of solving problems, explore the application of mathematical formulas in real life, and promote the students' awareness of knowledge application.

Concluding remarks

To sum up, high school mathematics plays an important role in cultivating students' learning ability and thinking ability. In the new curriculum reform, teachers should focus on cultivating students' application awareness and ability, set up teaching through diversified teaching means and methods, and introduce target situations into the classroom, so as to attract students' attention, stimulate students' learning motivation, enhance students' interest in learning, and enable students to immerse themselves in mathematics learning, Realize the improvement of knowledge application ability. By constructing diversified teaching situations, it is conducive to enhancing the interaction between teachers and students, developing students' thinking ability, and continuously enhancing students' mathematical application ability.

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