

THE WAYS OF UTILIZING PROBLEMATIC STUDY IN ENHANCING THE MATHEMATICAL *MIND* OF THE UPCOMING PRIMARY EDUCATION TEACHERS

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ABSTRACT

This article explores the use of problematic teaching methods in mathematical teaching techniques to improve the mathematical thinking of upcoming primary school teachers.

Keywords: Future elementary school teacher, mathematical thinking, problematic case, problem, problematic questions, puzzle, interactive method, problematic task.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

On the base of developing the mathematical mind of the upcoming primary education teachers of the primary education, one of the interactive methods as a problematic study (problematic lecture, problematic case and the quizzes, and also the methods of mental attack) and exploring – researching (putting the researching matters and solving a solution, exploring enigmatically, organizing the exploring – researching and etc) will provide us with great benefits.

The following procedures will be implemented while developing upcoming primary education teachers' mind: a solution will not be given promptly by the teacher to the problematic questions, it will create a problematic situation that is pertained to the content of the education, the students will find the ways and answers to the given problematic quizzes, and this will, in turn, encourage the students to think critically and independently; the problematic matters will be organized by teachers to find its solution will be implemented in the teaching procedure step by step.; analyzing the problematic matters; the method of CASE study; forming the problem and the quiz; learning independently; observing and implementing the measurement; exploring creative solution.

Problematic quizzes will be based on creating a set of tasks that allows to develop the mathematical mind of the students as well as learning independently. We cannot organize our lessons problematically without knowing the special features of it, and also it has a distinguishable notions. The problematic education will encompass the following basic concepts: problem, problematic question, problematic function, problematic task, problematic case.

In the procedure of the problematic education, it is reasonable to understand an informative question with the help of the explanatory-exhibitional methods.

The question that formed in information: in this type of questions, "what", "how?", "who", "which", "where", are the questions that can be answered by leaning on the knowledge in the memory. In addition, one of the basic problems of the problematic education is the problem. And the word problem comes from the Greek language of the "probet". Moreover, the problem

is deemed as not having a ready answer, requiring to learn, explore as well as finding a solution to the problem.

In every facet of life humanity have to conform with daily , educational and upbringing problems , these kind of problems have their own solution. During the educational procedure , educational problems will request to implement several mental activities .

These activities emerges from the situation of problematic case and differs from each other. The brain activity which is conducted in the problematic question is distinguished as having a special features of it. One of the basic ways of getting out of such problems are that a mind of humanity and intellect. The subsequent basic concept of problematic education is deemed as a problematic question. And this differs from the form of informative question, which provides with finding the unknown , might be embodied problematic condition as well as functions. In this case , we could find an answer by being creative together with pondering deeply.”“What “, “ why’ , how can be understood it?’ ,” how can we conclude from that?” are the questions by which problematic questions are arisen and provided

Several problematic questions that are being waited for being solved are put together can easily bring about problematic case. It is such case that it is accepted by teacher and a limited didactic concept , which is a clear. It encompasses by creating a dilemma situation which contradicts between two sides.

The methodics of primary education mainly urges teacher to focus on these followings :

- a) Making students realize the problematic situation and create it by plussing the mathematical puzzles
- b) Implementing the current situation and guiding it properly
- c) Selecting the form of the work so as to open its content

Hence it will be taken into consideration that to look through the ways of solving problems in problematic matters , we conducted a little survey with the students of the primary education in the lessons of mathematics from the class 1 to 4

Now we will share on these problematic puzzles :

1-quiz : there are six tables in a row including twelve in each row. Two groups came to the class which has 30 pupils. Are the tables enough for all of them? , if the tables are extra , how many of them will be extra?

Answer to the quiz:

1-way:

1) $12 \times 6 = 72$ (tables)- available tables in the auditory

2) $30 \times 2 = 60$ - the occupied tables by pupils

3) $72 > 60$. the tables will be enough

4) $72 - 60 = 12$ - the tables will be extra

Answer : the tables will be enough , and the extra is 12 tables

2-way

1) $30 \times 2 = 60$

2) $60 : 12 = 5$ both of them are occupied by pupils

There was the six row tables and the five rows were occupied by pupils, and the tables will be enough

3) $6 - 1 = 1$ (row)- will be free

4) $12 \times 1 = 12$ (seat) will be free

Answer : the tables will be enough, 12 chairs will be extra

3-way:

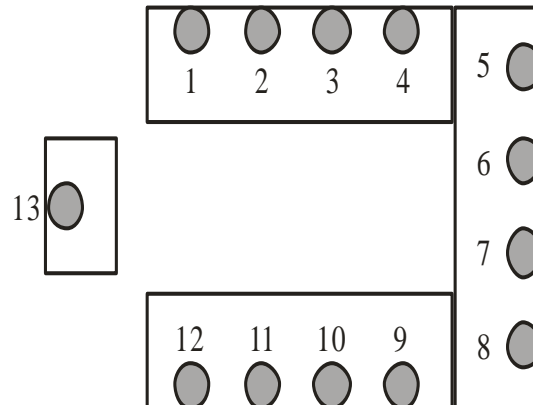
1) $12 \times 6 = 72$ chairs that are available in the class

2) $72 : 2 = 36$ the number of students that will come from the two classes

If the 30 students come, the tables will be enough

2-quiz:

The 12 tourists who came to eat sit in the 3 chairs by 4 in every chair, and the chef of the canteen joined the 4 table. After eating out, they agreed in a such way: if it is counted clockwise, every seventh will get up and leave the canteen not joining in the count again. And if anyone is the last, he or she will pay the bill. The tourists counted in a way that the chef of the canteen had to pay for the bill. Which tourist did they count from?



The answer is that they began counting from the eighth tourist

As a matter of the fact, finding an answer to the problematic questions have a sharp distinguisher from the casual questions. In this case figuring out the collaboration, and ought to be realized of its content and also it will help students to improve the razor sharp mind, quick intelligence as well as creative thinking

What is concluded from our survey is that the following things need to be included while developing the students' mathematical mind:

Creating and inserting more problematic questions in their subjects, encouraging the students as well as connecting the study with their daily life.

Activating problematic matters, it will cause the onset of students' interests and will.

For ameliorating mathematical mind of the students, during the lessons of the teaching methods of mathematics creating the problematic matters are formed like the followings:

The teacher will suggest the usage of the schools' mathematics in order to find and make up problematic matters, various solutions will be given by students to the one problematic questions, it will be put forward finding the solution to the question in different views of point, it will also urge the students to analyze, reach a conclusion, making comparison.

During the survey of which has been conducted, we have known that the primary focus of the case will be focused on enhancing mathematical mind of the upcoming primary education teachers, because one of the main way of developing the students capability, to be precise, it will improve the critical thinking of the students also thinking laterally.

We can infer from the passage that if the education urges the students to think critically, it will be concluded that this education can be deemed that it will enhance the students capability and will be based on the procedure of study-knowledge.

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