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Optimization of Mathematics Teaching in Large Units in Primary Schools under the Background of Core Literacy

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Abstract: Under the background of core literacy, primary school mathematics teaching is required to face all students, pay attention to students' classroom learning initiative, improve students' practice and innovation ability, and promote students' comprehensive development. Large unit teaching is based on a holistic perspective, so that students can build a complete knowledge system and better achieve the core quality training goals. However, in the actual teaching, there are still some difficulties. Based on this, the following will analyze the current situation of primary school mathematics teaching in large units under the background of core literacy, identify specific problems, and explore corresponding optimization strategies.

Keywords: Core literacy; Primary school mathematics; Large unit teaching

Introduction

Traditional teaching design usually focuses on the specific content of each lesson. Although it is convenient for teachers to effectively complete the main teaching points, it often ignores the connection between different knowledge points and the lack of relevance, which leads to the inability of students to effectively build a complete knowledge system and thus affects the development of their core literacy. Large unit teaching reflects a more comprehensive and systematic teaching design, and can solve the problem of scattered knowledge points and fragmentation in traditional class design. In primary school mathematics teaching, relevant knowledge points are integrated into a large unit to help students independently carry out knowledge transfer in the form of unit themes, so that they can better connect different mathematical concepts, so as to improve their thinking ability and cultivate their core mathematical literacy.

1. Difficulties faced by mathematics teaching in large units in primary schools under the background of core literacy

1.1 Lagging teaching concept

At present, in primary school mathematics teaching, although many teachers realize the importance of cultivating students' core quality and adopt the large unit teaching method, they are still teacher-oriented in class and lack of attention to students' main body. The main reason is that many teachers are still affected by the concept of exam-oriented education, and pay too much attention to the mastery of textbook knowledge to help students better cope with the exam, so as to ignore the cultivation of students' core qualities in teaching design.

1.2 Single teaching method

Due to the lag of educational concepts, in the large-unit classroom teaching, many teachers usually teach the unit knowledge one by one, and students still passively accept the learning and understanding of knowledge, lacking the opportunity to think actively. Under this single teaching method, because teachers fail to start from the actual situation of students, the speed of explanation may be too fast, which makes many students difficult to follow and unable to understand mathematical concepts independently, resulting in their resistance. Teachers usually think that they have explained it deeply, but the actual effect is not ideal, and students fail to achieve the expected learning effect.

1.3 One-sided teaching evaluation

At present, many schools and teachers still evaluate students' learning mainly by test scores. Although this one-sided evaluation

method can reflect students' knowledge mastery to a certain extent, it also makes teachers and students pay more attention to mastering exam skills, ignoring students' thinking development and lacking in-depth understanding and application of knowledge. As a result, learning becomes utilitarian and short-term, and students' comprehensive literacy and practical ability cannot be fully demonstrated. [1]

2. Analysis on optimization strategies of primary school mathematics teaching in large units under the background of core literacy

2.1 Update the teaching concept and clarify the teaching objectives

Large unit teaching is theme-oriented, organically integrates the links between knowledge points, and advocates teachers to change their teaching focus from simply implanting knowledge to cultivating students' core quality, paying attention to students' overall development and learning depth, and improving students' comprehensive ability and practical application ability. In primary school mathematics teaching, teachers need to change the traditional test-oriented education idea from knowledge imparts to learning guides, take core literacy as the teaching goal, clearly sort out the logical relationship between textbook contents, and construct planned and organized teaching activities to show the structured and integrated characteristics of knowledge and stimulate students' learning interest. Guide students to understand and master mathematics knowledge independently, so as to promote students' all-round development. In the teaching design of large units, teachers should also analyze and reflect on the problems in teaching in a timely manner, enrich the teaching content, build a teaching form that is more in line with students' learning and development, promote students to understand the value of mathematics learning, and constantly improve the teaching effect. [2]

2.2 Various teaching methods to improve learning effect

2.2.1 Create thematic situations to stimulate learning interest

The complexity of mathematical knowledge makes it difficult for students to understand and lack interest in learning. The application of information tools in teaching can enrich classroom learning content and enhance students' learning experience. In the large unit teaching of primary school mathematics, teachers can take students' interest as the orientation, pay attention to students' main position, and use information tools to create diversified and interesting learning situations to stimulate students' learning interest and encourage them to actively explore and learn. For example, in the unit teaching of "division of decimals" in fifth grade mathematics of Beijing Normal University, teachers can focus on the theme of "decimals", show students a variety of practical application situations, guide students to observe the real world from a mathematical perspective, and let them independently construct knowledge such as addition and subtraction of decimals, multiplication of decimals, invariant quotient law, and division of integers. Encourage them to actively learn and understand the "decimal division" related knowledge. For example, teachers can show students a video clip of an Olympic shooting or jumping competition, so that students can observe the athletes' performance changes. After watching, teachers can let students analyze the performance calculation of these athletes according to their own observations, and urge them to take the initiative to add and subtract decimals, multiply decimals, divide integers and other relevant knowledge, so that they can understand and review old knowledge in practice, rather than simply relying on the teacher's explanation, and let them realize the practical use of decimals in life. By allowing students to participate in the discussion and analysis of athletes' results, they can stimulate their interest in learning. Teachers can show the "average score of athletes", guide students to think about the relationship between average score and total score, and then introduce the study of fractional division. Through the demonstration of the actual situation, students' interest in math learning can be effectively enhanced, so that they can integrate the knowledge about "decimals" independently, so as to achieve more efficient math learning.

2.2.2 Build the problem frame and develop mathematical thinking

Life-oriented education can help students reduce the strangeness of mathematics and stimulate their enthusiasm to solve practical problems with mathematical thinking. In the large unit teaching of mathematics in primary schools, teachers can design inspiring questions based on the unit knowledge of the textbook and combined with students' real life experience to enhance their learning initiative, so that students can use mathematical knowledge to solve problems in different environments and develop their mathematical thinking. For example, in the unit teaching of "circle" in sixth grade mathematics in Beijing Normal University, the unit goal is to let students understand the characteristics of a circle, draw a circle, explore the process of calculating the circumference and area of a circle, develop students' spatial thinking, and cultivate students' positive emotions of loving mathematics. Teachers can use this as a basis for asking students, "What objects have you seen that are related to circles?" It triggers students' desire for positive discussion and makes them realize that circles are everywhere in life. For example, wheels, pizza, etc. The teacher can follow up with the student's answer by asking, "What are the characteristics of a wheel and a pizza?" Which shape can be changed and which cannot be changed?" Using a compass and ruler, students draw the shape of a wheel and a pizza, and innovate to realize that a pizza can be other

shapes than a circle. In the process, teachers can ask students: "How did you determine the size of the wheel and the round pizza?" Guide students to actually measure and calculate, independently understand the relationship between radius and diameter, and further explore the calculation formula of circumference and area. Through the guidance of life problems, students can effectively stimulate their interest in exploration, so that they can understand and apply knowledge in practical operation, which can not only improve their problem-solving ability, but also cultivate their observation and practical ability. [3]

2.2.3 Group discussion to promote in-depth understanding

Group cooperative learning allows students to start from their own reality, give play to their strengths and advantages, and share different views and problem-solving methods through discussion and interaction. In the large unit teaching of primary school mathematics, teachers can ask students to sort out the key and difficult knowledge of the unit by using mathematical thinking method in a group in the knowledge consolidation stage, and build a perfect knowledge structure network from different angles. For example, in the unit teaching of "circle" in mathematics in Grade 6 of Beijing Normal University, after explaining the formula for calculating the circumference and area of a circle, the teacher can ask students to think in a small group "Why is the ratio of circumference to diameter a fixed value?" . In group activities, students can first share mathematical stories or history related to the circle, for example, they can discuss how ancient mathematicians studied the nature of the circle, or the application of the circle in architecture and art, so that they can better understand the characteristics of the circle, stimulate their creativity and imagination, and cultivate their love of mathematics. Students are then assigned tasks, such as surveyors, recorders, analysts, collators, etc., to work together to actually measure the circumference and diameter of different circular objects, collect data, and try to summarize the concept of PI. Through group cooperative learning, it can not only enhance the fun and interaction of learning, but also help them master and build the relevant knowledge of the circle, cultivate their ability to flexibly use mathematical knowledge to solve practical problems, and finally achieve the goal of all-round development.

2.3 Diversified teaching evaluation to promote comprehensive development

Under the background of core literacy, schools and teachers should pay more attention to process evaluation, and learn about the difficulties and challenges encountered by students in the learning process through diversified evaluation means, so as to timely adjust teaching strategies and give targeted guidance. At the same time, it can also make students realize their own strengths and weaknesses in the continuous feedback, so as to self-adjust and improve, and promote their all-round development. For example, in the group learning of "circle", teachers can guide students to discuss their measurement process from their role identity, think about the factors that may lead to errors, such as the accuracy of measurement tools, different measurement methods, etc., and organize them into learning reports and share them with the class to further consolidate their learning results. Through the establishment of multiple evaluation system, students' self-evaluation ability and reflection ability can be cultivated. Teachers can also help students establish a deeper understanding of the learning process and promote their all-round development in knowledge, ability and emotional attitude. [4]

Closing remarks

To sum up, under the background of core literacy, the teaching of mathematics in large units in primary schools can effectively improve the teaching effect and the learning quality of students. By arranging teaching materials, integrating course content, excavating the connection between knowledge points, and extracting mathematical ideas, methods and core qualities, teachers enable students to gradually understand and build knowledge systems in situations, problems, cooperative learning, and in the process of multiple evaluation, so as to achieve efficient and high-quality teaching.

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