

The methodical principles of organizing students independent work in mathematics

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Abstract: A methodical manual on the implementation of independent written assignments given to students on the module of general concepts in the subject of the theory of elementary mathematics has been developed. The manual includes 8 assignments for each student. It includes assignments from collections of mathematical problems and operations on them, elements of combinatorics, elements of mathematical logic, classification of collections of mathematical problems, algebraic operations, algorithms and its elementary elements.

Keywords: implementation, independent, assignment, students, module, general concepts, elementary mathematics.

In today's higher education system, it is utmost important to educate and train students who can analyze conditions and adapt quickly to them. Moreover, students need to obtain deep theoretical and practical knowledge and they should have skills such as, expressing themselves independently in their chosen field, creatively approaching the issue, identifying problem situations thoughtfully and addressing them. In today's fast-paced world of information and knowledge, it is almost impossible to give students all the information that they need in class. And that is why students should increase their knowledge and skills independently.

The studies in this field have shown that students can master knowledge only if they work independently and tirelessly. By doing so, students develop basic knowledge, skills, and abilities and show a strong interest in creative work.

Therefore, planning, organizing and creating all the necessary conditions for students to study independently, teaching them to read more outside the classroom, and showing them the ways to learn should be the main priorities of higher educational establishments.

Independent learning involves making independent decisions about students' learning goals and how to achieve them, and how to use available learning resources. The students should be able to understand and act on their own, and the teacher in turn, should encourage students to develop their research skills and the ability to search for additional information to deepen their understanding of learned material.

Students' independent work provides ample opportunities for creative thinking, problem-solving, and deepening their professional skills. Independent work of students mainly involves the following tasks:

- 1) Strengthening, deepening and expanding students' knowledge of lectures
- 2) Formation of students' skills of independent work on scientific resources
- 3) Providing students with theoretical and practical knowledge related to research process
- 4) Teaching students how to apply the acquired theoretical knowledge and practical skills in the pedagogical process

In order to manage students' independent learning, followings should be taken into account:

- 1) Independent activity planning;
- 2) Self-control;
- 3) Mastering the methods of self-management;
- 4) Mastering the methods of managing personal interest;
- 5) Learning the methods of taking control of their focus

One of the priorities of independent study is that the student is responsible for his or her own learning. So, it is important to emphasize the difference between traditional education and education aimed at shaping student's independence.

In a traditional way of education students follow the teacher's instructions immediately. The teacher decides what to study and students follow the teacher's instructions. On the contrary, in the independent way of study students are actively involved in the learning process and they decide what they want to learn. They independently select and master the necessary resources. By doing so, they start thinking out of the box and try to be creative.

It is planned to teach the basics (theory) of the course of elementary mathematics in the curriculum of undergraduate students in the field of primary and sports education.

The following forms of organization of students' independent work can be used in practice in this discipline:

- independent study of some theoretical topics with the help of textbooks;
- preparation of math paper on a given topic;
- preparation for practical training;
- independent performance of assigned tasks;
- development and testing of test assignments;
- practical application of theoretical materials;
- preparation of scientific papers and articles for the conference;
- preparation of course work, final thesis;
- preparation of methodical instructions and methodical manuals;

Following things should be implemented to effectively organize students' independent work:

- systematic approach;
- coordination and integration of all stages;
- strict control over its implementation;
- improving the mechanisms of organization and control

The following requirements must be met for the successful completion of independent work assignments:

- clear purpose (strengthening of knowledge, acquisition of new knowledge, increase of creative activity, formation of practical skills and abilities, etc.)
- clear execution of tasks;
- adequate knowledge of students about the algorithms and methods of assignments;
- practical advice and guidance;
- clear definition of the reporting form and evaluation criteria;
- clear definition of the time, form and types of control

The results of independent work of students are evaluated on the basis of the current legal

document which is "Regulations on the rating system for monitoring and evaluation of student knowledge in higher education institutions." The following will be taken into account when evaluating students' independent work:

- knowledge;
- ability;
- acquired skills;
- critical thinking skills;
- the ability to apply their knowledge and skills into practice

A methodical manual on the implementation of independent written assignments given to students on the module of general concepts in the subject of the theory of elementary mathematics has been developed. The manual includes 8 assignments for each student. It includes assignments from collections of mathematical problems and operations on them, elements of combinatorics, elements of mathematical logic, classification of collections of mathematical problems, algebraic operations, algorithms and its elementary elements. This manual includes all the instructions to complete each task.

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