

# The application of mind mapping in primary school mathematics review lesson

---Take Qingdao edition (five-four-education-system) mathematics grade three text book volume one for an example

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**Abstract**—As the country promotes the integrated development of information technology and education and teaching, popularizing informationized teaching has become a normal state. As a kind of educational technology, mathematical mind mapping is a tool to visually express the essential connection between mathematical knowledge points by drawing. Using this kind of learning tool can help students clarify the context of mathematical knowledge and improve the review efficiency. The main problems existing in the elementary school mathematics recitation are analyzed in this paper. Taking elementary school under five-four-education-system mathematics grade three top volume of Qingdao version as an example, this paper further explores the application of mind mapping in primary school math review lessons, and reflects on the research practice. It is expected that mind mapping can be more widely and efficiently applied in primary school math review lessons.

**Key words**—primary school mathematics review lesson mind mapping

## I. INTRODUCTION

Primary school mathematics review class is a kind of mathematics class type that summarizes and sorts out the knowledge learned at a certain stage, makes it orderly and systematic, and further consolidates and deepens the basic knowledge, and

improves skills and develops the ability to solve problems through checking and filling gaps. But in the actual primary school math review lesson, there are still some problems.

## II. THE MAIN PROBLEMS EXISTING IN PRIMARY SCHOOL MATHEMATICS REVIEW LESSON

### 1) Review lessons become a "new lecture"

Mathematical knowledge has a strong system, but in the actual teaching, teachers are to teach knowledge points one by one, so knowledge is relatively scattered.

Therefore, in the review, it is necessary to systematize knowledge and form a knowledge network so that students can better understand and master systematic mathematical knowledge. However, students often have various problems when reviewing. For example, the knowledge points are not firmly grasped, and learning difficult points are not clear, so that the teacher often reviews the lesson into a new teaching

### 2) Review lessons become "practice classes"

Doing exercises is an effective way for students to apply the knowledge they have reviewed in the review class. However, in view of the various problems that occur when students are doing exercises, teachers tend to adopt the tactics of sea of questions in the review class. Students keep doing exercises while teachers keep talking, so the review class is easy to

turn into practice class. The way of review class is dull and monotonous, and students' emotions are easy to fluctuate. Some teachers regard it as the main goal of teaching to make every student solve every review question and improve the students' problem-solving ability. They adopt the teaching method of practice proofreading. This kind of practice in the review class lacks pertinence and systematicness, hierarchy and comprehensiveness.

### 3) Students' passive learning

In order to ensure the teaching progress, the knowledge combing process that should be completed by students is often carried out by teachers on behalf of students, who lack time for self-generalization and sorting and opportunities for cooperative exploration. If this goes on for a long time, students will rely on teachers, which is not conducive to the cultivation of autonomous learning ability and other comprehensive abilities. At the same time, the classroom does not create a space for students to display and communicate, so it is difficult for students to play their main role in learning.

## III. MIND MAPPING

In view of the main problems existing in the current primary school mathematics review lesson, the author introduces the mathematics mind mapping into the primary school mathematics review lesson to apply it, Taking Qingdao edition (five-four-education-system) mathematics grade three text book volume one for an example.

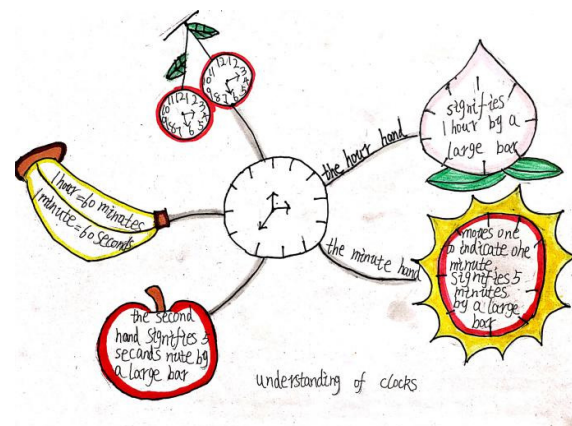
### 1) Mind mapping combs knowledge modules

One of the teaching functions of primary school mathematics review lesson is to promote the systematization of knowledge. Teachers should guide students to classify and integrate the learned knowledge according to certain rules on the basis of the key points, difficult points and weak points of the review lessons, so as to make clear their context, communicate their vertical and horizontal connections,

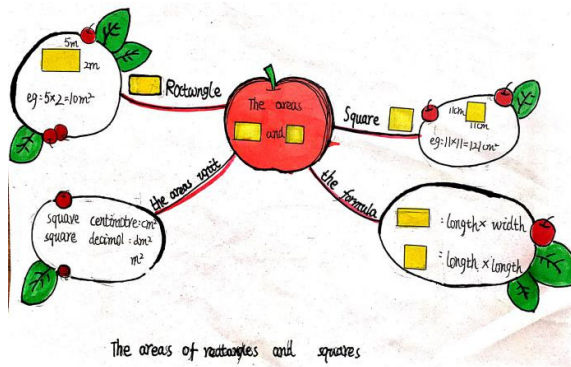
and grasp the knowledge structure on the whole. In this regard, mind mapping should be used to achieve this goal, to help pupils form a clear knowledge network in their minds, which can connect scattered and isolated knowledge with the help of this mind mapping, and finally form a sound knowledge structure.

For example: Qingdao edition (five-four-education-system) mathematics grade three textbook volume one is divided into ten units, which is two or three digits divided by single digits (I), position and transformation, hybrid operation, the understanding of hour minute and second, the circumference of the graphs, two or three digits divided by single digits (II), two-digit times two-digit, solving the problem, the areas of rectangles and squares, initial understanding of fraction, and data collection and collation (II). The above modules cover the fields of number and algebra, space and graphics, practice and comprehensive applications.

The mind mapping about the understanding of hour minute and second is as follows:



As for the content of the space and graphics part includes: the areas of rectangles and squares. Students made the following mind mapping:



2) Mind mapping can be used to help sort out wrong questions in recitation

Another pedagogical function of review lesson is to check and fill in gaps. The teaching of the review lesson should take the mathematics curriculum standard as the criterion, and make up for the omissions of the students' knowledge, so that every student can meet the basic requirements of the mathematics curriculum standard. It is essential to do some exercises in the review class. Doing exercises is an effective way to apply the knowledge reviewed by middle school students in the review class. The review lesson is not a simple practice class. The pertinence and systematism, hierarchy and comprehensiveness should be considered in the practice section of review lesson. Sorting out wrong questions has become an important part that can not be ignored in the review lesson. The existence of wrong questions indicates that the knowledge is not solid. Of course, if these wrong questions are not understood in time, there may be problems in the future test. When reviewing, we should take out the wrong questions for sorting out again. We should understand the cause of the wrong questions. When students draw the mind mapping, they will sort out the wrong questions. When they do the comprehensive exercises, they will know their easy points to make mistakes and do the questions more pertinently. For example, in the mind mapping of the unit of two or three digits divided by one digit, a student sorted out the wrong questions. The

circumference of a square is 324 centimeters. What is the length of its sides in centimeters? When doing the comprehensive exercises, I found that the student could do the right things for this type of questions. Another example: in the unit of mixed operation, a student's wrong question is that there are 6 computer rooms in the school, and each room has 35 computers. Now each room has 10 computers added. How many computers are there now? The student analyzed the reasons for the mistake and gave the correct answer. When doing the exercises of the total review, the students are more targeted to their weak links, and the review is also more focused.

3) Mind mapping can fully reflect the autonomy of students in learning

In the past, in order to ensure the teaching progress, the teachers of primary school mathematics review class organized the knowledge framework with the students, and the students could only be forced to accept it, and it was difficult to give full play to the subjectivity of learning. In the final review of this volume, students will take the way of independent review in advance and draw the mind mapping of the unit or module according to their own understanding of the review content. Through the works handed in by the children, it is not difficult to see that each child has different emphasis on the same unit of knowledge. For example, in the unit of the circumference of graphs, some students focused on sorting out the knowledge points, while one student sorted out the meaning of the circumference, the measurement methods of the circumference, including the rope winding method and the side length measurement method, the calculation of the rectangular perimeter and the calculation of the square perimeter respectively. While some students paid more attention to sorting out the wrong questions. Another student calculated the perimeter of rectangle and square, focusing on sorting out his own wrong questions: use two rectangles 12 cm long and 6 cm wide to form a

rectangle and a square, what are the perimeter of the rectangle and square respectively? Which one has a longer perimeter? It can be seen that by letting students review independently in advance, students can fully reflect the autonomy and pertinence of learning. This review is not only limited to the arrangement and summary of knowledge by teachers in class, but also extends the review to outside class, and students become the subject of review. In addition, the class review has become a class for students to share their ideas and cooperate in group learning. Students can share their mind mapping and listen to the problems encountered by other students when drawing the content of which part. They can also discuss the problems through group cooperation to fully learn from the strengths of other group members. Therefore, the application of mind mapping can show the subjectivity difference of students' learning, expand the time and space of classroom learning, enrich classroom teaching and create an inquiring learning environment. This fully reflects the subject status of students' learning.

#### IV. PRACTICAL THINKING ON THE APPLICATION OF MIND MAPPING IN PRIMARY SCHOOL MATHEMATICS REVIEW LESSONS

The application of mind mapping in primary school mathematics review lessons can indeed improve the efficiency of learning and review, systematize and simplify complex knowledge, and increase students' interest in learning. But it should be applied flexibly in practice, for example, when sorting out the wrong questions, we should not only sort the wrong questions in each module of, but also according to the students do wrong topics to classify the wrong questions. Each category corresponds to a graph module, so as to increase the enthusiasm of students to sort out wrong questions. Another example is that students should not pay too much attention to the form of mind mapping when they use mind mapping to sort

out knowledge, but should regard mind mapping as a means and tool to assist their study and review, and truly mastering knowledge is the ultimate goal.

#### V. CONCLUSION

Today, with the rapid development of information technology, it is not only a need for teachers to teach students, but also an inevitable trend to apply information technology to teaching. Practice has proved that the application of mind mapping as an educational technology in primary school mathematics review lesson can improve the review efficiency, but in the process of use, there will also be shortcomings. The author will continue to study how mind mapping can more effectively promote the development of review class, so as to better promote the subjectivity of students' learning.

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