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The Requirements For Students's Independent Work

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ABSTRACT

Independent work is one of the key parts of developing students' learning activities as it develops students 'cognitive and learning process and leads to the ability to apply their knowledge in practice. Independent work is a means of involving students in the process of independent learning, its logical and psychological organization. To reach the outcome, methods and techniques should be provided for students to organize their learning.

KEYWORDS

Independent work, requirements, methods and techniques, organize learning activities

INTRODUCTION

In the process of organizing the independent activities of the students, we must indentify to develop their needs and knowledge in order to provide them with a means of learning. Independent learning activities of students are such a means of education based on its implementation in education:

- Passion for reading, learning, motivation created during the lesson;
- Leads students to learn from ignorance, to expand their skills;
- Creates the basis for students to continue their independent work on the studied material;
- Facilitates student activities to some extent, facilitating the organization and

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management of their independent activities.

MATERIALS AND METHODS

The types of students' independent activity can be divided differently depending on the methods of performance and teaching aids.

In the pedagogical, scientific and methodological literature, independent work is qualified on the basis of organizational, didactic, psychological and other characteristics. Therefore, independent work types are studied and analyzed on the basis of these characteristics. As a result of some researches, independent work is divided into two areas: the student's activity in the learning process and in preparation and additional activities based on an individual plan focused on student's interests and abilities. In some researches, independent work was divided into teaching and creative work and in the third direction of research work was divided into types of courses: lecture (theoretical), laboratory (observation and home experiments) and practical (problem solving) and others. Didactics, which is the basis of education, according to its principles, independent work is classified into the following:

- Independent acquisition of new knowledge;
- Deepening and strengthening of independent knowledge on the basis of repetition and their application in practice;
- Independent work monitoring and evaluation.

However, regardless of how qualified or classified the independent work is, students will eventually be able to solve problems and test tasks in physics (or other subjects). In practice, questions or test tasks are structured at different levels of difficulty and for different didactic purposes, requiring all types of independent work to be interrelated.

Independent work, described in detail by A.N. Zimnyaya, is a set of goal-oriented, intrinsically motivated student's all actions and processes. The student develops understanding, independent thinking, independent discipline, a sense of personal responsibility, and the processes of independent development, improvement and comprehension give the student pleasure. First, this definition takes into account the psychological aspects of independent work: self-activity, self-management, independent organizer, self-control, etc. Independent work is determined by the independent activity of the student. "Independent activity" is a student's creative activity without the help of others to achieve a goal in a particular situation. Student's self-activity is a student's activity based on internal motives. Self-activity and self-management is a characteristic of the student, an individual's aspiration and self-sacrifice, whose goal is to achieve an intermediate and final goal in a focused, active way, using his energy, time and resources rationally.

"Self-control" is one of the main components of independent work, which is carried out by the student, the individual. Second, A.N. Zimnyaya emphasizes that the independent work of the student is the result of a properly organized learning process studies the materials in more depth and detail. Third, independent work is the highest type of learning activity, which is the process of conscious, organized, independent development and learning of the student.

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Thus, independent work is a high-level work of the student's educational activity, which depends on the component of the educational process, its effectiveness, types, forms of organization, didactic basis and teaching aids.

Formally independent work is organized in two, in-class and out-of-class (in a circle, at home, etc.) and emphasizes the following types and forms of their organization:

- The first type is the group study in the classroom of parts of the topic that are not sufficiently understood or covered by the teacher;
- The second type is repetition in the classroom of all the materials described by the teacher on the textbook and strengthening students' knowledge on this topic;
- The third type is in this class, as a team, to learn and acquire previously acquired knowledge on the basis of new logical foundations and connections;
- The fourth type is mastering new (additional) materials at home by organizing independent activities during the lesson, without being given as a task for independent study;
- The fifth type is to reinforce the knowledge gained from the teacher's sources along the way in explaining the topic.

Students were asked to divide their independent work into four types based on their purpose, form, didactic principles, and other classifications.

I. Didactic work:

Repetition and generalization of previously learned basic and basic knowledge;

Learning a new topic or material;

Systematization of knowledge and concepts;

Strengthening and deepening knowledge and skills through repetition exercises;

Apply knowledge and skills to a new problem situation;

Monitoring students 'knowledge.

II. Depending on the classification of the organization of independent learning activities of students:

Work performed according to the sample and methodical instructions;

Independent works of a partially searchable nature;

Independent work in the description of the research;

III. According to the form of organization of independent activity of students:

Frontal (collective) work;

Independent work organized in small groups;

Individual - independent work organized in a differentiated way.

IV. According to the source of knowledge and teaching aids:

Independent work with textbooks, manuals and information;

Independent preparation of plans and abstracts of lectures on the read text;

Independent work with handouts;

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Independent performance of physical experiments;

Create models independently;

Solve problems and test tasks independently, both orally and in writing;

Dictation and writing statements;

Solving experimental problems;

Graphic examples and problem solving;

Writing abstracts;

Study of the topic and related materials using computer technology;

Broader and deeper study of the topic using Internet resources;

Work with puzzles;

Learning through didactic games, etc.

The effectiveness of the organization and conduct of independent work is to create pedagogical, psychological, organizational conditions for the preparation of students for it, as well as to increase students' interest in physics.

Also, a methodical set of independent work to differentiate forms and types of independent work of students: working program, theme of independent work, volume, performance criteria. Schedule of independent work - technology of independent work should be developed. should be developed taking into account the form and methods of solving problems of organizing and conducting independent work in science.

One of the new tools for organizing and conducting independent work is the use of computer equipment and technology. This will require specific developments, animated materials, electronic textbooks, virtual laboratory work. There are a number of electronic developments in Russian and English designed for general secondary schools.

Today there are many and varied training computer programs. When using them, it is necessary to consider the fact that they meet the didactic requirements for the study of physics or the teaching of physics, and that the teaching materials presented in them correspond to the State Standards and general secondary school curricula. To use them effectively, students must be able to work on a computer and have a set of materials needed for them to work developed and entered on a computer or be able to search for the required materials on the Internet.

The students can do the following:

1. Viewing materials from a computer database, entering materials into a computer database;
2. Use of electronic library;
3. Use of hypertext text;
4. Work with animations, interactive models, multimedia;
5. Work with diagrams, tables and diagrams;
6. Working with graphs;
7. Problem solving (theoretical, experimental);
8. Watching educational films;
9. Solve test tasks and assess self-knowledge;
10. Perform virtual laboratory work.

An integrated diagram describing the control of students' independent activity in physics is

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shown in Figure 1. The teaching aids used by the students include: terminological dictionaries, glossaries, textbooks and textbooks, reference books, encyclopedias, electronic textbooks and developments, educational films, Internet resources, scientific and methodological tools, as well as their in-class and out-of-class activities and reporting forms. listed. From this diagram it will be easy to organize and plan the independent activities of the student.

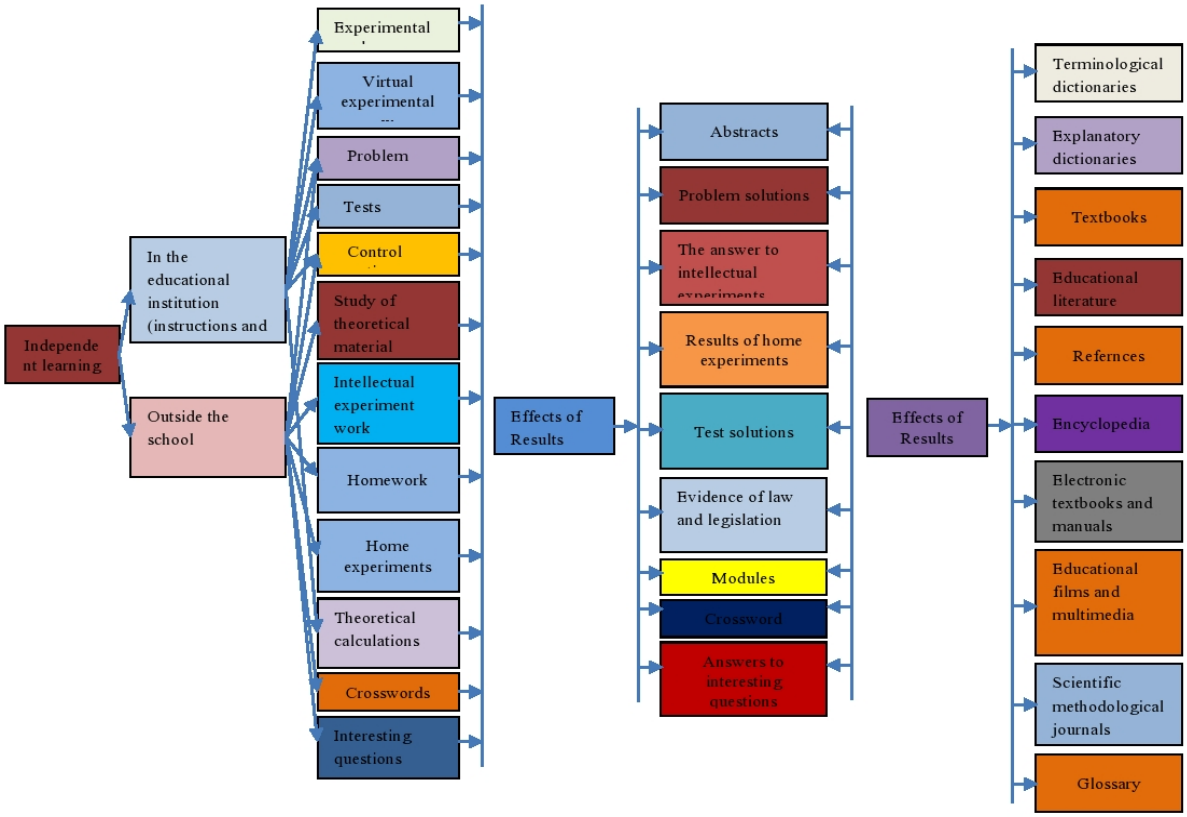

Figure 1. Schematic view of students' independent activity.

Independent work of students is a high-level work of students, which is an integral part of the whole pedagogical process. The management process of students 'independent work should ensure that teaching is educative, nurturing, and evolving. The educator is involved both directly and indirectly in the management of students' independent activities. Therefore, it is necessary to emphasize the following principles of its management:

1. Differential approach to students' activities and taking into account their level of ability to solve learning tasks.
2. Systematic increase in the level of intellectual load.

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3. Gradual transition from active to passive participation of the teacher in the learning process.
4. Transition from teacher control to self-control.

Students will have different knowledge, skills, and abilities in doing different subjects and doing different independent work. This process gives a positive result only when the independent work is organized on the basis of a single system.

According to the didactic principles, the following requirements are set for the system of independent work:

1. The system of independent work should allow to solve the main didactic problem - deep and solid knowledge of students, development of cognitive abilities, independent acquisition and expansion and deepening of knowledge, their ability to apply in practice.
2. The system must meet the basic didactic principles: clear and systematic, the connection between theory and practice, conscious and creative activity, the availability of education at a high scientific level, and so on.
3. The work (tasks) included in the system should be different in terms of learning objectives and content for the formation of different skills and abilities in students.
4. The sequence of tasks in the classroom and at home should serve as a preparation for the next tasks, which are related to each other.

Independent work is an integral part of the learning process and is effective only if it is not random or episodic, but is scheduled in each lesson and conducted on a regular basis as planned.

On the basis of the above-mentioned principles of independent work, the following features of its management should be noted:

1. Independent work should be goal-oriented.
2. Independent work is a work designed to be really independent, it should arouse in students the desire and desire to do this work and do it diligently. In this case, the task corresponds to the level of students, mainly the student must be both theoretically and practically ready to perform it.
3. In the early stages of learning, students should develop the skills to work independently through simple, straightforward problems and visual examples.
4. Independent work tasks should be as non-standard as possible and should not be exactly compatible with ready-made recipes and models.
5. When organizing independent work, it is necessary to take into account the different levels of each student, their skills, abilities and their different time spent on the task to treat students differently.
6. Independent work should be planned and organized in a systematic way into the learning process. This is how students develop solid skills and competencies.

CONCLUSION AND RECOMMENDATIONS

Independent work, its goals, types, forms of organization, the importance of the student in the process of learning the student in the

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classroom and outside the classroom were analyzed and it was determined that independent work should be an integral part of physics education. It is also advisable for students to study physics independently and repeat it in a short time as follows:

1. Independent work of students in the teaching of physics, the methodology of their organization and conduct should be aimed at specific didactic goals and meet the didactic principles.
2. Independent work in the classroom and out of class should be sufficiently level and systematized and should be an element of the learning process.
3. Independent work should be organized on a motivational, differentiated, integrated and innovative basis, and should form in students the following skills and characteristics:

a) Text planning;
b) Work with the textbook and distinguish between primary and secondary information;
c) Basic abstracting;
d) Use of additional literature;
e) Methods of working with data;
f) To know, analyze and apply physical laws, laws, processes, equations defining phenomena
g) Creation and use of graphs, tables, schemes;
h) To be able to independently prepare for and perform laboratory work and experiments in physics, to calculate the results;
i) Independent solution of various types of problems and tests;
j) Independent control and self-assessment of self-knowledge.

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