MONITORING OF OUTCOMES BY MATH AT THE SYSTEM LEVEL OF SPECIAL TASKS AND METHODS

Gulnoza.A.Yunusova
PhD, associate professor of the Academy of the Armed Forces of the Republic of Uzbekistan
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Abstract: The article is dedicated to the teaching of math in the process of training of highly qualified researchers. So there are a number of tasks as methods what should help to control students' skills and range of competence from math in higher education.
Key words: math concepts, "KnWknL" table, "Insert chart", passive students, regular educational process, math reasoning, activities, analyze, content of the subject.

Introduction

Nowadays, in our country, international assessments of student performance have stimulated a number of innovations designed to improve and maintain the quality of education systems. These innovations include continuous monitoring of educational outcomes at the system level, regular educational reporting, and increased funding of educational research. The purpose and objectives of mathematics education in higher education institutions are to meet the goals and objectives of the educational directions and specialties. In particular, training of mathematics in the process of training of highly qualified researchers, who are actively involved in the development of mathematics as a scientific area, training of teachers who can provide mathematical knowledge to the younger generation in accordance with modern requirements, teaching mathematical sciences in the process of training specialists in nonmath and specialties, with the training of teachers who can provide mathematical knowledge to the growing younger generation.

Methods

However, the math syllabus allows educators to understand and apply math proofs, rules and formulas, apply them to the practical issues of their field, identify different issues, types of issues, solve them rationally, and solve mathematical problems; logical sequencing, solving various issues and evaluating each method, main methods of proving math reasoning (analytical, synthetic, deductive, inductive).

Math preparation of students based on mathematical knowledge, skills and competence will be shaped in independent learning, using problematic methods aimed at teaching students to read lectures on math, conducting practical exercises, organizing laboratory classes, and developing students' creativity.

Math preparation of the student is understood to mean that every student has mastered the rules of math, laws and that they are free and independent of other subjects [2].

During the lecture, especially during practical sessions, students solve different professional and technical issues. At the same time, they pay special attention to the scientific and practical aspects of the matter, their interrelationships, external and internal laws, modeling capabilities, finding and checking the problem solving algorithm. This process is in the eyes of the students, they become direct participants of learning and learning activities, analyze the

content of the subject with regard to the subject being studied and the comparative assessment of its role and function. All this gives the student the opportunity to gather math knowledge for future professional activity and pay special attention to the research that provides the basis for developing the skills of using math hardware in solving professional problems.

In addition to other disciplines in mathematics, higher education institutions also provide students with a thorough design of the new learning material, increasing the effectiveness of learning outcomes. It is important for both the psychological and pedagogical training of the students and the community to improve the environment.

Results

In adapting students to the teaching and learning process in higher education, there is a need to teach them the requirements of independent learning that differ from those in schools, colleges or lyceums. That is, students should take theoretical knowledge out of the teacher's point of view for independent learning. At the same time, it is advisable to start with developing their skills of writing. We have used the table called "Insert chart" (Table I) [3]. Students will be asked to read the textbooks, or lectures in the textbooks, and to include four basic columns in the table, with basic definitions, theorems and others. Student is aware of the first (√) column, and the second (+) columns do not understand the new, third (?) columns for additional questions, and adds contradictory to the fourth (-) column.

Table I

Insert chart

√ (in line with what I know)	+ (new information for me)	? (information needed to be filled)	– (contra to what I know)
Random variable	…	…	…
…..	…	Law is the interdependence of any phenomena	…
…….	law of large numbers	…	…

Initially, students are asked to fill out a table as homework that they may not require each time to fill in the table when they are divided into four groups. For example, in the lecture class, the concept of the concept that students have just written, theorem can be used to put the four identical signs above. These tasks help students to read the information carefully in the process of getting acquainted with any text. That is why we call this technique "work on text insert techniques."

Discussion

In the mathematical teaching methodology and pedagogical literature [2,4,5], most of the students are asked to briefly answer the question on the subject, preparing them for a new subject, to attach it to a new topic, with emphasis on mathematical concepts and formulas.

The main subject of this process is the teacher. To avoid this situation, the main method proposed today is "Mental illness" to turn educators into the subject of the learning process [1, 3].

If we want to focus on preparing the first phase of the training, regardless of the subject matter or the practical occupation - the introduction of the introduction to different pedagogical sources, as well as the preparation of students for the process of learning new information, such as questionnaire, "Brainstorm", "Quick survey". How effective are these methods?

When we use these techniques in our lectures and practical exercises, we have come to this conclusion: students who read math better and better during questioning and answer, "Brainstorm", "Quick survey" are actively involved in this process. In fact, these students are distinguished by their ability to perform their homework on time, prepare lectures and practical exercises, and we are more motivated to go on "feedback" students. While the goal is to encourage every student, especially the passive students, to focus on mathematical concepts [6], laws, and the essence of the essay, we often try to prepare students for a new topic, some of them (in their own volunteer or teacher interview, question-and-answer).

In order to deal with this conflict, we have begun to use the methods and tools that encourage every student to think, mathematical concepts, laws, and algorithms, and most importantly, to talk among other students, to answer questions and to encourage students to participate in this process. For instance, we've seen the chart "I know, I want to know, I've learned". At first, I was asked to give the students an idea of these concepts in the "I know", "I want to know" and "Learn" columns. At the beginning of the class, it will be lectural or practical, students divided the concept into practice in three column columns before and after the introduction of the new topic [7].

The students remember these concepts, their definitions, some rules, approvals in the process of commentary on every mathematical notion. All students may not be able to reflect the original situation on their own knowledge. We took control of the realistic definition of mathematical knowledge by asking some of the students to define the concept of "knowing" on the basis of the completed tables [8].

Table II

KnWknL

№	Concepts	Getting started		
		I know	I want to know	Learn
1	Integral	+		
2	indefinite integral	+		
3	primitives of function	+		
4	definite integral	+		
5	to take outside the integral sign	+		
6	integration			
7	integrand function	+		
8	property of indefinite integral			

9	restoration of function ...			
10	Integrand expression	+		
11	solutions of the differential equation			
12	integration variable			
13	integrable function			
14	integration by parts			
15	upper limit of integration			
16	the process of calculating the integral			
17	calculation of indefinite integral			
18	Definite integral of function			
19	$\int_a^b f(x)dx=$			
20	$\int f(x)dx=.$			

After training students to fill this table, we have removed the column from the first column - the basic concepts. After introducing students to a new topic and plan, they were asked to formulate a list of the concepts needed to develop the subject and fill in the "KnWknL" table.

At the end of the session, students were able to control the number of new mathematical concepts they had learned after reloading the table. Additionally, differences in the beginning and end of the training provided the basis for the teacher to make appropriate conclusions about his / her occupation.

Insert chart, "KnDknL" chart, options for using [9,10]:

- Preparing for a new topic.
- During a new topic console.
- Focus on learners' attention to new information and concepts.
- Formation of skills in writing textbooks.
- As a homework.
- Repetition and classification lesson.
- Preparation for assessment and evaluation lessons and so on.

Conclusion

To ensure successful implementation of innovations, it is important to involve stakeholders at various levels of the system in an iterative reform process, such that they make the necessary adjustments, engage in the necessary learning processes, and take responsibility for the reform process as a sense of ownership emerges. Some mathematical concepts are common and can be found in several chapters. As one of the main concepts of a section serves as a key element for its content and its content, it can be used as a tool for interacting with other departmental concepts and helping to achieve the general pedagogical goals [6].

Little is known about how universities and teachers respond to feedback on their students' performance in educational assessments or to the reports of school inspectors [7]. Further, it

remains unclear in what form this feedback should best be delivered to stimulate the intended processes of instructional development. Feedback provided within the context of accountability systems can have a whole range of negative side effects, as shown by the literature on “teaching to the test” and “test score inflation”.

One outcome of the increased transparency afforded by educational monitoring and educational reporting is that an increasingly informed public is now demanding improvements in the education system and evidence for the effects of measures introduced [10].

Acknowledgements

As illustrated by this example, the outcomes of education systems must be evaluated from a normative point of view that are based on specified goals and targets. In addition to aspects of excellence and equity, it is important to include goals relating to the responsibility of our educational institutions to raise independent-thinking and conscientious citizens who are able to participate responsibly in the democratic processes of a pluralistic society. Such aspects are very difficult to measure in the context of educational monitoring and educational reporting, and it will be important to ensure that they are not lost from view as new models of governance are developed and implemented [6].

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