HISTORICAL EXCURSION IN MATHEMATICS TEACHING

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ABSTRACT

A historical excursion in the teaching of mathematics is the covering of information from the history of mathematics relevant to the subject being studied as part of the mathematics curriculum. The information contained in each individual historical excursion should correspond to the content of the material being studied. The transmission of any educational information, including historical and mathematical information, can have different content, form of presentation and duration. The form, content and duration determine the effect of the transmitted information on the listeners, more precisely, on the students.

KEYWORDS: Educational information, including historical and mathematical information.

INTRODUCTION

Let's classify historical tours based on these features.

Classification of historical tours according to the form of delivery:

1) Information;
2) Video;
3) Multimedia presentation;
4) Staging;
5) Excursion.

Let's describe each of the presented forms of historical excursions.

Historical tour in the form of information. The most common form of historical excursion is the message, which is understandable because the historical and mathematical information presented during the lesson takes up less time and allows students to avoid abstract mathematical material. This type of historical excursion is presented in the form of oral information that satisfies the condition of connection with the educational material and its completion.

Video is the most interesting and visual form of historical-mathematical excursion. Watching a video with historical content relevant to the subject of the lesson allows students to immerse themselves in a particular period of mathematical discovery and understand the process of its development.

These types of videos are divided into two groups: a short, continuous part of a lesson and a long, whole lesson or several lessons. Short videos are best during a regular lesson, while long videos are usually used for refresher lessons at the end of any unit.

A multimedia presentation with historical and mathematical information is a set of slides containing a visual and textual presentation of the educational material. Currently, presentations are very actively used in the educational process. Therefore, the slides containing

NEXT SCIENTISTS CONFERENCES

the materials of the historical excursion can be included in the presentation that is added to the whole lesson, or it can be a separate presentation.

Dramatization is a form of information presentation in which students can fully immerse themselves in a historical event. The student participating in the staging, as if inside the event, understands its importance and the importance of discovery. This form of historical excursion will be effective if it occupies not the whole lesson, but some of its stages.

A history field trip, which usually covers an entire lesson, introduces students to mathematical objects. Excursions can be conducted by a specially trained person - a guide or a math teacher after certain training.

Classification of historical tours by content:

• Biographical information of mathematicians;

• development history of individual elements;

• Department development history.

Information from the biographies of mathematicians is an important component of forming students' historical-mathematical competence. This is how students get acquainted with the creators of mathematics, how some elements of mathematics have entered our lives. Many individuals can be role models for the younger generation. This is information that can be provided by a teacher or a student who prepares it as homework.

Historical information can be presented at the beginning of a lesson, during an introduction to an element or section of mathematics, or at the end.

Classification of historical tours according to the duration of the presentation:

- historical excursion covering the lesson stage;

- a historical excursion covering the entire lesson.

The teacher must carefully ensure that the timing of the presentation of historical material is appropriate for the interests of the students. If the excursion is long, the children will lose interest in the material, if the excursion is too short, then the students will not understand why they were told. In any case, the result will not be achieved.

The application of elements of the history of mathematics in teaching fulfills a number of tasks:

1. The task of broadening the worldview (when familiarizing with the materials of the formation and development of mathematics, students become aware of how the scientific landscape of the world has changed over time from ancient times to the present day);

2. Methodological task (it helps to form a correct idea about the ways of humanity to acquire knowledge about the world around us, the methods of development of this knowledge);

3. Integrative task (knowing the historical stages of the development of mathematical methods of scientific knowledge helps to form the idea of the integrity of mathematics, the close connection of all its departments);

4. Motivational task (systematic and correct addition of information from the history of mathematics allows a better understanding of the subject, increases interest in it and makes it not as boring as it seems to many students);

5. The task of development (elements of history are an effective tool for creating problem situations within the framework of problem-based education, and also help to develop the creative abilities of schoolchildren);

NEXT SCIENTIST'S CONFERENCES

6. Educational task (raising the general culture of students; inculcating the skills of independent work, understanding the role of mathematics in the life of modern society, the ability to defend one's views and beliefs, education of perseverance in achieving goals).

The implementation of all the above didactic functions also helps in the successful formation of specific mathematical knowledge.

With the help of examples, applying certain methods of scientific knowledge to reveal mathematical assertions from the history of mathematics, you can not only get an idea about them, but also help to understand the essence of the creative process and its methods.

When describing historical material, interrelated components can be distinguished:

- biographical information about famous mathematicians presented in detailed or short form;
- the history of the development of ideas, theories, individual problem solving;
- the history of the emergence of individual mathematical concepts, terms, signs;
- to analyze the mistakes of past mathematicians.

Of course, any teacher can independently decide which mathematicians' biographies should be given more attention and which details and highlights of their work are important to highlight. The educational value of familiarizing with the biographies of great mathematicians is undoubted. As a rule, these are people who have worked hard, faced misunderstanding of their ideas and methods, and often experienced material deprivation. They were purposeful in solving their problems, honest and correct in achieving scientific results. The young generation is also interested in the political views of scientists.

With the help of such excursions: observing the connection between mathematics and people's activities and their needs; show people's problems solved by mathematics; formation of students' creative approach to learning mathematics; try to develop interest in science, deeper and more effective learning and mastering; establishing interdisciplinary connections between mathematics and other disciplines; - it is possible to help students' mental development.

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