



The role of independent education in teaching physics

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ABSTRACT

In this article, the student's independent work is considered, which is an integral part of the curriculum. Specific work plans and research, for the study of a certain subject. The organization of independent work of a student at the initial stage of training involves the performance of a number of tasks. Therefore, every professor – teacher should first of all instill confidence in the student. To feel your approach and methods in solving a particular scientific problem. Steadfastness and confidence in their abilities and mental abilities. Teach them to patiently, systematically organize the acquisition of independent knowledge. The article analyzes the essence, goals and objectives of independent education, as well as the role of independent education in improving the quality of education.

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Fizika fanini o'qitishda mustaqil ta'limning o'rni

ANNOTATSIYA

Kalit so'zlar:

mustaqil ta'lim,
ta'lim samaradorligi,
talabalar bilim darajasi,
sifat va vaqt,
masofaviy ta'lim.

Talabaning mustaqil ishi muayyan fanni o'rganish uchun belgilangan o'quv rejasining ajralmas qismidir. O'qishning dastlabki bosqichida talabaning mustaqil ishini tashkil etish bir qator vazifalarni o'z ichiga oladi. Binobarin, har bir professor-o'qituvchi, eng avvalo, talaba qalbida o'z qobiliyati va aqliy imkoniyatlariga ishonch hosil qilishi, ularni sabr-toqat bilan o'rgatishi, mustaqil bilim olishini tizimli tashkil qilishi kerak. Maqolada mustaqil ta'limning mohiyati, maqsad va vazifalari, shuningdek, ta'lim sifatini oshirishda mustaqil ta'limning o'rni haqida so'z boradi.

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Роль независимого образования в преподавании физики

АННОТАЦИЯ

Ключевые слова:

самостоятельное обучение, эффективность обучения, уровень знаний студентов, качество и время, дистанционное обучение.

В данной статье, рассматривается самостоятельная работа студента, которая, является неотъемлемой частью учебной программы. Определенной, планами работы и изысканиями, для изучения определенного предмета. Организация самостоятельной работы студента на начальном этапе обучения предполагает, выполнение ряда задач. Поэтому, каждый профессор – преподаватель, должен в первую очередь привить ученику уверенность. Ощутить свой подход и способы в решении, той или иной научной задачи. Непокосибимость и уверенность в своих силах и умственных способностях. Научить терпеливо, систематически организовать получение самостоятельных знаний. В статье, анализируются сущность, цели и задачи независимого образования, а также роль независимого образования в повышении качества образования.

The student's independent work is an integral part of the curriculum defined for the study of a particular subject. Organizing a student's independent work in the early part of the study involves a number of tasks.

Therefore, each professor-teacher must first instill in the student confidence in their abilities and mental capabilities, teach them to patiently, step-by-step organize the acquisition of independent knowledge.

It is necessary to increase their initiative and role, taking into account the fact that the knowledge and skills acquired independently by students become more complex and expanding from course to course. Then the student, who has acquired the skills of independent learning, not only performs the tasks assigned by the teacher, but also learns to independently select and master the additional knowledge that he considers necessary, depending on his needs, interests and abilities.

It is well known that a student's independent work is often overlooked by students and faculty because it is not included in classroom hours. The instruction talks about how to organize the student's independent work and how to evaluate it.

Goals and Objectives of Student Independent Work Student's independent work is a systematic activity aimed at the acquisition of a certain part of knowledge, skills and competencies in a particular subject in the curriculum and subject program on the basis of advice and recommendations of the science teacher. The main purpose of the student's independent work is to form and develop the knowledge and skills necessary for the student to independently perform certain educational tasks under the guidance and supervision of the teacher.

The student is required to prepare an assignment on the topic in accordance with the level of difficulty, his personal capabilities, abilities and level of knowledge. In this case, the student collects, analyzes, systematizes and tries to provide as complete and comprehensive information on the subject as possible, using additional literature and information on the Internet in addition to the main literature. Check with your teacher if necessary. An essay on the topic is prepared on a computer and transmitted to the teacher of natural history. The science teacher evaluates the student according to the content of the assignment, the completeness of the information received and other characteristics.

Tasks of the student's independent work:

- have the skills to independently acquire new knowledge;
- determine convenient ways and means of finding the necessary information;
- effective use of information sources and addresses;
- Work with 3 traditional educational and scientific literature, regulatory documents;
 - work with electronic textbooks and databases;
 - Intended use of the Internet;
 - find a rational solution to the tasks and tasks;
 - database analysis;
 - preparation of work results for examination and processing on the basis of the expert opinion;
 - Systematic and creative approach to tasks and responsibilities;
 - Justify the developed solution, project or idea and defend them in a group of experts.

The procedure for monitoring the student's independent work. Control over the independent work of students is carried out on the basis of the consultation schedule drawn up at the department and approved by the head of the department. The independent work of students is supervised by a professor who teaches classes on this topic.

In accordance with the time allotted in the curriculum for independent work of the student, organizational forms of independent work, assignment options for each subject in the relevant departments are developed and approved at a meeting of the department. Guidelines and recommendations for students in each subject are developed for independent work and distributed to students in the first lesson on the subject as handouts. In determining the form and scope of independent work students should pay attention to the following aspects:

- the specific nature of a particular science and the level of difficulty in mastering it;
- the student's ability and level of theoretical and practical training;
- the degree of availability of information sources of science;
- The student's ability to work with information sources.

The form and scope of assignments for independent work, the level of difficulty should vary from simple to complex.

That is, the level of independence of students in the performance of tasks should gradually increase. The hours of independent work of the student in each subject are specified in the curriculum, and these hours should be distributed among the topics in the working curriculum. However, the topics of independent work, the order and timing of their reception should be indicated in the calendar plan. (An example of a calendar plan is provided in the appendix.) If a subject lasts more than one semester, the hours of independent work should also be distributed throughout the semester and reflected in the curriculum.

Organizational forms of independent work the student uses the following forms in the organization of independent work, taking into account the characteristics of a particular subject (course), as well as the level and ability of each student's academic mastery:

- Independent study of some theoretical topics with the help of textbooks;
- Preparation of information (abstract) on a given topic;

- preparation for seminars and workshops;
- preparation for laboratory work;
- performance of calculation and graphic works;
- Completion of the project of course work;
- Preparation of graduate work and master's dissertation;
- application of theoretical knowledge in practice;
- finding solutions to existing problems in practice;
- creation of models, models, works of art, music and samples;
- Preparation of scientific articles, abstracts for the conference;
- Preparation of electronic versions on a given topic;
- homework, etc.

Depending on the nature of the subject taught, other forms can be used to organize the student's independent work. We will now turn more broadly to the organizational forms of student independent work above. Independent study of some theoretical topics with the help of textbooks Depending on the nature of the subject, the level of knowledge and abilities of students, individual topics included in the working curriculum are assigned to students for independent study. It is necessary to pay attention to the basic phrases that serve to express and reveal the main content of the topic, to pay attention to the questions that serve to systematically describe the topic, to indicate the main literature and sources of information.

In the process of completing the assignment, students independently prepare for this topic using educational literature, scientific literature and Internet information, preparing answers to questions related to the topic, and understanding the essence of the basic phrases. If necessary, they consult a teacher. The science teacher assesses the students' knowledge using oral, written and other methods in the form of questions and answers on the topics prepared by the students.

Independent work of students is covered in the window of each faculty and department. Independent work of students is stored in each department for 6 months. Independent work of highly rated students will be published on the Academy's Web pages. Tasks of the science teacher on the implementation of independent learning Supervise the implementation of independent learning by the student in accordance with the established plan; Assignment of acquaintance with textbooks, manuals, scientific brochures, scientific articles;

Recommend basic literature, data and archival materials, as well as other sources on the subject; Scheduled consultations with students under his / her supervision; Regularly inform the department meetings about the results of the process of independent study; Preparation for seminars and workshops. The student is instructed to prepare for a practical or seminar session on a topic according to the level of difficulty, his personal capabilities, abilities and level of knowledge.

In this case, the student collects and analyzes materials using additional literature and Internet information in addition to the main literature. Preparation for laboratory work The student is given assignments on laboratory work specified in the curriculum, and these tasks are performed independently by the student. If possible, try to do this in a virtual laboratory. Completion of calculation work The student is given calculation work, taking into account personal abilities. In this case, the student independently studies the topic in depth, collects material, analyzes, uses Internet data when necessary, and performs calculations.

Then it does the graphic work. In this case, depending on the availability of demand, an electronic version of the accounting work can be done. Consult a teacher if necessary. Preparation of visual aids The student is asked to prepare visual materials (tables, drawings, pictures, maps, models, models, graphs, samples, small works of art, etc.) that help to explain and better master a particular topic.

The topic is determined by the teacher and the student is given certain instructions. The quantity, form, and content of visual aids are chosen independently by demand. Such a task can be assigned to several students on the same topic.

Preparation of tests, debate questions and assignments on the topic The student is asked to create tests on a particular topic, questions and assignments of different levels of difficulty, questions that form the basis of the discussion. In this case, the teacher gives instructions to the student on the requirements for the test and the rules of its composition, what its purpose is, how to separate the controversial moments of the topic in the formulation of problem questions, and how to create assignments.

The level of compliance with the work performed during the consultation will be monitored. Scientific article, preparation of abstracts for the conference The student is assigned to prepare an article, thesis or report of a scientific (abstract) nature on any topic. In this case, the student collects, analyzes and expresses his views on the topic from textbooks, research papers, articles and monographs and other sources of information. In this case, the student works with the teacher.

Finding solutions to existing problems in practice The student is given scientific tasks that analyze the non-traditionality of a topic or section, existing problems in practice of theoretical significance, requiring a creative approach. Practical assignments should focus on finding and finding the optimal way to solve a problem. In this case, the teacher works with the student.

In the effective organization of independent work of students: – Systematic approach to the organization of independent work of students; – coordination and integration of all stages of independent work of students; – Strict control over the implementation of independent work of students; – improvement of mechanisms for organizing and supervising the independent work of students. In order for students to successfully complete their independent work, the following requirements must be met: – Clear substantiation of objective knowledge (strengthening knowledge, acquiring new knowledge, increasing creative activity, formation of practical skills and abilities, etc.); – clear definition of tasks and assignments; – Adequate knowledge of students about the algorithms and methods of assignments, the correct definition of advice and other types of assistance; – clear definition of the reporting form and evaluation criteria; – Clear definition of the time, form and type of control In the standard and working programs in the field of study expresses the form, content and scope of independent work of the student.

In accordance with the budget of time allocated for independent work of the student, the organizational forms of independent work, options for assignments in the relevant departments of each subject are developed and approved by the dean of the faculty. Necessary methodological manuals, instructions and recommendations for students in the disciplines will be developed for independent work. Supervision of independent work of the student Supervision of independent work of the student is carried out on the basis of the schedule of consultations made at the department. The student's independent work is assessed in accordance with the hours allocated in the specific subject work program. Forms of independent work on each subject are discussed and approved at meetings of the

department. Types of control over the independent work of students and the criteria for its evaluation are discussed in each department and approved by the dean of the faculty. Criteria for the assessment of independent work are distributed to students before the beginning of the academic year (semester) together with methodological materials.

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