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Mathematics Core Accomplishment – The Deepening of Three-dimensional Goal

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***Abstract* – The current society is the era of talent competition, if the imparting of knowledge at the same time to cultivate students' core literacy has become a hot topic. The three dimensional objectives proposed in the new mathematics curriculum standard, namely knowledge and skills, process and method, emotion, attitude and values, are three important parts of a lesson. With the deepening and reform of mathematics curriculum, six core qualities of mathematics have been put forward recently. Abstract mathematics, logical reasoning, mathematical modeling, mathematical operations, intuitive imagination, data analysis, the six core literacy is independent and unified constitute the whole, become the baton of modern mathematics classroom. This paper combines the existing research on the core literacy, discusses the relationship between the mathematical core literacy and the three-dimensional goal, and concludes that the two are not in opposition, the mathematical literacy is the deepening and concretization of the three-dimensional goal, and discusses how to implement the core literacy education in mathematics classroom teaching.**

***Keywords* – Three-dimensional Object, Mathematics Core Accomplishment, Relation Deepens, Mathematics Classroom.**

I. INTRODUCTION

The proposal of three-dimensional goal transforms people from traditional knowledge-centered thoughts to the integration and unification of knowledge, ability and emotion. Education not only pays attention to students' achievements, but also pays more attention to students' comprehensive quality and comprehensive ability. Both the three-dimensional goal and the mathematics core accomplishment point out the importance of developing education in all aspects. Three-dimensional goal has been proposed for a long time, but these three steps have been proposed for a long time, but they are not specific enough, and there is the problem of slogan in the implementation, so the mathematics classroom further proposes the teaching goal on the basis of the original. Mathematics core literacy is the comprehensive ability with specific significance that students should achieve in learning mathematics [1]. The six aspects of mathematics literacy point out the emphasis of cultivating students in a more specific way. The relationship between mathematical core literacy and three-dimensional goal is not antagonistic, but further deepening and concretization on the basis of original three-dimensional goal, which has become the guiding ideology of current mathematics education [2]. What teachers should do is to further improve teaching skills and cultivate students' core qualities on the basis of three-dimensional goals.

II. THE RELATIONSHIP BETWEEN MATHEMATICS CORE ACCOMPLISHMENT AND KNOWLEDGE AND SKILLS

Core mathematical literacy is based on mathematical knowledge and skills, but higher than specific mathematical knowledge and skills. If we just blindly inculcate knowledge, the accumulation of knowledge cannot bring the development of literacy, but the development of literacy is inseparable from knowledge, which is the basic of literacy [3]. Knowledge and skills are the description of students' learning results, enabling students to master basic knowledge is an important step in the education process, and the core quality of mathematics is

realized based on knowledge and skills. When students learn knowledge, they carry out mathematical analysis in various ways to understand and master knowledge, which is also the training goal of core literacy. In the process of cultivating knowledge and skills, students gradually accumulate and internalize their knowledge to form the core quality of mathematics. However, core literacy does not refer to specific knowledge and skills, but higher than knowledge and skills [4]. Core literacy is the guiding ideology of cultivating knowledge and skills. Core literacy promotes the cultivation of mathematical skills and is the embodiment of knowledge and skills. Compared with the traditional knowledge and skills, the proposal of the core quality of mathematics is a great innovation of the reform. The mathematics quality that students should have is divided into six aspects, which will affect the teaching of mathematics classroom and provide new ideas for the design of mathematics curriculum. If the core quality of mathematics can be implemented, the understanding of knowledge and skills will not only be the superficial understanding of knowledge, but also trigger more mathematical thinking. From "I have to learn mathematics", I have to learn mathematics and gradually transform into "I want to learn mathematics".

III. The Relationship between Mathematics Core Accomplishment and Process and Method

The core quality of mathematics is implemented in the whole process and method. The learning process of mathematics comes to an end with the end of learning, but the subtle influence of mathematics quality on a person is lifelong. Process and method focus on specific ways to acquire knowledge and skills, not rote learning, but to understand the context of knowledge. However, in the traditional teaching, there is still a majority of indoctrination teaching, but no practice process and method. The defect of this method is that although students have mastered the method in a short time, the learning method will fade or even disappear with the end of learning. Maths is proposed first in teaching methods put forward a big improvement, guide students through the intuitive imagination to understand math problems, intuitive imagination product abstract into math problems, and do logic reasoning, data analysis and mathematics provides a train of thought for the logical reasoning, according to the result of analysis and computing out reasonable logic reasoning, the final mathematical modeling, establish mathematical thinking to mathematics all sorts of problems, from the mode of instilling development to guide the students to think independently, independent analysis. The learning process of mathematics can be interrupted, but the influence of mathematical literacy on a person is huge. What one learns is not only the method to solve a problem, but also the cultivation of this unique mathematical literacy, which also reflects the persistence of mathematical literacy. In later life, students can put forward problems from the perspective of mathematics, understand problems with mathematical thinking and solve problems with mathematical methods.

IV. The Relationship between Mathematics Core Accomplishment and Emotion Attitude and Value

The core quality of mathematics is the connotation of emotion, attitude and values. Emotional attitude and values are the sublimation of psychological experience and emotion after students obtain certain results, which is also the connotation of the core quality of mathematics. The proposal of the core quality of mathematics aims to let students understand the mathematical culture, experience the charm of mathematics, understand the scientific rigor of mathematics, view problems with the perspective of mathematics, and find the beauty of mathematics. PISA puts forward: "mathematical literacy refers to the knowledge and ability to understand the status and ability

of mathematics in natural and social life, make mathematical judgments, and participate in mathematical activities in current or future life to meet the needs of an individual to become a concerned and thinking citizen [5]. A lesson should not only impart knowledge, but also impart correct emotions, attitudes and values. In today's society, the cultivation of core literacy has become a goal committed to all over the world [6]. The cultivation of talents not only teaches knowledge, but also cultivates an ability to serve the development of society and create its own value. Under the guidance of core literacy, students learn mathematical knowledge, cultivate correct values, and become a useful person to the society.

V. Conclusion

After analyzing the relationship between the three-dimensional goal and the core accomplishment, we can draw a conclusion that the core accomplishment of mathematics is the deepening of the three-dimensional goal, the three-dimensional goal reflects the importance of thinking development, and the development of thinking is the essence of the core accomplishment of mathematics [7]. In the implementation process of education and teaching, literacy education should be further carried out on the basis of the original three-dimensional goal, and the three-dimensional goal should be implemented. The unity of knowledge, skills and emotions should not become a slogan [8], and the core quality of mathematics should be implemented in the whole teaching. Knowledge and accomplishment are not opposites, the carrier of knowledge accomplishment, accomplishment is the connotation and value embodiment of knowledge.

VI. How to Implement the Core Quality Education in Mathematics Classroom Teaching

After analyzing the relationship between the three-dimensional goal and mathematics and the core accomplishment, we can think about how to implement the three-dimensional goal in the actual teaching. There was once a questionnaire about high school math class, which was distributed to 515 students in high school. The first question on the questionnaire was: do you think high school math is important? 93.58% of the students chose the option of "I think high school mathematics is very important". It can be seen that almost all students are aware of the importance of mathematics. Then the second question is: do you like studying high school math? 16.03% of students like it very much, 25.05% like it, 52.9% don't like it very much and 6.01% don't like it at all. The result was unexpected. Although we all knew the importance of mathematics, more than half of the students were forced to learn mathematics instead of loving it, which had a lot to do with the old-fashioned indoctrinate teaching of mathematics in class that students did not like. The answer to another questionnaire is worth pondering: the question is: what is your math teacher's teaching style? 30.46% of the students chose to give priority to teaching, 14.02% of the students chose to let students learn cooperatively in class, 42.08% chose to combine teaching with practice, and 13.42% of the students chose to create a problem situation to guide students to explore new knowledge. It can be seen that there are few teachers who can create problem situations and guide students to explore new knowledge in math class, but most of them focus on speaking and practicing and pay attention to the results.

In order to enrich the teaching class and avoid the slogan problem of the core quality of mathematics like the three-dimensional goal, I think the core quality education should be implemented in the mathematics class in the following ways. In the process of teaching, teachers often adopt the inquiry teaching preferred by students, instead

of directly teaching concepts to train students through a large number of exercises (1). Such mathematics is bound to be boring. In my opinion, a better way is for the teacher to lead the students to explore together, let the students fully think, and guide the students to abstract mathematical concepts from the context. Doing so can also deepen the students' understanding. In the teaching process, logical reasoning, mathematical operations and other processes for students to do their own calculations (2). The teacher's demonstration is auxiliary learning, listening to understand does not mean that the real grasp of this knowledge, let the students independent computing can not only enhance the students' computing ability, but also in the process of their own computing found shortcomings, timely correction, fill the gaps. Before and after class, teachers should fully mobilize students' subjectivity (3) [9]. The effect of blindly instilling teaching may not be ideal. Students are required to prepare well before class, listen to the lecture with questions, ask more questions and think more. Review in time after class to see if any problems have not been solved. Pay attention to the inner cultivation of the core quality of mathematics, that is, the cultivation of emotional attitude and values (4). The teaching task of a class is over. What the teacher imparts in the process of lecturing is not only knowledge, but also the cultivation of students' emotional attitude. For example, there are many proofs of theorems in mathematics. The proofs of theorems are very rigorous. We can also introduce more history of mathematics before class to enrich the mathematics culture and improve the interest of mathematics. All these can cultivate students' exploring ability, cultivate students' rigorous mathematical logical thinking ability, and develop the habit of actively learning and thinking and participating in mathematical activities. Guide students to summarize and reflect (5). Summary and reflection is the way to make students make rapid progress, learn to summarize and reflection is also the reflection on the learning content, every class after class to guide students to summarize: this lesson I learned what to consolidate the knowledge. And reflection: this lesson I did not understand what place. Over time, students' ability of reflection and perception will be improved, and their mathematical literacy will also be improved [10]. The educational concept of core literacy has also been confirmed. Such as Norway's emphasis on core quality as the core of education reform, at all stages of quality orientation of teachers' pre-service education instead subject orientation of teaching way [11], this reform has achieved great success, the evaluation of students is very good, achievement has improved, also have a more profound understanding to mathematics, great changes have taken place in the teacher's role. Core literacy education is also being popularized in China. In a word, the implementation of course content should lay a solid foundation for students to enter the society in the future, adapt to the development of society and establish self-value [12]. In each class imperceptibly cultivate students' mathematical thinking and quality, really teach, educating people.

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