

Brief Discussion on the Strategy of Creative Situational Classroom Teaching for Mathematics in High School in the New Era

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Abstract: Compared with primary school and junior high school mathematics, senior high school mathematics knowledge system is more complex and abstract. At present, there are some problems in high school mathematics education, such as students' lack of interest in learning and teachers' outdated teaching methods, which affect the promotion of the new curriculum reform of high school mathematics. In view of the problems existing in the high school mathematics classroom teaching in the new period, this paper puts forward a series of targeted situational creation measures, which is of great significance to help high school students to improve their mathematics core literacy and provide reference for improving the quality of high school mathematics teaching.

Keywords: High School Education; Mathematics; Situational Teaching; Teaching Quality

In recent years, with the implementation of the new curriculum standards, the national high schools actively carry out teaching reform and innovation. Among them, situational teaching can guide students to analyze and think from multiple dimensions, improve students' understanding of knowledge. Especially, high school mathematics knowledge is relatively abstract, which is difficult for students to understand it. Carrying out situational teaching can make high school students realize the characteristics of mathematical knowledge and stimulate students to explore mathematical knowledge^[1]. In addition, the development of computer Internet technology also provides assistance for the development of high school mathematics situational education. Making electronic teaching plan can effectively reduce the time of blackboard writing in class. Through vivid graphics and pictures, supplemented by sound, stimulate students' senses, so that students can actively participate in teaching activities, and improve the quality of high school mathematics classroom teaching.

1. Problems existing in high school mathematics classroom teaching

1.1 High school students lack interest in learning

Senior high school students are in adolescence, sensitive to people and things, and lack of motivation in the daily learning process, which is mainly reflected in the lack of interest in learning and energy input, and the poor degree of autonomy and participation^[2]. In addition, the goal of high school students is to participate in the college entrance examination, but for the students themselves, they often think that the goal is the parents' expectation, not their own goal. The lack of the goal of struggle, the students' learning is relatively passive, leading to the lack of students' learning motivation. In addition, students are faced with the pressure of college entrance examination. Some parents and teachers do not realize the students' nervousness and neither give encouragement and care, which leads to the decline of students' interest in learning, and not conducive to the healthy growth of high school students.

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1.2 Students' learning methods are rigid

A good learning method can make students learn with half the effort, but when they are involved in the process of mathematics learning, there is no scientific method as support, just blindly recite, without mastering learning skills and unobvious final learning effect^[3]. In addition, teachers in the daily teaching process, the lack of communication with students. Teachers will give attention to good student, who make fast progress, while poor students eager to improve their academic performance, but there are problems in learning methods and fear of communication with teachers, seriously affecting the progress of students' performance. In addition, students' understanding of mathematics is not thorough enough, which also leads to the rigidity of students' learning methods. Parents and teachers apply a mountain of homework for students to learn, and improve students' mathematical thinking through practical. The students' scores will be improved in this way, but with the poor effect and resulting low interest for learning. In the long run, students will imperceptibly think that as long as they don't understand the topic, they will use the way of large amount of homework to learn. The rigid learning method is not conducive to the cultivation of students' core mathematical literacy.

1.3 Teaching methods need to be improved

With the advancement of curriculum reform, great changes have taken place in senior high school education. On the one hand, the emphasis of senior high school education on mathematics, physics and chemistry is weakening. It no longer exists that to learning mathematics, physics and chemistry can move towards the world. High school education pays more attention to the development of students' comprehensive quality. On the other hand, the teaching content of high school mathematics is also constantly deepening, and the content that some universities only involve will be simplified and integrated into the high school mathematics curriculum^[4]. However, the educational methods and ideas of individual high school teachers have not changed. They still use the traditional teaching methods, such as cramming and lots of homework tactics. Although students' scores will be improved to a certain extent, their mathematical literacy has not been significantly improved in the long run. Today's society is changing rapidly, the demand of social enterprises for talents is no longer to be able to calculate, but to be innovative, able to integrate the knowledge learned, ferment new things conducive to social development. In addition, although some advanced teaching methods and means such as situational teaching and multimedia teaching are adopted in some high schools, they are not combined with the course content, and the teaching effect is not ideal. In addition, high school teachers lack of communication with students, resulting in teachers' classroom teaching, that is teachers speak and students listen, without interaction. Teachers do not get feedback on students' understanding and mastery of knowledge, so that the closed loop for teaching cannot be formed. The teaching methods have not been optimized, students have not put forward some knowledge points that they do not understand. When encountering problems in the future, students will make mistakes. In order to reduce mistakes, repeatedly learn will be carried out but with poor learning effect.

2. The strategy of creating high school mathematics classroom teaching situation in the new era

2.1 Making rational use of multimedia technology to carry out high school mathematics classroom teaching

The development of information technology provides convenience for high school mathematics teaching. On the one hand, teachers can use multimedia technology to make teaching plans and share excellent teaching plans. In addition to improving the level of high school teachers' teaching plans, they can also help new teachers in other schools to improve the level of teaching plans. On the other hand, the production of teaching plan can be continuously optimized and improved, because of the convenience of electronic teaching plan, it can support editing and adding of various pictures and videos, and can enrich the content of teaching plan. With the deepening of curriculum reform, many new teaching contents and ideas will continue to increase. The updating of electronic teaching plan can help teachers complete the task compared with the traditional paper teaching plan, with more advantages and less blackboard writing work, greatly improves the classroom teaching time, so that teachers and students can focus on knowledge learning, rather than copying notes.

In addition, when making courseware, teachers should dig deeply into the content of the textbook, systematically sort out the knowledge points of the textbook, and deliberately break the order of the chapters of the textbook if necessary. In addition, the making of courseware should follow the principle of simple and clear, easy to understand, reduce the increase of

background color and make students focus on mathematics knowledge. At the same time, for some abstract text description, through the way of graphics and images, complete the transformation, gradually guide students to use brain to think, so as to help them improve spatial thinking and abstract thinking.

2.2 Creating life situation and carrying out situational teaching

High school mathematics has a strong abstraction, students in the knowledge understanding and learning process is easy to produce wrong understanding, it is difficult to build a systematic knowledge structure, and students are also difficult to apply the knowledge to real life. Therefore, teachers should analyze and excavate the content of the course and the reality of life before explaining the mathematical knowledge, guide students to deeply understand and explore knowledge points through the way of creating life situation, so as to improve students' application ability of knowledge. For example: probability knowledge in high school mathematics is very abstract. Before teaching, teachers should integrate probability knowledge with real life situations, guide students to divergent thinking, and think about the correlation between probability and life from various dimensions. In order to improve the classroom atmosphere, teachers can introduce the probability of winning lottery tickets in life, so that students can understand the probability of random events. Through the example of lottery tickets, students' attention can be focused, which can stimulate students' interest in learning, improve students' subjective mobility, and at the same time, arouse students' thinking about the correlation between mathematics knowledge and life, for cultivating their mathematics core literacy.

2.3 Flexible use of physical objects to carry out demonstration teaching

High school knowledge learning requires students to have strong logical thinking and abstract thinking, especially the knowledge of geometry. In addition, complex and abstract graphic description is easy to make students misunderstand the meaning of the topic. In teaching activities, teachers can use some teaching aids or living supplies to make students understand knowledge more intuitive. For example, when explaining geometry, teachers can show teaching aids such as cones, cuboids and spheres to students, or use some plasticine to facilitate students and teachers to cut them, so as to cultivate students' geometric thinking and help students master the characteristics of space geometry. In addition, teachers should be good at asking questions in depth, which can stimulate students' curiosity and interest in learning. For example, asking how to cut cuboid into cube and tetrahedron, etc. On the one hand, it is to investigate students' mastery of various geometric figures, so as to carry out teaching work pertinently. On the other hand, it can activate the classroom atmosphere and arouse students' discussion and thinking.

3. Conclusion

With the gradual deepening of high school mathematics curriculum reform, teachers need to actively innovate teaching methods, scientific use of multimedia technology, enrich classroom content, so that mathematical knowledge is no longer boring. At the same time, in the teaching process, we should be good at making use of physical objects and teaching aids to make students' understanding of mathematical knowledge more intuitive. By actively creating problem situations, we can timely understand students' mastery of knowledge, so as to form a closed loop of teaching activities and lay a good foundation for cultivating students' core mathematical literacy.

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