Consolidation and generalization of theoretical knowledge through independent education

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Abstract. Strengthening and generalization of students' theoretical knowledge of science through independent education and formation of students' skills and abilities to independently learn the basics of science; development of students' cognitive activity, independent creative work skills and creative skills; is to determine the skills of self-professional development and improvement in students.
Key words: student, science, independent education, theoretical knowledge, strengthening, skills, skills, independent creative work, development, improvement.

The topic of independent education consists of lectures and seminar topics that student’s study independently. Including: the national model of personnel training and its components, the formation and development of the science of pedagogy, its goals and objectives, its subject, scientific research methods, personal development and the factors affecting it, the single pedagogical process and its essence, didactics (education theory), laws and principles of the educational process, educational content, educational methods and tools, forms of educational organization, diagnosis of students' knowledge, skills and qualifications, content, essence, laws of the educational process , principles, general methods of education, content, essence, goals and tasks of types of education, forms, methods and tools, management of educational institutions, foundations of correctional pedagogy. Independent education helps students strengthen their theoretical knowledge, develop their ability to understand topics to the maximum extent, and expand their general outlook.

Independent work of students plays an important role in the radical reconstruction of the specialist training system and in increasing the importance of the educational process. The analysis shows that independent work is understood as such educational activity, in which, along with the acquisition of knowledge, the formation of skills is ensured. In practice, this is done in four independent types of work, depending on the specific didactic goals.

The first type of private-didactic purpose of independent work is the algorithm of activity, which, on the surface, consists of information and conditions of tasks, that is, to determine the skills that are formed in students and required of them based on the factors of the formation of initial knowledge (the first stage of knowledge). To achieve this goal, it is necessary to solve the tasks perceived by students.

The second type of private-didactic purpose of independent works is the formation of knowledge aimed at processing the acquired information in memory and performing typical tasks, that is, the second stage of knowledge. The general description of all types of independent works of the second type is that in such works the idea (principle) of solving tasks is announced, methods and methods of developing this idea (principle) and applying it to concrete conditions are required from students.

The third type of private-didactic purpose of independent works consists of knowledge formed in students during the third stage - performing non-typical tasks. This goal can be achieved in the process of solving knowledge (perception) issues that require students to create algorithmic bases of the causes of changes in the studied object. The fourth type of private didactic purpose of independent work is to create factors for creative activity.

The cognitive activity of students in performing such work is that students go deeper and deeper into the essence of the subject under discussion, find the necessary new, previously unknown ideas and solve the principles of creating new information. New connections build relationships. At the same time, the student is forced to puzzle over the essence of new actions, the nature of this or that information, which he has to create at each stage of performing the tasks. The following types of independent work are noted in the literature on pedagogy: independent work on samples; reconstructive-variative; heuristic (partial, creative); creative research. Independent work on samples is solving typical tasks, various exercises based on samples.

They are a factor in mastering the material, but do not increase students' creative activity. Reconstructive-variational independent works envisage not only the practical description of knowledge, but also the redevelopment of the structure of knowledge, the involvement of existing knowledge in solving problems. Heuristic independent work is related to the solution of some issues and problems posed in lectures, laboratories, practical exercises, seminars. Independent research work aims at the ability to see a research problem, to be able to express it independently, to define a hypothesis, to develop a plan for solving the problem, to solve it. Creative research work. In such cases, the task is to create conditions that require

the occurrence of a problematic situation. In his work, the student searches for ways to solve the problem, free from ready-made examples. Such work includes tasks related to setting up experiments, designing equipment, models, and machines. Thus, independent work is the most important method of teaching, in which students' individual activity increases in the process of preparing for classes, strengthening acquired knowledge, skills and abilities.

The main conditions for effective organization of independent work are as follows:

- scientificity of independent work, its research character; the formation of the need to independently improve one's knowledge;
- individualization of tasks of independent work;
- methodical management of the organization of independent work.

The process of independent education must cover its exact form, methods and methods. The main method of independent education is individual work on literature. This method forms the ability to find the most important information in the flow of information, give it the correct assessment, and use this information in one's professional activity. It allows you to use independent training methods based on the obtained information. The use of this method provides necessary quality indicators in practical work. Independent learning also includes performing practical tasks and working with audio-visual equipment. One of the important methods of independent education is their communication. The ultimate goal of independent education is to attract students to creative research, to work on themselves, to understand the essence of comprehensive research.

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