
Use the textbook meaningfully in the process of teaching

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Q1: How do you use your textbook in your country?

Textbook is very important tool in math teaching and learning in China. As to me, I always work over the textbook carefully when preparing for the lesson. Combining the textbook with the reference book , I make sure what is the important point of the lesson, how to introduce the concept for the students, how to use the examples and how to do the exercise on class and after class. So the textbook is my most important reference book. Of course, different teacher have different ways to use the textbook, but most teachers will change some part of the book according to meet the different levels of the students. For example, if the students can accept the knowledge easily, the teacher will prepare some more difficulty examples as supplements or appendix. Otherwise, the teacher can prepare some easier ones. So the textbook is just a common skeleton frame, not is perfect for everyone, the teacher will use the textbook flexibly depending on the levels of the students.

Q2 How can we use our textbook meaningfully?

There are some models that can let we use the textbook meaningfully. Which models should we choose depending on the

different math content . But whatever the models are , the ultimate goal is to help the student know how to use the textbook, and how to learn mathematics themselves.

First one : read the textbook alone

Some content of chapters and sections is relatively simple, including many details in the textbook, but the student can quite capable of learning the textbook themselves. In such circumstances, we can let the students read the book themselves in class. The teacher's role is to lead the students discuss the content after they had read the book and make a summarize. There is an example as follows:



§1 集合的含义与表示

(the version of the textbook is Mathematics Textbook of Senior Middle School Publishing Company of Beijing Normal University)

Chapter one and Section 1 in senior school is the set. The content of the first section is set, element, the relationship between set and element, how to represent one set, the common number sets,

and the simple clarify of the set. There are many concepts in this section but the content is not so difficult. We can let the students first read the textbook themselves, then write the outline of this section, in the end all the students discuss the outline together, the teacher make a summarize in the end. That is the key of this section is a new language of the math, we should know the rules of the new language and can use the new language to express our ideas.

Second one : the teacher guides the students read the book in class

Some sections of the textbook are fit for the teacher guides the students read the book. Because some sections of the textbook are well organized and by means of the guidance let the students get thorough thinking of the content. Here is an example as follows:

§1 算法的基本思想

(§ 1 the basic idea of algorithm)

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In this section, the textbook gives six different type of examples in order to let the students grasp the basic idea of algorithm. The teacher can guide the students reading the book, at the same time discuss what is the similar quality or character of these examples and how to describe it. Through the discussion, the students grasp the

basic idea of algorithm gradually.

Second three : read the textbook from different views

Some part of math content can understand from different view, because it is the joint of different part of math. We can let the student read the textbook from different view of point, help the students gradually grasp the point. Here is an example as follows:

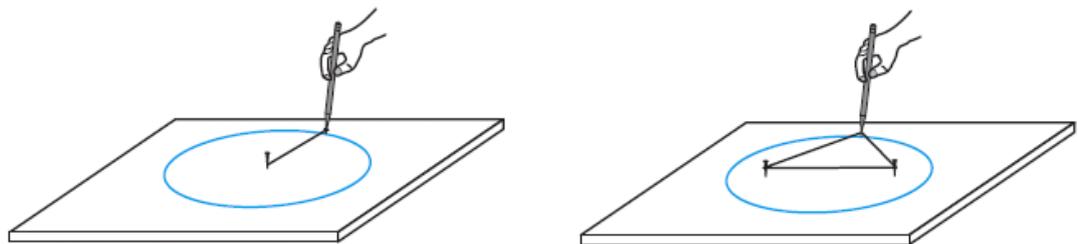
1.1 椭圆及其标准方程

(§ 1.1 Elliptic and it's standard equations)

(the version of the textbook is Mathematics Textbook of Senior Middle School Publishing Company of Beijing Normal University)

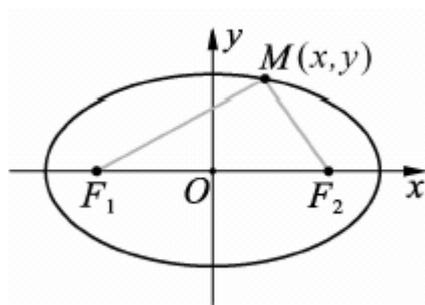
The focal point of this section is forming the definition of elliptic , building up the Cartesian coordinate , deducing the standard equations. When we read this part of the textbook, we can discuss this part from three views. These are making tools that can draw the elliptic, the geometric angle and the algebra angle.

From the point of tool, we can discuss how can we design the tool drawing the curve of elliptic. From the view of tool, understand the elliptic.



From the geometric angle, the student can analysis the geometrical properties of elliptic. That is symmetric properties, round and flat etc.

From the pint of algebra, the focal point is the coordinate method. First we should translate the definition of the elliptic into mathematical expression that is $|MF_1|+|MF_2|=2a$, then build up the Cartesian coordinate, coordinate the equality $|MF_1|+|MF_2|=2a$,then simplify it, we can get the standard equations of elliptic $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$.



From the three view, the student can understand the elliptic deeply.

So it is very import for the teacher take different methods helping the students read the book, at the same time forming a good habit of learning math. We can flexibly choose the form helping the students read the textbook.

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