International Journal of Scientific Engineering and Science
Volume 8, Issue 12, pp. 89-94, 2025. ISSN (Online): 2456-7361

Teaching Exploration of Mathematical Modeling Literacy Under the Concept of "Three Religions"- Take "Understanding the Quadratic Equation of One Variable" as an Example

Jie Zheng, Qian Hao
College of Mathematical Sciences, Guizhou Normal University 550025

Abstract— *As one of the important contents of mathematics core literacy, mathematical modeling is of great significance for cultivating students' logical thinking, innovative consciousness and problem-solving ability. Taking "Understanding a Quadratic Equation" as an example, this paper explores how to cultivate students' mathematical modeling literacy through teaching thinking, teaching experience and teaching expression. This paper expounds how teachers can integrate the concept of "three teaching" into practical teaching through four basic processes of mathematical modeling: finding and asking questions, establishing and solving models, testing and perfecting models, and analyzing and solving problems, so as to improve students' mathematical modeling ability and promote their sustainable development.*

Keywords— *The educational concept of three religions; Mathematical modeling literacy; monadic quadratic equation*.

I. QUESTION RAISED

With the deepening of education reform, junior high school mathematics teaching is no longer limited to imparting knowledge, but also pays more attention to cultivating students' mathematical core literacy. As an important part of mathematics core literacy, mathematical modeling has become a hot topic of educational research at home and abroad for a long time. In particular, the newly promulgated Mathematics Curriculum Standard for Compulsory Education in 2022 emphasizes: "Let students know that mathematical modeling is the basic way to connect mathematics with reality, and initially perceive the basic process of mathematical modeling" [1], which once again highlights the importance and urgency of cultivating students' mathematical modeling literacy. Previous studies have shown that the cultivation of mathematical modeling ability is of great value to the cultivation of core literacy and innovative literacy of mathematics [2], which is not only the basic means to solve practical problems in applied mathematics, but also the driving force to promote the development of mathematics. [3] However, in the actual teaching process, how to effectively integrate the cultivation of mathematical modeling literacy into teaching is still a problem worthy of in-depth discussion. Under the traditional teaching mode, teachers and students have a certain fear of difficulties in mathematical modeling, a diverse and novel learning form [4]. Teachers often focus on imparting knowledge such as concepts, properties and solutions, while relatively ignoring the cultivation of students' mathematical modeling literacy. [5] For this teaching mode, although students can master basic knowledge, it is often difficult to effectively combine what they have learned with practical problems when facing practical problems, and they lack the ability to use mathematical knowledge to solve practical problems. The concept of "three teachings" guides students to "gain insight and realize truth" in the study of mathematical concepts, helps students accumulate some experience in mathematical activities in problem solving, and realizes some mathematical thoughts and philosophies in mathematical activities, which is the key to promote the formation of students' mathematical core literacy. Based on this, this paper takes "Understanding the Quadratic Equation of One Yuan" published by Beijing Normal University as an example, and takes the concept of "Three Teaching" as a breakthrough to study how to effectively cultivate students' mathematical modeling literacy in teaching. Through in-depth research and exploration on this issue, it provides new ideas and methods for current teaching and promotes the overall improvement of students' mathematical modeling literacy.

II. THEORETICAL BASIS AND INSTRUCTIONAL DESIGN FRAMEWORK

2.1 theoretical basis

2.1.1 "three religions" concept

As one of the important core values of the development of students' core literacy, the concept of "three religions" was first put forward by Professor Lu Chuanhan of Guizhou Normal University in 2014, that is, "teaching thinking, teaching experience and teaching expression". From the perspective of mathematics, teachers should be student-oriented, teach students to observe from a mathematical perspective, analyze with mathematical thinking, and express in mathematical language [7], so as to realize the fundamental task of moral education. Its main manifestations are as follows: first, the concept of "three religions" emphasizes teaching students to

About the author: 1. Zheng Jie (2001-), female, from Dafang, Guizhou, is studying for a master's degree in the School of Mathematical Sciences of Guizhou Normal University, mainly engaged in mathematical education research. Hao Qian (2000-), female, from Zunyi, Guizhou, is studying for a master's degree in the School of Mathematical Sciences of Guizhou Normal University, mainly engaged in mathematical education research.

International Journal of Scientific Engineering and Science
Volume 8, Issue 12, pp. 89-94, 2025. ISSN (Online): 2456-7361

think, and pays attention to the cultivation of mathematical abstraction and intuitive imagination core literacy. In the process of mathematics teaching, teachers need to make rational use of mathematical situations, promote students' active thinking, cultivate students' mathematical thinking and promote their emotional experience. Second, the concept of "three religions" emphasizes students' learning experience and pays attention to the cultivation of logical reasoning and the core literacy of mathematical operation. Teachers are required to help students feel and understand the things around them through guided learning practice activities, thus promoting students to accumulate experience in mathematics activities. Third, the concept of "three religions" emphasizes teaching students to express, and pays attention to the cultivation of mathematical modeling and data analysis core literacy. Through students' expression, teachers can understand students' thinking situation, and students can also gain learning experience according to their own expression. "Teaching thinking", "teaching experience" and "teaching expression" form a mutual foundation and interdependence. [8] Therefore, this paper will combine the "three religions" concept, take the development of students' mathematical modeling literacy as the goal-oriented, and explore how to carry out teaching design based on the "three religions" concept to promote the development of middle school students' mathematical modeling literacy.

2.1.2 Mathematical modeling theory

Mathematical modeling is an important means to solve practical problems by using mathematical tools. It requires students to abstract and simplify the practical problems first, then establish a mathematical model, get the results by solving the model, and finally feed the results back to the practical problems to solve the problems. According to the Mathematics Curriculum Standard for Ordinary Senior High Schools (2017 Edition), mathematical modeling is mainly manifested as: "finding and raising problems, establishing and solving models, testing and perfecting models, analyzing and solving problems" [9]. With the rapid development of information technology, cultivating students' application consciousness and ability has become an important aspect of mathematics teaching. Mathematics education should not only teach students mathematical knowledge, but also teach students to use what they have learned to solve practical problems. For this reason, this paper will combine the basic process of mathematical modeling to carry out teaching design to help students better understand and apply mathematical knowledge and improve their ability to solve practical problems.

2.2 Instructional design framework

To sum up, the concept of "three religions" helps students to improve their thinking breadth, understand mathematical thoughts and master mathematical symbol representation through "teaching thinking, teaching experience and teaching expression", and promotes the development of students' core literacy. In addition, the cultivation of students' mathematical modeling literacy largely determines students' problem-solving ability and interdisciplinary cooperation ability, which is of great significance for improving personal ability, enhancing comprehensive quality and promoting future development. Therefore, this paper combines the concept of "three religions" and the four basic processes of "finding and putting forward problems, establishing and solving models, testing and perfecting models, and analyzing and solving problems" in mathematical modeling to construct the instructional design framework of "understanding quadratic equations of one variable", as shown in Figure 1.

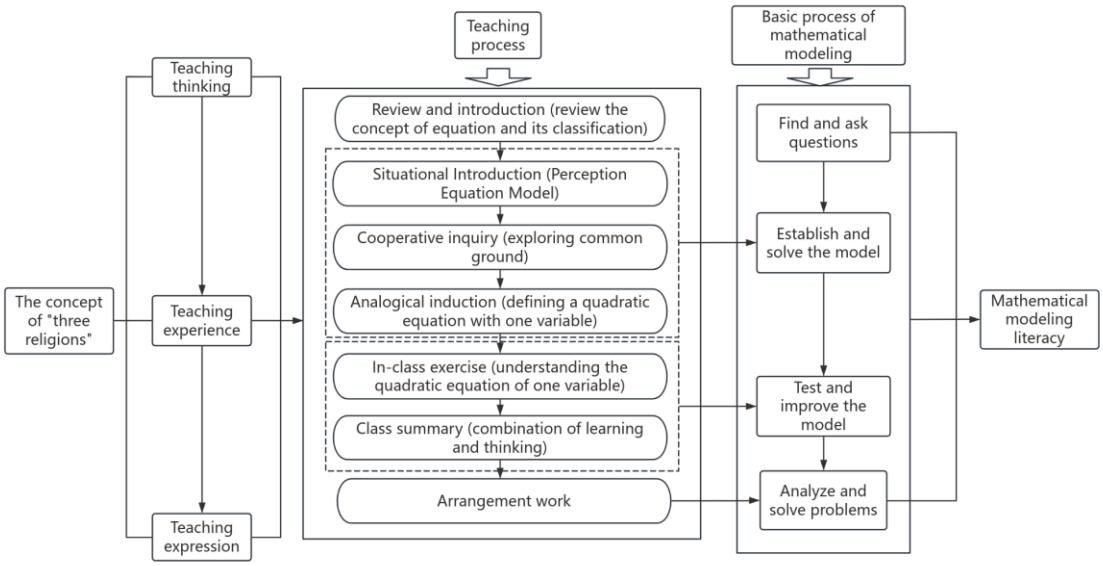

Figure 1 Instructional design framework that points to mathematical modeling literacy under the concept of "three religions"

International Journal of Scientific Engineering and Science
Volume 8, Issue 12, pp. 89-94, 2025. ISSN (Online): 2456-7361

III. "UNDERSTANDING THE QUADRATIC EQUATION OF ONE VARIABLE" TEACHING DESIGN

3.1 teaching material analysis and the Analysis of Learning Situation

3.1.1 teaching material analysis

"Understanding the quadratic equation of one variable" is selected from the first section of chapter 2 of the first volume of the ninth grade of junior high school mathematics published by Beijing Normal University. [10] First of all, the textbook guides students to list three equations according to their implied laws and quantitative relations through several common problems in life, such as laying carpets, some properties between several integers and falling ladders. Then, the textbook requires students to discuss the common characteristics of these three equations through "discussion", and guides students to sum up the characteristics of quadratic equations with one variable and their related concepts. Then, the definition of quadratic equation in one variable and its related concepts are consolidated by using two exercises of "in-class exercise". Finally, the two after-school exercises of "knowledge and skills" and "problem solving" are in the form of application questions and fill-in-the-blank questions, which further consolidate and deepen the definition of quadratic equation of one variable and its related concepts, and improve students' ability to solve practical problems by using the definition of quadratic equation of one variable and its related concepts.

The teaching design process of mathematical concepts is generally divided into five stages: concept introduction, concept construction, concept description, concept application and concept association. [11] Therefore, the arrangement order of mathematics textbooks published by Beijing Normal University for this class conforms to the basic process of mathematics concept teaching. In addition, after learning the definition of quadratic equation with one variable and its related concepts, students can not only recall the concepts of quadratic equation with one variable and other equations again, but also lay a foundation for the future research and study of quadratic function and other related knowledge.

3.1.2 Analysis of learning situation

The teaching object of "Understanding the Quadratic Equation of One Yuan" is the ninth grade students. The students at this stage are weak in information processing, but have a strong thirst for knowledge. When they encounter new problems, they will naturally have the desire to explore further. Students have studied equations in the seventh and eighth grades, but the maximum number of unknown equations they have studied is limited to one time. Therefore, the teaching of this class can make full use of students' existing knowledge and abstract generalization ability and combine teaching materials with examples to teach. Three examples given in the textbook, such as carpet laying, some properties between integers and ladder falling, are used to guide students to establish equations and explore higher-level equation types. However, it is difficult for students to abstract a quadratic equation with one variable from specific problems, so teachers should be persuasive in a series of questions and gradually guide students to explore conclusions.

3.2 Teaching objectives

1. By transforming specific mathematical problems into a quadratic equation model of one variable, we can understand and master the formation process of quadratic equation of one variable and its related concepts. Be able to accurately describe the quantitative relationship and changing law of real problems by using the quadratic equation of one variable, form appropriate operational ideas to solve problems, and form abstract ability and model concept.

2. In different situations, take the initiative to find and put forward problems from the perspective of mathematics, flexibly use mathematical knowledge to comprehensively analyze and seek ways to solve problems. Use logical reasoning and other means to solve problems and strengthen the awareness of model construction and application.

3. Pay attention to the mathematical information contained in social life, and in the practice of solving problems, cultivate hard work, independent thinking, teamwork and learn to appreciate the excellent qualities of others.

3.3 Teaching emphasis and difficulty

3.3.1 Teaching Focus

Establish a quadratic equation model of one variable from specific situations and abstract the concept of quadratic equation of one variable; Understand the unary quadratic equation and its related concepts.

3.3.2 Teaching difficulties

Abstract a quadratic equation with one variable from a specific problem.

3.4 Teaching process

According to the above analysis, based on the concept of "three religions" and combined with the basic process of mathematical modeling, the content of the section "Understanding the quadratic equation of one variable" is designed for teaching. Generally speaking, the concept of "three religions" does not exist independently in a certain link, but coexists in every link, but different links have certain emphasis.

3.4.1 Review and lead-in-finding and asking questions

[Teaching Contents and Teachers' Activities]

The teacher led the students to review the knowledge they had learned before and asked the following questions:

Question 1: Which of the following equations are equations?

（1） $2+6=8$ （2） $2x+3$ （3） $5x+6=22$

（4） $x+3y=8$ （5） $x-5<18$ （6） $\frac{4}{x}-2=9$

Question 2: What is an equation? What equations have we learned?

Question 3: What is a one-dimensional linear equation?

Question 4: Think about what is a quadratic equation with one variable?

[Student behavior] Answer questions 1, 2 and 3 together under the guidance of the teacher; Think alone about question 4.

[Design Intention] Introducing new lessons by reviewing old knowledge can not only help students consolidate old knowledge, but also enable students to understand new knowledge from shallow to deep, from simple to complex, step

International Journal of Scientific Engineering and Science
Volume 8, Issue 12, pp. 89-94, 2025. ISSN (Online): 2456-7361

by step. At the same time, the use of question 4 in the minds of students foreshadows, from the "concept of a linear equation" to trigger students to think about the "concept of a quadratic equation", so as to better introduce the topic. The setting from question 1 to question 4 is to realize the first step of the basic process of mathematical modeling from the perspective of "teaching thinking" and help students find and ask questions in the problem chain.

3.4.2 Situation import-establishing a model

[Teaching Contents and Teachers' Activities]

Situation 1 "The rectangular floor of a kindergarten classroom is 8m in length and 5m in width. Now we are going to lay a carpet with an area of 18m2 in the middle of the floor, and the width of the strip-shaped areas without carpets around it is the same. Is there any good way to know the width of the strip-shaped areas?"

Teachers use PPT to show the above mathematical situations and ask questions:

Question 5: If the required width is m, what is the length of the rectangular pattern in the center of the carpet? What is the width? What kind of equations can you list according to the meaning of the question?

Guide the students to list the equations according to the meaning of the questions and write the equations obtained by the students on the blackboard: $(8-2x)(5-2x)=18$.

[Student Behavior] Thinking about Question 5 alone under the guidance of the teacher.

[Design Intention] According to the concrete life situation, students are guided to think about the methods to solve problems, and their problem-solving ability is improved, so as to stimulate their interest in learning and urge them to attach importance to the connection between mathematics and life. Guide students to list equations, so that students can initially understand the model idea.

[Teaching Contents and Teachers' Activities]

Scenario 2 calculates the following equation:

$10^2+11^2+12^2=?$, $13^2+14^2=?$.

The teacher uses PPT to show the above mathematical knowledge situation and ask questions:

Question 6: By observing these two formulas, can you find the quantitative relationship between them?

Question 7: Can you find five other consecutive integers that make the sum of squares of the first three numbers equal to the sum of squares of the last two numbers?

Question 8: What is the equivalence relation contained in this question?

Question 9: If the first number of five consecutive integers is 0, what kind of equation can you list?

Give guidance and help to students' analysis, and write the equations listed by students:

$x^2+(x+1)^2+(x+2)^2=(x+3)^2+(x+4)^2$.

[Student behavior] Read the questions to find the equivalent relationship, and think about questions 6, 7 and 8 alone; List the equations according to the teacher's prompt and raise your hand to answer question 9.

[Design Intention] Starting with practical problems, let students realize the value of mathematics and feel the fun of mathematics. Set up question situations to stimulate students' interest in learning. Guide students to think about equivalence relation and list equations, improve students' information processing ability and further understand the model thought.

[Teaching Contents and Teachers' Activities]

Situation 3 "A ladder with a length of 10m leans against the wall, and the vertical distance between the top of the ladder and the ground is 8m. If the top of the ladder slides 1m, how many meters does the bottom of the ladder slide? "

Teachers use PPT to show the above mathematical situations and ask questions:

Question 10: According to Pythagorean theorem, how many meters is the bottom of the ladder from the corner before sliding?

Question 11: If the bottom of the ladder slides m, what kind of equation can you list?

Give guidance and help to students' analysis, and perform the equations listed by students: $7^2+(x+6)^2=10^2$.

[Student behavior] Answer question 10 together; Read the questions to find the equivalent relationship, think about question 11 according to the teacher's prompt, and list the equations.

[Design Intention] Setting problem situations can arouse students' curiosity and stimulate their thirst for knowledge. At the same time, in the process of guiding students to establish models and list equations, we can make students realize that equations are important models to describe some mathematical problems from the perspectives of "teaching thinking" and "teaching expression", help students to establish a quadratic equation model with one variable, and achieve the step of "establishing models" in the process of mathematical modeling, thus breaking through the teaching difficulties.

3.4.3 Cooperative inquiry-solving model

[Teaching Contents and Teachers' Activities]

Three equations were observed:

(1) $(8-2x)(5-2x)=18$

(2) $x^2+(x+1)^2+(x+2)^2=(x+3)^2+(x+4)^2$

(3) $7^2+(x+6)^2=10^2$

Question 12: What's the difference between them and linear equations? What do they have in common?

According to the three linear quadratic equations listed by students, the teacher guides students to discuss in groups. After simplifying the equations, the characteristics of them are explored in combination with the characteristics of linear quadratic equations. Three equations after simplification of blackboard writing:

① $2x^2-13x+11=0$

② $x^2-8x-20=0$

③ $x^2+12x-15=0$

[Student Behavior] Discuss in groups and simplify an equation respectively. After observation, discussion and arrangement, the common points are summarized as follows:

International Journal of Scientific Engineering and Science
Volume 8, Issue 12, pp. 89-94, 2025. ISSN (Online): 2456-7361

① the whole equation; (2) contains only one unknown number; ③ The highest number of unknowns is 2.

[Design Intention] Let students discuss in groups, which is the embodiment of attaching importance to students' learning experience and guiding students to experience the process of concept formation. At the same time, it is also to enhance students' sense of cooperation, strengthen students' cooperative communication ability and language expression ability, and embody the concepts of "teaching experience" and "teaching expression". In addition, in the process of exploring the common ground of the three equations, let students experience the thought and knowledge of analogy.

3.4.4 Analogy induction-solving the model

[Teaching Contents and Teachers' Activities]

The teacher led the students to sum up: "An integral equation with only one unknown number, and all of them can be changed into the form of $ax^2+bx+c=0$ (a, b, c are constants, and a is not equal to 0). Such an equation is called a quadratic equation with one variable."

We call $ax^2+bx+c=0$ (a, b, c are constants, and a is not equal to 0) the general form of a quadratic equation, in which, ax^2, bx, c is called quadratic term, linear term and constant term respectively, a、b and is called quadratic term coefficient and linear term coefficient respectively.

Question 13: $ax^2+bx+c=0$ (a, b, c are constants, and a is not equal to 0), why $a\neq 0$? Can b、c be 0?

Organize students to raise their hands and answer after thinking independently, and find other students to supplement the shortcomings.

[Student behavior] Under the guidance of the teacher, the concept of a quadratic equation is summarized; Think independently and raise your hand to answer question 13.

[Design Intention] After observation, discussion and arrangement, students found the common characteristics of the three equations, and summarized the concept of quadratic equation with one variable, so as to achieve the teaching focus, gain process experience and achieve the purpose of solving the model. Through question 13, it is the embodiment of students' subjectivity to let students think independently and raise their hands to answer and encourage students to actively participate in teaching. On the one hand, the step of "solving the model" in the process of mathematical modeling is realized through "teaching thinking" and "teaching experience". On the other hand, prepare for testing and perfecting the model.

3.4.5 In-class exercise-test model

[Teaching Contents and Teachers' Activities]

Let me argue.

1. Among the following options, the one-variable quadratic equation of is ( ).

A. $x^2+\frac{1}{x^2}=0$ B. $3x^2-5xy+y^2=0$

C. $(x-1)(x-2)=0$ D. $ax^2+bx+c=0$

2. Judge whether the following equation is a quadratic equation?

（1） $x^2+x=36$ （2） $(\sqrt{x})^2-2\sqrt{x}-6=0$

Let me fill it out (see table 1)

Let me fill in table 1

equation	General form	quadratic term ratio	Coefficient of linear term	constant term
$x^2+3x-2=0$				
$(3x+2)^2=4$				
$4x^2=5$				
$2x^2=0$				

The teacher shows the above classroom exercises and asks the student representatives to explain them. Help students understand the quadratic equation of one variable and its related concepts.

[Student Behavior] 1. Let me argue: According to the concept, analyze each option and dictate the reasons. 2. Let me fill in: think about how to generalize and how to determine the terms and coefficients. According to the knowledge learned, complete the classroom exercises, think independently and then go to the blackboard to perform.

[Design Intention] Students can further consolidate the general form of quadratic equation of one variable and its related concepts through these three classroom exercises, and guide students to experience the application process of quadratic equation of one variable from the perspective of "teaching thinking" and "teaching experience". At the same time, starting from "teaching expression", we should teach students to express in mathematical language, deepen the transfer and application of the concept of quadratic equation with one variable, and achieve the purpose of "testing the model". In addition, "I'll fill it in" further explains why $ax^2+bx+c=0$ (a, b, c are constants, and a is not equal to 0) in the general form of quadratic equation with one variable.

3.4.6 Class Summary-Improve the model

[Teaching Contents and Teachers' Activities]

Let me talk about it.

(1) What did you gain from this class?

(2) Who is your favorite classmate in this class? Tell me one or two of his bright spots.

Teachers use PPT to show the above questions; Let the students discuss and communicate with their deskmates, and then ask the student representatives to make a concluding speech. Integrate and refine students' summaries, and summarize them from knowledge, ideas and methods.

[Student behavior]

Self-reflection, induction and summary, raise your hand to share your learning experience.

[Design Intention] Teach students to express themselves by sharing their experiences, and promote the improvement of students' expression ability. In addition, it cultivates students'

ability to learn to reflect in learning and learn again in reflection, creates a growing environment of combining learning with thinking (teaching thinking), and realizes the purpose of "perfecting the model". At the same time, classroom teaching is the main channel for moral education, which allows students to evaluate each other and cultivate students' excellent quality of "appreciating others".

3.4.7 Assignment-Analysis and Solution of Problems

[Teaching Contents and Teachers' Activities]

At the end of the course, the teacher assigns homework to the students according to the level. And pay attention to the completion of students, feedback in time the next day, and pay attention to students' inquiry ideas.

Basic exercise: P32/ exercises 1 and 2 in class.

Promotion Exercise: Textbook P32/ Exercise 2.1 Questions 1, 2 and 3

Choose the problem: combine the three equations listed in this lesson:

(1) $(8-2x)(5-2x)=18$

(2) $x^2+(x+1)^2+(x+2)^2=(x+3)^2+(x+4)^2$

(3) $7^2+(x+6)^2=10^2$

Try to solve any equation and briefly explain the theoretical basis for solving it.

[Student Behavior] Finish the homework assigned by the teacher independently after class.

[Design Intention] Basic practice is to consolidate students' mathematical knowledge; Improving practice is to improve students' math skills. Hierarchical design is to meet the needs of different students, teach students to analyze and solve problems by using the model of quadratic equation of one variable from the perspective of "teaching thinking", deepen their understanding of the concept of quadratic equation of one variable, and let students experience the application process (teaching experience) of the concept of quadratic equation of one variable, thus promoting the development of students' mathematical modeling literacy. Choosing exercises enhances the openness of homework, respects the development of students' personality, and lays a foundation for learning to solve quadratic equations in one variable.

IV. Conclusion

In the process of deepening the curriculum reform in an all-round way, we have always advocated breaking the "score-only" result evaluation model, taking moral education as the fundamental task of education, and enhancing the guidance and operability of the curriculum. As educators, it is necessary for us to think deeply about how to cultivate students' core literacy in teaching and constantly reflect on our teaching methods and effects. According to the four main manifestations of mathematical modeling (finding and putting forward problems, establishing and solving models, checking and perfecting models, and analyzing and solving problems), this paper puts forward a teaching design framework for cultivating mathematical modeling literacy based on the concept of "three teachings", and applies it to the teaching design of "Understanding quadratic equations with one variable", which provides reference for effectively promoting students to develop mathematical modeling literacy in the teaching process. The concept of "teaching thinking, teaching experience and teaching expression" requires teachers to design more problem situations and guide students to think actively. Taking concrete examples as the carrier is very helpful to improve students' mathematical modeling literacy. At the same time, in order to cultivate students' mathematical modeling literacy imperceptibly in mathematics teaching activities, teachers need to provide more student activities for students to learn through experience. Finally, in the process of mathematical modeling, effective communication and expression are also very important. Teachers need to encourage students to express their ideas in mathematical language and charts, thus contributing to the all-round development of students and the improvement of mathematical modeling literacy.

References

[1] People's Republic of China (PRC) Ministry of Education. Compulsory Education Mathematics Curriculum Standards (2022 Edition) [M]. Beijing: Beijing Normal University, 2022:10+14-15. (In Chinese)

[2] Zhongjin Guo, Kan Fu, Dan Sun. An Exploration of Mathematical Modeling Teaching in the Context of Core Competencies [J]. Education Teaching Forum, 2023, (15): 145-148. (In Chinese)

[3] Zuyang Li, Chun Liu, Zhi Jin, et al. Test and Evaluation of Middle School Students' Mathematical Modeling Competence Based on IRT Theory [J]. Journal of Huzhou Teachers College, 2022, 44(08): 99-106. (In Chinese)

[4] Shuangqi Zuo. Several Approaches to Form and Develop Middle School Students' Core Competence in Mathematical Modeling [J]. Mathematics Bulletin, 2022, 61(11): 18-19+23. (In Chinese)

[5] He Li, Weiming Zhang. A Survey on the Development of Mathematical Modeling Competence Among Junior High School Students Based on Quality Testing [J]. Journal of Mathematics Education, 2017, 26(01): 19-21+87. (In Chinese)

[6] Yunming Song, Hong Yan, Chuanhan Lv. How to Guide Primary School Students to "Gain Insight and Understand Principles" in Learning Mathematical Concepts: An Analysis Based on Excellent Teachers' Lessons [J]. Journal of Xingyi Ethnic Normal University, 2021, (03): 67-72. (In Chinese)

[7] Haijun Tang, Chuanhan Lv. Why Mathematics Teaching Needs to "Teach Thinking, Teach Experience, Teach Expression": A Further Analysis of the "Three Teachings" Instructional Concept and Practice [J]. Primary and Secondary School Teacher Training, 2019, (10): 51-55. (In Chinese)

[8] Hong Yan, Taijie You, Chuanhan Lv. Understanding and Reflection on "Teaching Thinking, Teaching Experience, Teaching Expression" in Mathematics Teaching [J]. Journal of Mathematics Education, 2017, 26(05): 26-30. (In Chinese)

[9] Ministry of Education of the People's Republic of China. General High School Mathematics Curriculum Standards (2017 Edition) [M]. Beijing: Beijing Normal University, 2022: 6. (In Chinese)

[10] Fu Ma, Bingxing Shi, Fei Zhang, et al. Compulsory Education Textbook: Mathematics (Grade 9, Volume 1) [M]. Beijing: Beijing Normal University Press, 2014: 31-33. (In Chinese)

[11] Yunming Song. Core Competence-Oriented Primary School Mathematics Concept Teaching: An Analysis Based on Excellent Teachers' Lessons [J]. Curriculum for Basic Education, 2020, (20): 41-45. (In Chinese)