

## Research on the Construction of Middle School Mathematics Classroom Based on Situational Teaching Method

Qiyuan Liang

Liaoning Normal University, Dalian, 116029 Liaoning, China

13840535467@163.com

**Keywords:** Situational teaching method, Middle school mathematics, Classroom construction

**Abstract:** The situational teaching mode is a teaching mode that guides students to engage in independent exploratory learning using cases or scenarios as carriers. With the implementation of the new curriculum reform, situational teaching method has gradually been applied to middle school mathematics teaching. Situational teaching is to create good learning scenarios for students, guide them to discover problems from the scenarios, and explore and research solutions to these problems. The situational teaching method is not only in line with the characteristics of middle school mathematics, but also in line with the level of students' thinking development. The situational teaching method is also an important strategy to improve the effectiveness of middle school mathematics teaching. The situational teaching method can be integrated based on the current situation of middle school mathematics teaching, so that middle school mathematics can be adjusted according to actual content in teaching, in order to improve the effectiveness of mathematics teaching. Teachers should actively explore new teaching modes for students in the teaching process, stimulate their learning interest, thinking ability, etc., make the classroom full of vitality, and effectively improve students' learning efficiency. This article analyzes the application of situational teaching method in middle school mathematics classrooms, and uses strategies such as designing different scenarios, setting game scenarios, using life scenarios, and asking questions to change course teaching, so that students can understand mathematical knowledge and improve the efficiency of mathematics classroom teaching.

### 1. Introduction

The situational teaching method is different from the previous teaching style of teachers. It refers to a type of teaching method in which teachers set the scene as the center in the teaching process, allowing students to improve their abilities. The application of situational teaching method in middle school mathematics teaching can create a good learning atmosphere for students, guide them well, and enable them to further explore problems and find ways to solve them[1].

With the continuous deepening of reform, interactive teaching has emerged. It not only improves the quality of teaching, but also enlivens the atmosphere, making students enjoy every lesson both physically and mentally. The traditional teaching mode suppresses the development of students' personality traits and is not conducive to the promotion of students' personalities. With the help of situational teaching methods, teachers can enhance students' self-directed learning ability in the classroom, making their thinking more clear. By practicing the rules of situational teaching methods, teachers can help students achieve self-directed learning, encourage students to embrace learning with a complete mindset, and improve classroom teaching efficiency[2]. Under the new teaching form, the teaching of mathematics subjects is gradually being valued by Chinese teachers. Teachers reflect and research on the original teaching foundation, and improve their teaching mode. In traditional mathematics classrooms, teachers tend to underestimate students' listening state and focus more on the explanation of classroom content, resulting in a very rigid teaching atmosphere. Students cannot efficiently attend classes in the classroom and cannot create a rich and active teaching classroom. The creation of scenarios can help students increase their interest in mathematics learning, enhance the fun of mathematics teaching itself, stimulate students'

enthusiasm for mathematics learning, and effectively improve the quality of middle school mathematics teaching[3]. Teachers should use situational teaching methods to enter the teaching process, allowing students to conduct research on mathematical problems. This can greatly improve students' autonomous learning ability, cultivate their willpower, and enable them to truly experience the joy of learning mathematics, thus achieving the teaching plan set by the teacher. Situational teaching promotes communication and emotional exchange between teachers and students, and also deepens students' understanding of classroom knowledge. It must be said that the implementation of situational teaching is a perfect embodiment of educational achievements in the new era[4].

The current learning situation of students is not very good, mainly manifested in the single teaching content and inadequate teaching methods of teachers. The teaching strategies proposed by teachers do not meet the current comprehensive development teaching goals. How to find new teaching strategies and optimize the current curriculum teaching environment in the teaching process is a key issue that teachers should explore. Students in the middle school stage are in a period of strong curiosity and adolescence, so teachers should seize this characteristic of students to plan classroom teaching sessions. The use of situational teaching method by teachers can create a relaxed and happy teaching environment for students. Through this method, teachers can improve students' ability to think and use their brains, cultivate students' hands-on and brain skills, and communicate and cooperate with them in the process of learning mathematical knowledge[5].

## **2. The Current Situation of Middle School Mathematics Teaching and the Significance of Situational Teaching Method**

### **2.1 The Current Situation of Middle School Mathematics Teaching**

The new curriculum has been promoted in China for several years, but in actual teaching activities, many school teachers still cannot deeply understand the concept of the new curriculum. Although in the classroom, traditional teaching methods have gradually changed into interactive and communicative teaching models, which have improved students' initiative in learning and also increased the interaction between students and teachers, as well as between students and students. Although teachers have changed their teaching methods, increased students' enthusiasm for mathematics learning, and applied new methods such as multimedia to mathematics teaching during middle school mathematics teaching, the existence of some problems still has an impact on the reform of middle school mathematics teaching[6].

In the vast majority of schools in China, new curriculum reforms have been implemented, but in some schools, the new curriculum reform is seen as a fixed term for the new teaching model, and there is no correct understanding of it. In the teaching process, many teachers blindly use multimedia resources to cope with the new curriculum teaching, forming the current situation of using multimedia for the sake of multimedia. After the new curriculum reform, many schools have adopted a lot of new teaching models, mostly using high-tech teaching. However, when teachers teach, they pay too much attention to the display of media materials, do not recognize the importance of interaction, and have less communication with students, which also leads to students being unable to keep up with the pace of teachers when listening to classes, low interest in new courses, and affects the improvement of teaching efficiency. We have changed the teaching methods of the curriculum and the traditional teaching and learning models, but in actual teaching, we still have not changed the traditional teaching concepts. When evaluating students, teachers still overemphasize their grades and do not pay enough attention to cultivating students' exploratory abilities, which directly leads to difficulty in achieving the teaching objectives of the new curriculum reform[7].

### **2.2 The Significance of Situational Teaching Method**

The situational teaching method can enhance students' interest in mathematics learning, as mathematical knowledge is closely related to our daily lives. By using the situational teaching method, knowledge from daily life can be set as the context of the mathematics classroom, in order

to change students' views on mathematics and make them closely connected with daily life when learning mathematics. Through the application of situational teaching methods, students will have a deeper understanding of the knowledge they have learned. Meanwhile, compared to other course teaching methods, the content of situational teaching method is relatively novel, and its actual operation mode is very simple.

In the teaching process, teachers need to focus on the creation of scenarios, based on good scenario creation, and use intuitive teaching methods to help students activate their thinking in the classroom and complete timely answers to various questions. The situational teaching method can help students understand concepts in mathematics, as the learning and understanding of concepts is a prerequisite in the process of mathematics learning, which can enable students to better learn more complex formulas and theorems in mathematics. When students encounter some cognitive conflicts, teachers should continue to combine situational teaching plans to provide students with certain guidance, and use situational teaching methods to stimulate students' interest in learning, so that students can have a profound understanding of the content they have learned. By using situational teaching methods, students can observe and compare things in different scenarios, and exercise their logical abilities on the basis of mastering basic concepts[8].

### **3. The Application of Situational Teaching Method in Middle School Mathematics**

#### **3.1 Emphasize Diverse Teaching Scenarios and Create Life Scenarios**

In the traditional curriculum teaching process, the classroom teaching efficiency of teachers is generally not very high, mainly because teachers regard themselves as the center of the classroom during teaching, and their organized classroom teaching mode is difficult to start from the actual learning of students[9]. For example, when learning triangles, teachers can ask students the following question: Given that a school is planning to build a triangular lawn with three sides of 3, 4, and 5, what is the area of this triangle? After the question is raised, students' learning thinking will be triggered by the teacher. Subsequently, teachers can divide students into several study groups and require them to complete their understanding of the knowledge learned during group discussions, thereby strengthening their complementary cooperation. Finally, by combining everyday objects with mathematical knowledge, such as triangles and circles, students can display the objects of triangles and circles in class to make them aware of the learning content in the classroom.

Life scenarios are one of the most fundamental scenarios in situational teaching methods, which can effectively attract students and integrate them into classroom learning. Therefore, in situational teaching methods, teachers should actively use life scenarios to create scenarios[10]. In the application process of situational teaching methods, teachers should introduce practical examples into the classroom, construct life teaching scenarios suitable for students' learning, and through the creation of life scenarios, help students understand the knowledge learned in the process of mathematical knowledge perception. For example, when teaching the course "Axisymmetric", teachers can explain each knowledge point in combination with the axisymmetric figures that often appear in life. Then the teacher can ask students to analyze some axisymmetric figures that they often encounter in life, sort out and summarize the knowledge points of these axisymmetric figures, and analyze them in combination with specific examples, so that students can grasp the curriculum knowledge more firmly. Before conducting situational teaching in mathematics, the teacher should conduct a learner analysis (as shown in Figure 1). Learner analysis aims to identify the background, learning characteristics, and prepared knowledge, skills, and attitudes of learners, in order to understand their learning readiness and style, and provide a basis for learning task analysis and teaching strategy development.

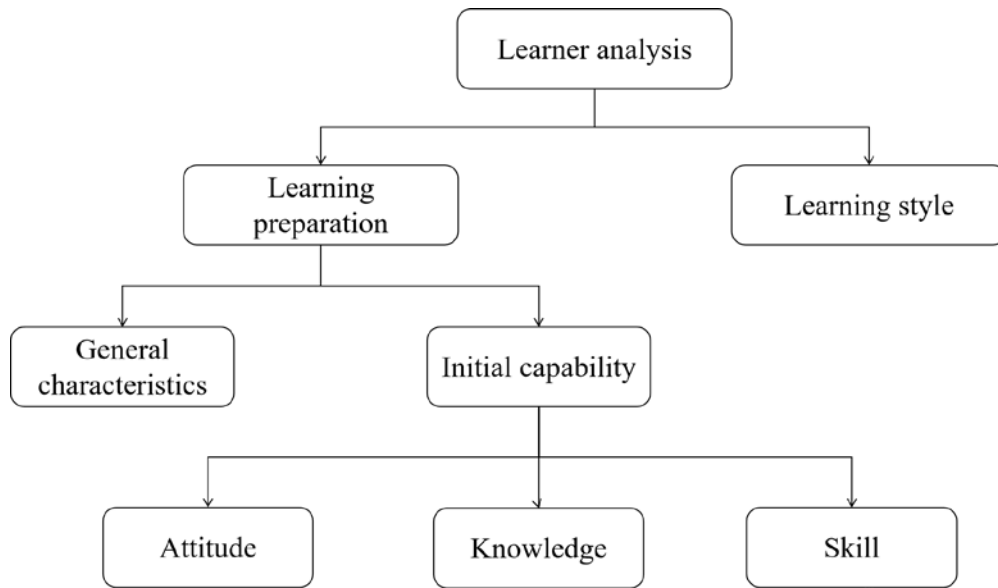


Fig.1 Learner Analysis

### 3.2 Reasonably Set Game Scenarios

In the teaching process, if teachers are limited to using chalk for traditional blackboard teaching, then this teaching mode is also difficult to fully realize its practical significance, and students cannot stimulate their self-learning enthusiasm in the classroom. Although middle school students are relatively mature compared to elementary school students, games are still their favorite. In the traditional middle school mathematics teaching process, teachers rarely arrange game sessions due to the consideration of classroom time. The teaching content taught by teachers is very dull and boring, resulting in students being unable to interest themselves during the learning process, and thus unable to effectively improve their mathematics grades. Teachers want students to experience the joy of learning in scenarios, they need to use the situational methods of games to create scenarios, so that students can learn in games and experience the joy of learning. According to the current situation of classroom organization, teachers should create some game teaching scenarios during teaching, using the game mode that students enjoy listening to music to help them understand the knowledge they have learned, improve their learning ability, and let students feel the joy of learning knowledge in a pleasant learning atmosphere. Figure 2 is a mathematics scenario teaching classroom that integrates game elements.



Fig.2 Mathematical Situational Teaching Classroom Integrating Game Elements

#### 4. Conclusions

In middle school teaching, mathematics teaching is very important, but mathematics teaching itself is a gradual process and cannot be achieved overnight. It is also a subject with strong logical thinking and an important foundation for science teaching. Situational teaching is a relatively interesting teaching method that can enhance students' interest in learning, cultivate their self-directed learning ability, and allow them to experience the joy of exploring problems during discussions. This allows teachers to choose the correct teaching form and improve their teaching quality. Combining the application of situational teaching method, teachers should follow a step-by-step teaching process in classroom teaching. In the process of creating scenarios in situational teaching, on the one hand, it is necessary to combine the characteristics of logical thinking, abstract thinking, and mathematics disciplines of middle school students to make them complement each other. On the other hand, it is necessary to consider the mathematical learning needs of students at different levels in the class. Therefore, the setting of situational problems needs to highlight hierarchy and improve the participation and activity of the entire class. Teachers should fully respect students' subjectivity in teaching, create scenarios for students based on their mastery of basic knowledge, physical and mental characteristics, emotional attitudes, etc., stimulate students' interest in learning, guide students to actively participate in classroom learning, and effectively improve their learning level. In situational teaching, it is also necessary to increase the attention of teachers, not just for teaching, but for the purpose of students' autonomous learning, in order to achieve the ultimate goal of new curriculum teaching.

#### References

- [1] Wang Xin. On the application strategy of situational teaching method in junior high school mathematics classroom [J]. Student Computer, 2021, 000(005):P.1-1.
- [2] Chen Qingchao. The use of situational teaching method to improve the quality of junior high school mathematics classroom teaching practice [J]. Chinese Science and Technology Journal Database (full-text version) Education Science, 2021(5):2.
- [3] Zhang Dawu. The application of mathematics situational teaching method in middle school mathematics classroom teaching [J]. New Curriculum (Middle School Edition), 2018, 000(005):60.
- [4] Xia Lingru. Application of Situational Teaching Method in Junior High School Mathematics Classroom [J]. Essays Hundred Schools of Chinese Studies Education, 2018, 000(011):259.
- [5] Shen Baojian. The effective application of situational teaching method in junior high school mathematics classroom [J]. Mathematics World (third and fourth grade edition of primary school), 2018, 000(003):37.
- [6] Wei Xianmei. The application of situational teaching method in junior high school mathematics teaching [J]. Tomorrow, 2018(29):1.
- [7] Zhao Dan. Using situational teaching method to improve the efficiency of junior high school mathematics teaching [J]. Science Consulting, 2020, 000(040):229.
- [8] Wei Yi. Application of Situational Teaching Method in Junior High School Mathematics Classroom [J]. Navigation of Arts and Sciences, 2020(14):2.
- [9] Hong Li. Inquiry into the situational teaching method of junior high school mathematics [J]. Encyclopedia Forum Electronic Magazine, 2020, 000(003):224-225.
- [10] Liu Junyan. Based on the improvement of teaching quality of junior high school mathematics situational teaching method [J]. Chinese Science and Technology Journal Database (full-text version) Education Science, 2021(4):1.