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Effective Strategies for Middle School Mathematics Teaching in Special Education

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Abstract: The effectiveness of middle school mathematics teaching is related to factors such as deaf students' own factors, learning interests, learning perseverance, and learning attitudes. Therefore, in teaching practice, in order to improve the mathematical literacy of deaf students, teachers must combine the characteristics of deaf students, identify the problems that exist in their learning of mathematics, and lay a solid foundation for lifelong education of deaf students. Based on personal work practice, discuss effective teaching strategies from the aspects of concept teaching, skill teaching, and cultivating mathematical thinking ability.

Keywords: Middle school mathematics; Special education; Teaching strategies

The classroom is the main battlefield for teaching and the main battlefield for improving teaching efficiency. The key to the effectiveness of classroom teaching lies in the teacher's leading role. Effective classroom is a topic of great concern since the new curriculum reform, and the effective classroom teaching model is the value pursuit of every mathematics teacher. Knowing oneself and the enemy, winning every battle. In special education, only by being good at discovering the problems that deaf students have in learning mathematics can effective teaching be achieved.

1. The problems in middle school mathematics teaching in current special education

（1） Different student situations

Special education is a teaching work aimed at students with some physical defects, but each student has significant individual differences and different parts of the defect, which leads to different characteristics in the process of learning mathematics courses. Teachers cannot adopt a unified method for teaching mathematics courses, which can cause some students to have learning difficulties and psychological pressure, which is not conducive to students learning middle school mathematics courses. Many students have different personality traits and mathematical learning foundations, and teaching through a unified approach can only have teaching effects for some students, while other students are unable to learn mathematics courses. Teachers are also unable to effectively provide one-on-one course guidance, which brings difficulties to the learning of mathematics courses in special education secondary schools.

（2） Students have psychological barriers

Students with certain physical defects often experience psychological barriers, such as feelings of inferiority and unfairness of fate, which can lead to a lack of concentration in mathematics learning in high school classrooms and ultimately affect their math grades. Some students, due to psychological barriers, do not like to communicate with teachers and other students, which is not conducive to the construction of the classroom learning environment and has certain obstacles to their mathematics learning. Some students, due to their psychological inferiority, often appear very manic after being unable to understand mathematical knowledge, which is not conducive to their mental health.

（3） The teaching content lacks interest

Mathematical knowledge itself is difficult to understand, and it is difficult for teachers to achieve the goal of interesting teaching without careful design during the teaching process. Due to the dull teaching content, many students may not be able to calm down and listen, which is not conducive to their learning. Many teachers cannot keep up with the pace of the times and only have one form of teaching explanation. Through years of explanation, students will feel tired, which leads to the inability to improve their enthusiasm for learning mathematics courses.

2. Analysis of Middle School Mathematics Teaching Strategies in Special Education

（1） Promote emotional communication between teachers and students

Students with physical disabilities greatly need the care of others, as their physical disabilities can make them very fragile and easily traumatized. Perhaps it is the unfairness of fate or unexpected events in life that make them suffer from certain physiological defects, which hinder their learning of mathematics courses. However, teachers need to constantly observe the state of students. Once any incorrect situation is found, teachers need to communicate with students spiritually to help them solve their doubts. Teachers need to have a certain psychological foundation to provide psychological guidance to students, so that they can maintain an optimistic spirit to face life. Teachers can also hold certain activities in the mathematics classroom to liven up the atmosphere. For example, when asking students a question, if they do not answer, they can impose small punishments, such as letting them be criticized for ancient poetry, singing, etc. Of course, the punishment items should be selected according to the students' physical conditions. This can not only liven up the atmosphere of the mathematics classroom, but also allow students to demonstrate their talents, which is conducive to helping students regain confidence, enhancing emotions between teachers and students, and has a certain helping effect on their middle school mathematics curriculum learning.

（2） Enriching classroom teaching methods

1）The creation of situational teaching

It is particularly important to create situational teaching in special teaching of middle school mathematics, which can arouse students' interest in the content of mathematics courses. This section is the guiding part of the teaching content, with a certain active atmosphere, so that students can feel the joy of learning mathematics. For example, when studying the first volume of seventh grade mathematics course "Stereoscopic Figures in Life", teachers can create situational teaching through interaction with students. Teacher: "Students all know that many of the shapes we learned in elementary school, such as circles and triangles, drawn on the blackboard are two-dimensional shapes, all of which are flat. However, objects in our daily lives are three-dimensional, so which student can tell the difference between two-dimensional and three-dimensional shapes?" Student: "Two dimensional shapes exist in a plane, and three-dimensional shapes can occupy a certain amount of space." Teacher: "This student answered very correctly. So, what are the common three-dimensional shapes in our lives?" Students actively participated, including football and basketball, as well as doors, blackboards, tables, chairs, and benches. ". Teacher: "Do you believe that we can also draw these three-dimensional objects on a two-dimensional plane?" The students all expressed doubts, and the teacher took this opportunity to introduce the teaching course "Stereoscopic Figures in Life". Teachers first discuss common things in life with students, which can attract their attention and encourage active participation. This can greatly improve students' classroom participation. Then, by introducing the content of the textbook, an efficient mathematics teaching classroom can be effectively established.

2）Implementation of Game Teaching

In order to enhance the interest of students in learning mathematics, teachers can combine games with mathematics learning content, which can effectively stimulate students' enthusiasm for learning mathematics. Teachers can use a competitive mechanism to play mathematical games. Firstly, the teacher needs to explain the game rules. Students who can participate in the game should listen carefully. The teacher lists common things in life and corresponding three-dimensional graphics on the blackboard, allowing students to make mathematical connections. When the teacher first starts drawing, students cannot peek. After the teacher finishes drawing, they randomly teach several students to make corresponding connections. The students who connect accurately and quickly win.

3）Group cooperative learning

Many students have their own strengths and weaknesses. Teachers can fully utilize their strengths and form group learning forms in high school mathematics classroom teaching, which can complement each other. Through mutual assistance among students, it can effectively improve their thinking ability. Teachers can group different individuals into the same group when grouping, and we will analyze it using a single function exercise as an example. Example 1: If the function y=(k+3) x+b-3 is a proportional function, what conditions do constants k and b need to satisfy? When the teacher writes the question on the blackboard, they can group the students in the class reasonably and solve

this problem together through cooperative learning. Within the group, the strengths of students should be maximized to effectively improve the efficiency of collaborative learning. Students with normal vision can read questions for those with blurred vision or unable to see the questions, while students with hands can calculate on grass paper for those with incomplete limbs, and through everyone's efforts, help each other solve the problems. Although the process is quite complex, they will use their efforts to prove that they are not inferior. After the students enter the group for cooperative learning, the teacher asks a classmate to go to the blackboard to answer this question.

Solution:

Because this function is a proportional function, we can obtain that b-3=0, and thus we can calculate b=3. As it is a proportional function, the coefficient of the x term cannot be 0, so we can obtain $k+3 \neq 0$, and we can calculate $k \neq -3$

In the reform of the new curriculum, middle school mathematics teachers should fully play the role of the main battlefield of classroom teaching, effectively stimulate the learning interest of deaf students from the aspects of concept teaching, skill teaching, and cultivating mathematical thinking ability, develop their independent personality, and turn effective teaching into reality. Education aims to cater to everyone and society. If everyone has knowledge and skills, this society will be even better.

Reference:

[1] S á nchez A L S, Gallardo J H P, S L M P. The Educational interactive platform for the learning of mathematics in population with special educational needs [J] Journal of Physics: Conference Series, 2019, 1329 012020-012020.

[2] Belt M, Heuvel D V E, Helm D V G, et al. The impact of classroom climate on students' perception of social exclusion in secondary special education [J] Children and Youth Services Review, 2019, 103 127-134.