

Strategies for Cultivating Mathematical Core Literacy in Large Unit Teaching

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Abstract: With the continuous promotion of education reform in China and the continuous updating of high school mathematics teaching, core literacy has become a new concept in education and teaching. Under the large unit teaching mode, how to cultivate students' core literacy has become an important issue in the current practice of high school mathematics education. In the process of cultivating mathematical core literacy under the large unit teaching mode, this article proposes five effective strategies: cultivating students' exploratory learning ability; Create a positive and active classroom atmosphere; Improve students' autonomous learning ability; Emphasize the integration of mathematical concepts in learning; Reflect the intersection of mathematics teaching.

Keywords: Large unit teaching core literacy

1. Introduction

In recent years, high school mathematics education in China has been continuously updated and improved in teaching models, teaching content, and training objectives. Among them, core literacy, as a new educational concept, has received widespread attention and application. Under the large unit teaching mode, how to cultivate students' core literacy and improve the quality of mathematics education has become an urgent problem to be solved in the current practice of high school mathematics education. In response to the development and existing problems of current mathematics education, this article first sorts out the connotation of mathematical core literacy and explores that large unit teaching is an effective way to cultivate mathematical core literacy. Based on this, this article proposes five effective strategies for cultivating mathematical core literacy, including cultivating students' exploratory learning ability, creating a positive and active classroom atmosphere, improving students' autonomous learning ability Emphasize the integration of mathematical concepts in learning and reflect the intersection of mathematical teaching. These five strategies require teachers to provide comprehensive guidance and guidance to students, help them overcome difficulties, and strengthen their mastery and application of mathematical concepts and methods.

2. The Connotation of Mathematical Core Literacy

Mathematics core literacy is defined as the basic abilities, ways of thinking, and values that students must master in the process of mathematics learning. This includes mathematical abstraction, logical reasoning, mathematical modeling, mathematical operations, intuitive imagination, and data analysis. The educational significance of mathematical core literacy lies in its ability to help students understand and master mathematical knowledge and methods, improve their mathematical learning and application level, cultivate their exploratory learning and problem-solving abilities, and thus lay a solid mathematical foundation for their future development. At the same time, mathematical core literacy is also an important part of building quality education, promoting students' comprehensive development by cultivating their mathematical core literacy.

3. The Application of Three Major Unit Teaching Models in the Cultivation of Mathematical Core Literacy

3.1 Basic concepts of large unit teaching mode

The large unit teaching mode is a teaching mode that focuses on the overall content of the course. In this mode, teachers integrate all the knowledge points and skills of a certain unit for teaching, and students need to continuously explore, discover, solve problems, and apply the learned knowledge throughout the entire learning process. This teaching model emphasizes the relevance and integrity of course content, which can help students better understand and apply the knowledge they have learned, and cultivate their problem-solving and comprehen-

sive application abilities. This teaching model can also cultivate students' self-learning ability and teamwork spirit, laying a solid foundation for their future development. In mathematics teaching, the large unit teaching model has also been widely applied, which can help students better understand mathematical knowledge, improve mathematical learning performance and core literacy.

3.2 The relationship between the large unit teaching mode and the core mathematical literacy

In the large unit teaching mode, the cultivation of mathematical core literacy is closely related to it. Traditional teaching models often focus on explaining and practicing knowledge points, emphasizing students' mastery of the knowledge points and question types in textbooks. In the large unit teaching mode, teachers will combine several relevant knowledge points into a large unit, and improve students' understanding and mastery of mathematical knowledge through exploration, practice, and other learning methods, thereby cultivating students' core mathematical literacy.

The large unit teaching model not only focuses on students' knowledge learning, but also emphasizes the cultivation of their thinking abilities. In large unit learning, students need to exert exploratory thinking, gradually master mathematical thinking in the process of solving practical problems, establish their own mathematical models and problem-solving methods, and guide students to discover the connections and independent characteristics between knowledge points. This way of thinking not only improves students' mathematical literacy, but also cultivates their scientific literacy, enabling them to better explore and research scientific problems.

In short, there is a close connection between the large unit teaching model and the core mathematical literacy. The large unit teaching mode provides students with a broader learning space and more free learning methods, which can better cultivate students' core mathematical literacy. The application of this teaching model will provide richer ideas and means for the development of high school mathematics education.

3.3 Advantages of the Large Unit Teaching Model in Cultivating Mathematical Core Literacy

The advantages of the large unit teaching model in cultivating core mathematical literacy are mainly manifested in the following aspects:

1. Strong comprehensiveness. The large unit teaching model emphasizes the integration and connection of knowledge, which can organically combine different themes and concepts, promoting students' comprehensive and in-depth understanding of mathematical knowledge.
2. It has practical applicability. The large unit teaching model covers courses within a certain time and scope, closely integrating mathematical knowledge with practical applications, improving students' ability to solve practical problems and expanding mathematical thinking.
3. Shift of teaching focus. Large unit teaching shifts the focus of teachers' teaching from imparting knowledge to cultivating students' thinking patterns, emotional attitudes, and cognitive patterns, which can comprehensively enhance students' growth and development.
4. Strong adaptability. The large unit teaching model adapts to different educational environments and needs, enabling teachers to better respond to the challenges of students' learning difficulties, different interests, and subject characteristics, and promoting the continuous development of mathematics education.

4.Strategies for Cultivating Mathematical Core Literacy in Four Major Unit Teaching

4.1 Cultivating students' exploratory learning ability

In large unit teaching, cultivating students' exploratory learning ability is very important. This requires teachers to guide students to actively think, identify problems, and conduct independent exploration during the learning process. Specifically, on the one hand, it is possible to cultivate students' problem awareness and independent thinking ability by organizing students to discuss and research problems; On the other hand, students can be guided to engage in activities such as experiments, simulations, and explorations to cultivate their exploratory learning abilities. Meanwhile, in this process, teachers should focus on guiding and cultivating students' learning methods to improve their

learning quality and efficiency. Only in this way can students truly achieve deep learning and improve their core mathematical literacy.

4.2 Creating a positive and active classroom atmosphere

Creating a positive and active classroom atmosphere is an important strategy for cultivating students' core mathematical literacy in large unit teaching. Firstly, teachers should take students as the main body, fully leverage their initiative and enthusiasm, and encourage students to express their opinions and exchange ideas; Secondly, teachers can adopt various teaching methods, such as group exploration and role-playing, to enable students to fully participate and interact in the classroom, thereby stimulating their learning interest and enthusiasm. In addition, teachers should promptly acknowledge and praise students' performance, and enhance their learning motivation and enthusiasm through incentive measures; Finally, teachers should pay attention to classroom management, strictly control students' classroom discipline, create a harmonious classroom atmosphere, enable students to study with peace of mind, and effectively improve classroom efficiency. Through the above measures, students can be more engaged in learning, enhance their subjectivity and self-learning ability, and thus better achieve the cultivation of core mathematical literacy.

4.3 Improving Students' Autonomous Learning Ability

Improving students' autonomous learning ability is one of the key strategies for cultivating core mathematical literacy in large unit teaching. Teachers can take the following measures to promote students' autonomous learning:

Firstly, establish a good learning atmosphere. Teachers should create a classroom atmosphere that encourages students to focus on self-directed learning and stimulates their enthusiasm and interest in learning.

Secondly, provide appropriate learning resources. Teachers can provide students with some beneficial learning resources, such as recommending mathematical application software and websites, so that students can better master mathematical knowledge.

Thirdly, cultivate students' learning abilities and methods. Teachers should guide students to actively think about learning strategies and methods, and teach some learning skills, such as memory methods, induction and summary methods, etc.

Finally, provide students with sufficient space for autonomous learning. Teachers should give students a certain degree of autonomy and time for autonomous learning, so that they can unleash their learning potential and discover their shortcomings in practice, thereby improving their learning abilities.

Through the above measures, teachers can improve students' autonomous learning ability and enable them to better grasp the core mathematical literacy in large unit teaching.

4.4 Emphasize the integration of mathematical concepts in learning

In large unit teaching, mathematics teaching should focus on the integration of mathematical concepts, that is, through the connection and application of different concepts, to gain a deeper understanding and mastery of mathematical knowledge. Specifically, teachers can guide students in finding connections and applications between different concepts in problem-solving by designing mathematical topics that span different chapters and units, helping students integrate mathematical knowledge. In addition, emphasizing the integration of mathematical concepts in learning also requires encouraging students to explore the essence and significance of mathematical concepts through practical problem-solving, deepen their understanding and application of mathematical knowledge, and thereby improve their mathematical literacy and problem-solving ability.

4.5 Reflecting the Intersection of Mathematics Teaching

In large unit teaching, mathematics teaching should focus on the intersection with other disciplines, linking and integrating mathematical knowledge with other fields. This can help students better understand and understand mathematics, and also cultivate their interdisciplinary thinking and comprehensive application abilities. The specific implementation methods include: deepening students' understanding and application of mathematical knowledge through the cross integration of mathematics, physics, Chinese and other disciplines; Combining

mathematical knowledge with real-life situations, allowing students to experience the practical application and importance of mathematics in daily life; Encourage students to conduct interdisciplinary project research and cultivate their comprehensive and teamwork abilities. Through these measures, it is helpful to enhance students' interest and understanding in mathematics, and promote their comprehensive development.

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