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**TO THE QUESTION OF THE STUDENTS' MOTIVATION FOR
STUDYING HIGHER MATHEMATICS
К ВОПРОСУ О МОТИВАЦИИ СТУДЕНТОВ К ИЗУЧЕНИЮ
ВЫСШЕЙ МАТЕМАТИКИ**

Summary. *In order to improve student performance, we conducted a survey of students, which made a possibility to determine the motivation of students to study higher mathematics. The results of the survey showed that mostly prevail the motivations that make the learning process not only necessary but also attractive, give strength to overcome difficulties, exercise patience, perseverance and perseverance. The survey data allowed teachers to make adjustments into education and educational work in groups.*

Key words: *motivation, questioning, mathematics.*

Аннотация. *С целью повышения успеваемости студентов нами было проведено анкетирование студентов, которое дало возможность определить мотивации студентов к изучению высшей математики. Результаты анкетирования показали, что преобладают мотивации, которые делают учебный процесс не только необходимым, но и привлекательным, дают силы для преодоления трудностей, проявления терпения, усидчивости и настойчивости. Данные анкетирования позволили преподавателям внести коррективы в учебную и воспитательную работу в группах.*

Ключевые слова: *мотивация, анкетирование, математика.*

In the last years, psychologists and teachers have become more aware of the role of positive motivation for learning in the way of successful acquisition of knowledge and skills. It was discovered [1, p.91] that positive motivation can play a big role in the way of a compensating factor in the case of insufficiently needed greater abilities; on the other hand this factor does not work – any high level can not compensate the lack of learning motive, can not lead to significant success in learning.

There are some factors that contribute to the formation of a positive motive for students:

- 1) awareness of the nearest and end point of learning;
- 2) awareness of theoretical and practical significance of the received knowledge;
- 3) emotional form of giving learning material;
- 4) professional orientation(abilities) of the learning activity;
- 5) the presence of "cognitive psychological climate" in the learning group.

On the basis of the general motivation of educational activities (professional, cognitive, pragmatic, social and personal), students get a certain point of view to various educational subjects, which is stipulated [1, p.93]:

- 1) the importance of the subject for vocational learning;
- 2) interest in a certain field of knowledge and to this subject as part of it;
- 3) the quality of teaching;
- 4) complexity of the learning a subject based on their own abilities;
- 5) relationship with the teacher of the subject.

All of these motivators can be in different ways with each other (interact or compete) and have a different impact on learning, so a complete picture of the motives of learning activities can be obtained only when the importance of all of these components of a complex motivational structure for each student has revealed.

The purpose of the article is to analyze the motivation of students to study higher mathematics in order to improve the students` success by making adjustments in the educational and pedagogical process.

There are two types of the problems, which students of the 1st course have :

- 1) bad level of mathematical knowledge, skills and abilities;
- 2) poor motivation to study and perform the requirements of the teacher, lack of skills in achieving the objectives, weak self-control and self-organization.

Taking into account these factors, it was offered to students of the first and second courses of the Kiev Polytechnic Institute named after Igor Sikorsky to complete the questionnaire (table 1) [2, p. 40].

Table 1

Questionnaire "What motivates me to study"?

№	Motivation	Points
1	Professionalism and personality of the teacher	
2	The desire to get knowledge of the subject, interest in mathematics	
3	The desire to get a points at the exam	
4	Fear to get F at the exam	
5	Fear of lowering social status(lack of permanent knowledge, etc)	
6	Unwillingness to upset parents	
7	The desire in better understanding specialty with the help of mathematical knowledge	
8	Prestigiously	
9	Communication with interesting people	
10	Something else(write your own motivation)	

In the proposed questionnaire 10 questions. The student must put priority points in front of each item from 1 to 10 (one point will receive the strongest motivation, 10 points - the weakest).

How does each of the motivations affect the quality of student learning? We consider motivation №1 as one of the most important. The personality of the teacher is important in shaping the student's outlook and attitude. It is known that the attitude of the teacher is often borne by the students and on the subject. Motivation №2 depends entirely on the student and the knowledge with which he has come to study at a higher education institution. Motivation №3 and №7 is quite strong for students who want to gain knowledge and successfully study. Students who choose the rest of the motives as priorities will have problems with learning. Motivation №6 is a study without any desire both for getting knowledge and for visiting the educational institution. This is the motive of need, which can not lead to success in learning, its implementation requires effort on itself. Analysis of all the motivations in the questionnaire is far from complete, but it can help the teacher to provide the necessary quality of students learning.

The application was filled out (anonymously) by 61 students. Table 2 summarizes the results of the survey of students of the first year of study (groups PG-81, PK-81, PB-81, PB-82) (the motivation number corresponds to the motivation given in Table 1). In paragraph 10, "Other", students from different groups have been motivated to: get a scholarship, then go abroad to work abroad, get a prestigious job, etc.

Table 2

Results of student survey

Motivation №	Number of points by groups				Total points	Place
1	76	66	48	61	251	2
2	81	66	53	41	241	1
3	79	94	49	64	286	3
4	84	79	67	65	295	4
5	106	104	91	86	387	9
6	102	105	65	81	353	6
7	116	103	56	53	328	5
8	88	110	79	84	361	7
9	98	130	74	66	368	8
10	160	133	78	114	485	10

The results of the survey of students of the first year show that the first three places occupy, respectively, the motives №2, №1, №3. The group is motivated by the educational process. Such motivation for students to study makes learning not just necessary, but also attractive, provides strength to overcome difficulties, for showing patience, diligence, perseverance. The second place of motivation №1 indicates that the students are friendly and diligent. The fourth place with a gap of 9 points received the motivation №4. This is due to the fact that the proportion of students poorly prepared from elementary mathematics at school or is afraid of the teacher. For some students, the fear of getting an unsatisfactory score on the exam mobilizes, and some paralyze. Therefore, such a high position of motivation №4 is alarming. The fifth place with a lag of 33 points took the motivation №7, which shows students' understanding that mathematics is the basis for mastering special

disciplines in the technical institute. Mathematical methods allow us to describe and investigate the processes and phenomena that are studied in general technical disciplines.

The results of the student survey will allow teachers to make adjustments to the educational and educational work in groups.

Conclusions. It is necessary that the study at the school should provide a graduate with a high-quality mathematical knowledge which will help in continuing education at a higher educational institution and that includes the possession of both the basic concepts and the skills of logical reasoning, analysis, research. Exactly mathematic, its method of thinking amplify logical thinking and develop the mental ability of the student, lay paths between different sciences and serve as the basis on which the modern achievements of society are built and kept.

Prospects for further research are concluded in the researches of the ways of studying to increase the efficiency of independent work of students in higher mathematics in a higher educational institution.

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