

"MATHEMATICAL BAZAAR" GAME IN TEACHING THE CHAPTER ON BOOLEAN FUNCTIONS

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ABSTRACT

This article describes the teaching of "This function", one of the branches of discrete mathematics and mathematical logic, using the game method "Mathematical market". Information on the method is provided, as well as an example of the organization of practical training. Practical methods cover a wide range of different types of educational activities. In practice, the following methods are used: setting a task, planning how to do it, managing the execution process, analyzing, identifying the cause of deficiencies, making adjustments to the learning process to fully achieve the goal. The rules of organization of activities, the order of training, the achievements of the effective application of the method are studied.

Keywords: Mathematical market, bul functions, monotone function, linear function, two-sided function, educational activity.

INTRODUCTION

This process will be effective and provide quality results only if the educational process arouses the desire of students to take active action, acquire knowledge and skills.

In order to organize educational activities in this way, all its methods are used: oral, demonstrative, practical, reproductive, search, inductive and deductive, as well as independent work methods.

In this process, it is important to ensure the emergence of a positive attitude towards educational activity, its content, form and methods of implementation. Therefore, in such a situation, students' deep inner experiences are added to the processes of attention, remembering, and understanding, which makes the process more intense and more effective in the sense of achieving the goal.

The main source of interest in educational activity is, first of all, its content. In order for this content to have a strong motivational effect, it should meet a number of requirements of educational principles. There are also some special methods of increasing the motivational effect of educational content.

DISCUSSION

A "math market" game activity can usually be done during review lessons at the end of a large unit or chapter. After completing a chapter, the teacher prepares examples on flashcards related to the material covered in the chapter. 2-3 examples of different difficulty are written on each card, and a "price" is assigned to each example depending on the level of difficulty (for example, 50,000 soums, 100,000 soums, 200,000 soums,...). The number of cards is based on the number of students in the class. Students are divided into groups of 4, in which on average 8-10 groups can be formed in the class. Therefore, it is necessary to prepare 8-10 of each card

according to the number of groups. 4-5 types of cards are enough (32-40 cards in total). Each group gets one of the cards, that is, each group will have 4 or 5 different cards, the "prices" must be shown on the cards for each example.

As an example, let's consider teaching a practical activity using the game "Mathematical market" in completing the chapter "Boolean Functions" of Discrete Mathematics and Mathematical Logic. Since the main topics of this chapter are creating a truth table of functions, simplifying a function, MDNSh and MKNSh, finding a double factorial function, bringing to the Jegalkin polynomial, linear and monotone functions, we will prepare cards as follows. The cards are stuck to the back of the items and the groups choose one of each option.

RESULT

If a group performs the tasks of option 1 as a unit, it will show it to the teacher, and the teacher will check the solution and write down the money earned by this group in the table prepared on the blackboard.

№	савол	нарх
1	Қуйидаги функциясига тенг кучли бўлган Жегалкин кўпхадими номаълум коэффициентлар методи билан топинг $f = (x \vee y \vee z) \cdot (y \oplus z) \vee x \cdot y \cdot z;$	100 минг сўм
2	Жегалкин кўпхадими кўринишига келтиринг. $f = (x \vee (1 \rightarrow y)) \vee y \cdot \bar{z} \vee (\bar{x} y \downarrow \bar{z});$	90 минг сўм
3	Иккитарафлама функциясини топинг $f = (x \downarrow y) \oplus ((x y) \downarrow (\bar{x} \leftrightarrow y \cdot z));$	80 минг сўм

№	савол	нарх
4	Функцияни чизиқлилиқка текширинг $f = (\bar{x} \vee \bar{y} \vee (y \cdot \bar{z} \oplus 1)) \downarrow z;$	70 минг сўм
5	Функцияни монотонлиқка текширинг $f = (x \downarrow z) \oplus ((x \vee y) \leftrightarrow (x \downarrow (y \vee \bar{z})));$	60 минг сўм
6	МКНШ га келтиринг $f(\bar{x}^3) = ((x_1 \vee x_2 \cdot \bar{x}_3)(x_2 \rightarrow x_1 \cdot x_3)) \rightarrow (x_1 \vee x_3);$	50 минг сўм

№	савол	нарх
7	Чинлик жадвалини тузинг $f = (\bar{x} \vee \bar{y} \vee (y \cdot \bar{z} \oplus 1)) \downarrow z;$	45 минг сўм
8	1 ни сақловчи функция бўлишини кўрсатинг $f = (x \vee (1 \rightarrow y)) \vee y \cdot \bar{z} \vee (\bar{x} y \downarrow \bar{z});$	40 минг сўм
9	0 ни сақловчи функция бўлишини кўрсатинг $f = (x \vee y \vee z) \cdot (y \oplus z) \vee x \cdot y \cdot z;$	35 минг сўм

After a certain time (for example, after 20 minutes), the "market" is stopped, and the teacher calculates the money collected by the groups using a table. Numbering the groups or they themselves can choose a name for the group. The group with the most money will be the winner, and the other groups will be given places. The teacher monitors the work done by the groups, and if any group had difficulty in completing a task or was unable to complete it, the groups that completed the task can show the solution on the board. If each group could not complete a task, the teacher himself can show the way to solve this task and learn the need to work on similar examples.

The next group that worked on the same option 1 will receive 5 thousand soums less for each assignment. 3 thousand soums will be deducted for each mistake. For example, suppose that the first group completed task 1 first, the second group completed the third task, and the third group completed the second task. He made a mistake in solving problems 3, 4, 9.

The second group did first for task 2 and second for task 3, making mistakes on questions 2, 4 and 7. The third completed task 2 second, task 3 first and made mistakes in questions 1, 5, 9. Group evaluation is described as follows.

CONCLUSION

Advantages of the method: a group of students can save time, exchange questions, work on the same issues, search, share knowledge, correct each other's mistakes, the method covers and strengthens many topics, the team wins. This method further strengthens the unity among students.

Experiments show that the effective teaching of mathematics and the use of a number of advanced pedagogical technologies in its practical application [1-20] facilitate students' understanding. In addition, a number of scientific researches related to this topic were conducted, and talented students published articles in co-authorship [21-30]. Mastering the recommended topic makes it easier for students to analyze scientific articles.

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