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METHODS OF EFFECTIVE USE OF SOME FRAMES, METHODS IN MASTERING MATHEMATICAL CONCEPTS IN PRACTICAL LESSONS FROM MATHEMATICS

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ABSTRACT

In the article, the purpose of the introduction of mathematics in order to master the mathematical concepts in practical classes is presented by using specific examples (methods) of the method of effective use of frames, methods, which are suitable for their application, and they are aimed at the creative, innovative thinking of students (cadets).

KEYWORDS: *Measure, Education, Train, Concept, Table, Methods, Frame, Quality Of Education, Fundamental Concepts, To Encourage Students, To Think Creatively.*

INTRODUCTION

The following tasks have been set in the resolutions of the president of our country from № 3775 in 5th June, 2018 "On additional measures to improve the quality of education in higher education institutions and ensure their active participation in the wide-ranging reforms carried out in the country" and from № 4708in 7th May, 2020about "On measures to improve the quality of education in the field of mathematics and to develop scientific research": "…the organization of the training sessions on the basis of the introduction of educational technologies and interactive methods that direct students to innovative thinking, the main attention should be paid to the implementation of curricula related to the independent education of students; further improvement of the system of teaching mathematics at all stages of education, support the effective work of teachers, expansion; the creation and implementation of an online platform for teaching and learning, increasing the effectiveness of the distance learning system, ensuring the transparency of the assessment system, etc."

From the methodology of mathematics it is known that each example or issue helps the student (cadet)to master a certain mathematical theory. This means that the process of solving an example or a question requires knowledge of the meaning and essence of a certain number of mathematical concepts. In this regard, due to the volume of training hours allocated from mathematics to the subject of practical training, it is worthwhile to establish the process of mastering mathematical concepts in a particular training or training phase, before the stage of the content acquisition of mathematical skills and skills of students.

MATERIALS AND METHODS

Taking into account a number of psychological and pedagogical requirements of the process of mastering concepts, it is necessary to clarify pedagogical technologies, innovative methods and means of organizing practical classes.

Methods and tools of full mastering of knowledge, frame, technologies of step-by-step formation of rational actions, "Analysis of concepts", "Non-standard test", "Table of truth"; in practical

training on the basis of forms of organization of educational-cognitive activity of students (cadets)in individual, couple, small groups are organized processes of full mastering of mathematical concepts. Below we bring from the frames that can be used in such practical exercises.

Table 1

Analysis of concepts

Concepts	Meaning
Indefinite integral	
Methods of integration	
Direct integration	
Integration by Parts	
Integration by Substitution Method	

Table 2

Non-standard test

1. $\int \frac{dx}{\sqrt{x^2 \pm 1}}$	A. $tgx + C$
2. $\int \frac{dx}{a^2 + x^2}$	B. $-ctg\frac{x}{2} + C$
3. $\int \frac{dx}{cos^2 x}$	C. $\frac{1}{4}[(x+3) - (x-1)]$
4. $\int \frac{dx}{1-cosx}$	D. $ln\left\|x + \sqrt{x^2 \pm 1}\right\| + C$
5. 1	E. $\frac{1}{a} arctg\frac{x}{a} + C, (a \neq 0)$

Table 3

Version 1		Version 2	
1. $2y - x = 1 \rightarrow$ **DE**		1. $y' = 3x \rightarrow$ **DE**	
2. $3dy = 2xdx \rightarrow$**DE OF 1-ST ORDER**		2. $3y'' = 5x^2 \rightarrow$ **DE OF 1-ST ORDER**	
3. $y' + 1 = \frac{y}{x}$ $\rightarrow$ **LINEAR DE OF 1-ST ORDER**		3. $(2x + y)dx - 2xdy = 0$ $\rightarrow$ **HOMOGENEOUS DE OF 1-ST ORDER**	
4. $2xdy = ydx \rightarrow$ **DE OF 1-ST ORDER WITH SEPARATED VARIABLES**		4. $2dx = ydy \rightarrow$ **DE OF 1-ST ORDER WITH SEPARABLE VARIABLES**	
5. The reverse process of differentiation is called... ? **(INTEGRATION)**		5. The reverse process of integration is called… ? **(DIFFERENTIATION)**	

RESULTS

Through the method of analysis of concepts (Table 1), it is possible to determine, analyze the extent to which students (cadets) have mastered theoretical, fundamental concepts, and to encourage students to think creatively, creatively. As an example, the analysis of concepts on the main fundamental concepts on the subject of an indefinite integral is given. This method can be given at the beginning of the lesson, and also can conduct feedback in the main part or final part of the lesson.

DISCUSSION

Such assignments, on the one hand, better emphasize the important elements of the definitions adopted in the course of mathematics and the interdependence of concepts, on the other hand, expands the circle of thinking of students (cadets).

CONCLUSION

In the case that most of the educational information that should be mastered by the student (cadets)in practical training consists of theoretical knowledge, full mastering of concepts and approvals, gradual implementation of rational actions in this target selection of methods and tools increase the effectiveness of practical training.

Acknowledgements

Proceeding from the above, we found that it is necessary to give the following recommendations: in order for a student (cadet) to have sufficient skills and qualifications in practical training in mathematics, it is necessary, first of all, to fully master the basic mathematical concepts; while the full mastering of mathematical concepts is carried out in the form of more independent work, the more; in this way is desirable if we direct the student (cadet)using the most optimal methods and technologies.

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