The Construction Strategy of Group Cooperation Model in Junior Middle School Mathematics Teaching

Yan Yang

School of Materials Science and Engineering, Changchun University of Science and Technology, Jilin, Changchun 130022

Abstract:

In junior middle school mathematics teaching, group cooperation is one of the teaching modes often used by teachers, which is essentially different from the "cramming" teaching mode in traditional teaching. Under the mode of group cooperation, teachers divide students into groups according to their learning situation, and guide students to communicate and discuss mathematical problems, so that students become the main body of the classroom. In this learning atmosphere, students are more likely to ask difficult questions and think with other members of the group, and they can propose solutions to problems according to their own thinking patterns. Based on this, this paper explores the current situation of junior high school mathematics teaching, analyzes the importance of applying group cooperative learning in junior high school mathematics teaching, and explores the application strategies of group cooperative learning in junior high school math classroom teaching, in order to effectively improve the quality of teaching.

Keywords:

Junior high school mathematics; Group cooperation; Subject status

Introduction:

TAutonomous cooperation is the teaching mode advocated by the current basic education. Its application in junior high school mathematics teaching to guide students to carry out group cooperative learning has a positive impact on correcting students'learning attitude and improving the effect of mathematics teaching, which makes the construction of group cooperative learning mode an important part of junior high school mathematics teaching reform. Through group cooperative learning, we can give students more space to find the implicit content of mathematics, stimulate students'interest in learning, return the status of classroom masters to students, and guide students to explore freely in the ocean of mathematical knowledge. This paper will take the related problems of group cooperation in junior high school mathematics teaching as a starting point to carry out deeper research work.

1. Current Situation of Mathematics Teaching in Junior Middle School

(1) The current situation of teachers' teaching

With the continuous promotion of the education reform process, junior high school mathematics teachers have gradually changed the traditional teaching philosophy. However, due to the influence of exam-oriented education, some teachers lack innovation in teaching content, which reduces the efficiency of classroom teaching, restricts the formation of students'comprehensive literacy and affects the effect of classroom teaching. In the actual teaching, some teachers tend to pay more attention to students' passing rate and examination results, and the evaluation method is too subjective, which is easy to attack students' self-confidence, ignore the cultivation of students' learning ability and emotional attitude, fail to combine the learning situation with the actual situation of students, restrict the cultivation of students' autonomous learning ability, and fail to cultivate students' divergent thinking ability. It is difficult to cultivate students'mathematical literacy fundamentally. At the same time, teachers' teaching philosophy has not been completely changed, some teachers still use the "cramming" and "cramming" teaching methods, failing to study the content of the textbook in depth, reducing students' interest in learning, resulting in students' psychological resistance. The teacher-led teaching form also tends to ignore students' actual mastery of knowledge, coupled with the lack of interaction between teachers and students, resulting in low classroom activity and students' enthusiasm, which greatly affects the improvement of mathematics classroom teaching efficiency. In addition, teachers fail to integrate modern educational technology into classroom teaching, on the one hand, lack of understanding of information technology teaching; On the other hand, their own information literacy is insufficient. As far as the use of information technology

by teachers is concerned, there has been no fundamental or substantial change. The purpose of introducing information technology is to improve the quality of classroom teaching, but some teachers fail to adjust the teaching mode according to the feedback of students in class, ignoring the dominant position of students in the classroom, which affects the overall teaching effect.

(2) The current situation of students' learning

Junior high school mathematics is a more systematic and abstract subject, students are more difficult to learn, especially in the understanding of key and difficult knowledge, teachers need positive guidance. Because of their low interest in learning, students are prone to be tired of learning in the process of learning, and can not feel the pleasure of learning mathematics. Some students are difficult to actively participate in classroom teaching activities, fail to build a good mathematical learning thinking, logical thinking ability can not be improved, it is difficult to combine mathematical theoretical knowledge with practice, the ability to integrate and draw inferences about other cases from one instance is poor, thus affecting the efficiency of classroom teaching.

2.The influence of group cooperative learning mode in junior middle school mathematics teaching

(1) Correct learning attitude and improve students'mathematical thinking level

Under the background of the new curriculum reform, students occupy the "master" position in the classroom, and their learning attitude directly affects the teaching efficiency and learning effect. Constructing group cooperative learning mode, organizing students to cooperate in the group, deepening the interaction between group members, and making them learn from each other in the learning environment of "three people walk, there must be my teacher", can further correct their learning attitude. With the correct learning attitude, students continue to cooperate in mathematics learning activities to find problems, solve problems independently, and strive to explore ways to break through learning bottlenecks in groups, so that their thinking becomes more active, not only mastering more diverse mathematical thinking methods, but also effectively improving the level of mathematical thinking.

(2) Weakening the pressure of teachers and cultivating students'sense of teamwork

In the past "indoctrination" and "cramming" teaching mode, teachers need to face the greater teaching pressure of "imparting knowledge to students in detail", which has caused certain restrictions on teachers'professional growth. Under the mode of group cooperative learning, teachers should reduce the behavior of directly instilling and imparting knowledge to students, encourage junior high school students to explore mathematics cooperatively, and change the previous teaching mode. This change of teaching mode not only plays a positive role in weakening teachers' teaching pressure, but also enables students to enhance their sense of teamwork in daily cooperation and obtain the quality of teamwork beneficial to future social participation.

3. Strategies of Constructing Group Cooperative Learning Model in Junior Middle School Mathematics Teaching

(1) Fully respect the dominant position of students and stimulate their enthusiasm for group cooperation

Because junior high school mathematics learning has certain requirements for students'comprehensive ability of mathematics, many students will have a certain fear of difficulties in the learning process, and even have resistance to mathematics learning, which is not conducive to the improvement of students' mathematical ability. At the same time, at present, many junior high school mathematics teachers take teachers as the leading factor, occupy the main position, and let students learn passively, require students to recite and memorize the relevant knowledge points repeatedly, and carry out a large number of test papers, so that students can not feel the fun of mathematics learning. Therefore, if teachers want to change the classroom atmosphere and give students more space, they need to use the form of group cooperative learning, so that students'dominant position can be respected, and divide groups according to the actual situation of students, so that each student can find his own group, and formulate learning tasks related to mathematics in the group. Let every student have the opportunity to express their thoughts and thoughts heartily, improve the enthusiasm of students'group cooperation, and realize the overall improvement of their mathematical level. For example, in the learning process of the course "Determination of Parallelogram", there are certain requirements for students' ability to master geometric figures, so it is necessary to clarify the relevant basic definitions of parallelogram, and to solve problems skillfully, so as to meet the requirements of accurately determining parallelogram. But for some students, there is a certain degree of difficulty, some students in the learning process of geometry, lack of imagination, do not accurately grasp the relevant judgment formula, it is very easy to deviate in the actual process of solving problems, and then students may slowly lose confidence in the learning process, and ultimately affect the effective learning of mathematics. Therefore, teachers can guide students to carry out group cooperative learning according to the actual situation of students in the class, divide students into several groups, encourage students to preview the relevant basic definitions of parallelogram before class, and find out the common problems existing in the group, and bring them to the classroom for

teachers to give answers. In view of the personality problems that some students may have, they can also be digested and solved in the group. Through continuous communication and communication among students, they can understand and master mathematics more accurately, and draw inferences about other cases from one instance about the relevant mathematical content of parallelogram, which greatly improves the overall efficiency of junior high school mathematics teaching. At the same time, in group cooperative learning, students can also find self-confidence in mathematics learning by constantly exploring the answers, so that students can face the deeper mathematics learning in the future with a more positive and full mood.

(2) Build a good communication channel between teachers and students to promote group cooperative learning

Teachers should play an applied role in group cooperative learning, through continuous observation of the actual situation of students, to understand the participation of each student in group cooperative learning, to timely understand the problems existing in the group, to make correct guidance at the same time, to give professional guidance, so that students in mathematics learning no longer think that mathematics learning is very difficult. Instead, we should improve students'interest in exploration and desire to learn, let teachers become messengers of communication between students, and let communication become a daily content. For this reason, junior high school mathematics teachers can strengthen their understanding of the group through the way of "online + offline", and "offline" can close the distance between teachers and students through daily actual observation and communication with students in and out of class, so that students can solve the problems encountered in the process of group cooperative learning. To clarify the practical difficulties encountered by students in the process of learning mathematics, and to carry out targeted teaching activities. On the "line", through Wechat, QQ and other means, students can ask questions about the puzzles and problems in daily group cooperative learning, and take an anonymous way, so that students can speak freely about the related problems of mathematics learning on the Internet, and optimize the solutio n of students'problems in the process of group cooperative learning. To maximize the smooth development of group cooperative learning, so that every student can gain something in the process of mathematics group learning. For example, in the learning process of Complementary Angle and Complementary Angle, students need to learn the concepts of complementary angle and complementary angle, the nature of complementary angle and complementary angle, azimuth angle and other related contents, which is difficult. The study of complementary angle and complementary angle is the extension of the measurement of angle, so that students can have a clearer understanding of the relevant knowledge of angle in the actual learning, which has an important impact on students' future life, and provides a basis and method for proving the equality of angle in the future, which is of great significance for students to accurately grasp the relevant knowledge of "angle". However, in the process of learning, students need to memorize a lot of concepts, and there may be some confusion about the nature of complementary angle and complementary angle, which is not conducive to students'effective mastery of mathematical knowledge in this section. Therefore, teachers can carry out targeted group cooperative learning according to the relevant contents of "Complementary Angle and Complementary Angle" after the teaching of the knowledge content of this lesson, so that each student can elaborate on the complementary angle and complementary angle, understand the students'actual mastery of the knowledge content of this lesson, and understand the actual situation of students. In the process of each student's knowledge telling, students are guided to reflect on their knowledge mastery, so as to maximize students'mathematical learning ability. At the same time, teachers should also communicate with students effectively and guide students to apply the relevant knowledge of complementary angle and complementary angle to real life. When students carry out cooperative learning in primary schools, teachers can observe on the side, grasp the actual understanding of each student about knowledge points, and use the Internet to record the micro-lessons of this lesson, so that students can have more vivid learning content in group cooperative learning after class, and comprehensively improve students'mathematics learning. It lays a foundation for learning the knowledge of plane rectangular coordinate system and polar coordinates in the future.

(3) Design group cooperative learning activities based on division of labor and cooperation

Teachers should not only enable students to better grasp knowledge, but also cultivate students'autonomous learning ability. Therefore, teachers should change their roles from teaching leaders to learning instructors, design group cooperative learning activities in the case of detailed division of labor, so that each student has his own task, learn and progress together in the group, actively participate in classroom discussions, and get due exercise. For example, in the lesson of "Stability of Triangles", the teacher asked the students: "When decorating the house, if the door is not installed, the decorator will use a stick to nail on the door frame. Why?" The teacher divided the students into groups to work together. Some were responsible for finding the wooden strips, some were responsible for connecting them, and some were responsible for finding out their characteristics. With the joint efforts of the students, a simulated door frame was made. The teacher asked the students to shake back and forth to see what

would happen to the door frame, and then to see what would happen after the stick was nailed obliquely. Students found that: the door frame before nailing the stick is easy to deform, while the door frame after nailing the stick has two situations, if the oblique nail forms a triangle, the door frame is not easy to deform; If you can't form a triangle, it's easy to deform. What is the principle of this? Under the guidance of the teacher, the students found that the triangle had the function of stabilizing the frame. So what are the examples of application triangles with stability in life? In the group discussion, students have a profound understanding of the stability of the triangle. In the process of group cooperation, teachers should refine the division of labor according to the characteristics of students, give full play to the strengths of each student, and make the advantages of groups complement each other, so that students can not only gain knowledge, but also improve their learning ability in the process of cooperation, so as to achieve twice the result with half the effort.

(4) Design group cooperative learning activities based on innovative thinking

In junior high school mathematics teaching, group cooperation is not simply divided into groups according to the number of students, but based on giving full play to students'talents, devoted to cultivating students' self-inquiry consciousness and learning ability. The mode of group cooperation provides students with opportunities to participate in group cooperation, but many students are unwilling to participate in it. At this time, teachers need innovative incentives to attract students who are unwilling to perform in class to actively participate in activities, so as to guide students to think deeply and express their innovative ideas. In this process, teachers should affirm the correct part of students'views, encourage students' innovative thinking, guide students to actively participate in learning activities, especially when students make certain achievements, teachers should give affirmation, so that students can maintain the enthusiasm of active inquiry. For example, in the lesson of "the sum of the interior angles of a polygon", the teacher asks the students to say first: "What is the sum of the interior angles of a triangle?" The students quickly answer that it is 180 °. The teacher asks: "What about a parallelogram and a rectangle?" The students can also answer that it is 360 °. The teacher recalled again: "These figures have three or four sides, so what is the sum of the interior angles of the Pentagon and the hexagon?" The teacher asked the students to discuss in groups and think about how to know the required sum of the interior angles more quickly and accurately. Each group began to discuss one after another: Group 1 used the method of protractor measurement to measure that the sum of the interior angles of a Pentagon was 540 degrees and the sum of the interior angles of a hexagon was 720 degrees; Team 2 divides the pentagons and hexagons into triangles and quadrilaterals by using the method of division and cutting, and then calculates the degree sum. The teacher summarized and analyzed the ideas of each group, praised the students, and asked them to calculate and measure the heptagon and octagon again. The students discussed in groups and calculated the degrees of the polygons separately. After that, the teacher asked the students to summarize the calculation method of the sum of the interior angles of the polygon and try to write a formula. In the process of innovation, the students summed up the polygon interior angle and calculation method. In the process of group cooperation, based on innovation, teachers pay close attention to the discussion and communication of each group, timely guide and guide, so that students'thinking can be innovated and developed, and students' awareness of group cooperation can be improved.

4. Conclusion

To sum up, in order to reduce students' learning difficulty and improve their learning ability, teachers should guide students correctly, respect students' dominant position in the classroom, tap students' multiple potentials, ensure that students' knowledge is increased in group cooperative learning, and form a situation of complementary advantages. In actual teaching, teachers can also give students the opportunity to explore independently by dividing multiple learning groups, strengthen student-student evaluation, help students face themselves better, and form good subject literacy in cooperation and communication.

References:

[1] Hongyan Wang. On the Application of Group Cooperative Learning Model to Improve the Effectiveness of Mathematics Teaching in Junior Middle School. Science Consulting (Education and Research), 2020 (07): 112.

[2] Guihong Wang. On the Construction of Group Cooperative Learning Model in Junior Middle School Mathematics Teaching. Science Consulting (Education and Research), 2020 (07): 138.

[3] Bin Chen. Research on the Application of Group Cooperative Learning Model in Junior Middle School Mathematics Teaching [J]. Curriculum Education Research, 2019 (50): 141.