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#### THE ROLE OF INDEPENDENT WORK IN THE RESEARCH ACTIVITY **OF STUDENTS**

5.M. Kasimov\*

\*Nukus State Pedagogical Institute named after Azhinyaz Nukus, UZBEKISTAN

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#### **ABSTRACT**

This article analysis the role of independent work in the research activities of students. Independent work contributes to the conscious perception of information, which forms skills, abilities and competencies not only in educational and scientific activities, but also professional activities in the future, also develops responsibility, the ability to independently solve a problem, find constructive solutions and a way out of a crisis situation.

**KEYWORDS:** Independent Work, Educational Process, Competence, Credit Technology Of Education, Associogram.

#### INTRODUCTION

At this moment, the main task of the educational process is the education of a competent person, oriented towards the future, capable of solving emerging problems and tasks promptly, using the acquired knowledge and skills. Achieving such indicators is impossible without the development of independence skills. In this regard, the credit technology of education, which is used by the educational systems of many developed countries of the world, is promising.

Credit technology of education is an educational system aimed at increasing the efficiency and level of self-education. Under the conditions of credit technology, a system of compulsory courses and elective courses is assumed, i.e. "flexibility" and standards are combined, and the teacher is the organizer of the process of cognitive activity, the success of which largely depends on competent planning, organization and evaluation of independent work [1].

Independent work of students (SIW) implies improving the quality of training and education of future specialists. In this regard, in higher education institutions, each student is required to know rational methods of mental work, i.e., the ability to find and assimilate the necessary information, systematize and classify facts, theory, concepts, clearly state and argue their point of view.

Today, referring to the world educational practice, a high-quality and productive way of the learning process at a fast pace is to effectively reduce the volume of classrooms, provide students with more time for independent work and minimize academic subjects that affect the growth of their creative abilities.

The tempo of work of students is characterized by the degree of independence in the study of any subject. Thus, the internal content of students' independent work is not only to prepare without the participation or assistance of a teacher, but also that the student's actions consist of a combination of the function of transforming the information received into the ability to apply it

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to knowledge and the function of managing this activity, or are the ways they have created to achieve their goals.

The growth in the number of hours for independent work in the curricula of disciplines in higher educational institutions is quite justified, since it allows not only to improve the practical skills of students, but also to bring academic education in universities as close as possible to future professional activities. Independent work assumes that the student performs various tasks, including program material that was not covered during classroom lessons. This type of activity contributes to the development and activation of the creative activity of students and can be considered as the main reserve for improving the quality of training [2,3,4].

Independent work of students contributes to the fact that the student not only mastered the competencies in this discipline, but also formed the skills of independent work in all types of activities: educational, scientific, professional; formed the ability to take responsibility, independently solve a problem, find constructive solutions and a way out of a crisis situation, etc. Regardless of the specialization and nature of work, any novice specialist must have fundamental knowledge, professional skills and abilities in his profile, experience in creative and research activities to solve new problems, experience in social and evaluative activities. The last two components of education are formed precisely in the process of students' independent work [5].

In the educational process, there are two types of independent work - classroom and extracurricular. Classroom independent work on the discipline is carried out in the classroom under the direct supervision of the teacher and on his instructions. Extracurricular independent work, which is discussed in this article, is performed by the student on the instructions of the teacher, but without his direct participation [6].

Independent work can be multifaceted in its features, types, forms, which is what it really is, only in some cases it is brightly independent, in others it is veiled and independent and characterizes it with the following features:

- 1) Pedagogical goal teaching or testing;
- 2) Specific tasks to study the issue theoretically, expand the characteristics of the phenomenon, master the methodology, test the method, draw up a diagram, build a graph;
- 3) The character of the student's activity:
- Reproductive, requiring memorization and understanding;
- Assimilation and reproduction of information in lectures, books, computers;
- Performance of work according to the "standard" with some modification;
- Partly search work, requiring knowledge of previously studied material and the ability to establish some dependencies;
- Creative work solving the problem of situational issues, a type of business game.
- 4) The degree of independence is inherent in the nature of the student's activity. Minimum independence requires reproductive work, medium - reconstructive-change, maximum creative.
- 5) In form with a book, abstract, lecture, instruments and equipment:

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- Assimilation;
- Generalization is carried out in preparation for the midterm control, exam;
- Demonstration performance or response at a seminar or laboratory classes;
- Application the use of knowledge in solving theoretical, mathematical, methodological problems independent work involves their combination.

The authors of [7] came to the conclusion that when studying each discipline, the organization of independent work should represent the unity of three interrelated forms: extracurricular, classroom and creative.

The effectiveness of independent work of students is largely determined by the presence of active methods of its control. There are the following types of control: input, current, intermediate and final.

The role of a teacher in organizing students' independent learning activities is discussed by many scientists, among them V.G. Grigoryan, L. Zhuravskaya, V.D. Moroz, O.M. Loksha and others. According to the authors of works [8-11], it is the teacher who develops a system of tasks, instructs students before they are completed, monitors the progress of independent work, advises and assists students in overcoming difficulties and correcting mistakes, sums up, analyzes and evaluates the results.

The use of didactic tools and new information technologies is of high importance in increasing the efficiency of students' independent work and motivating the student to do it.

The main didactic requirements for creating a system of independent work are:

- 1. Obtaining in-depth knowledge, developing creative abilities, developing skills and abilities for self-education, its deepening and application in practice;
- 2. The system must satisfy the basic principles of didactics, primarily the principle of necessity and consistency, the connection between theory and practice and the principle of teaching at a high scientific level;
- **3.** The works included in the system must be diverse in terms of the purpose and content of training in order to form a diversified personality;
- **4.** The sequence of performing independent work in the classroom and outside the classroom, the performance of one work should be a logical consequence of the previous one and the basis for the next one.

At present, in accordance with the state standard of education in our republic, the importance of education and upbringing in higher educational institutions is radically changing, and first of all, the goal is not to equip the student with a certain set of subject knowledge, skills and abilities, but to correctly and effectively organize educational and cognitive activities. student and form a personality using new technologies.

The effective organization of a student's educational and cognitive activity depends not only on the system of independent work, but also on the fulfillment of pedagogical conditions:

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- the correct combination of the volume of classroom and independent work, effective teaching load, correct scheduling of classes, accounting by the teacher of time, opportunities for implementation, coverage of the student's educational and methodological literature when determining the complexity of independent work have a great influence on the result of independent work.

- creation of conditions for the disclosure of individual characteristics, the development of the thinking abilities of students when solving problems of independent work. This is directly related to the implementation of the model for organizing students' independent work. As a result, the skills and abilities of independent work, self-education, scientific research in their professional activities, analytical thinking, the ability to manage their activities, exercise self-control as a result of their work are formed.

For instance, of self-control is writing a dictation in a physics course. Independent work for dictation can be compiled in several versions on the topic. The task performed by students in groups or pairs on the topic of the lecture is one of the interesting forms of independent work. The task performed by a group or pairs in the form of compiling an associogram increases the activity of students.

An associogram is an image of an association with a graph and text associated with the subject, phenomenon and concept being studied. The associogram is the most effective method for self-studying for students. Handing over a table of concepts and terms contained in lecture materials, or compiling a glossary, allows students to independently search for them. For example, submitting a table on the topics of kinematic quantities characterizing rectilinear and curvilinear movements, characterizing the types of forces and analyzing tables contributes to a deeper assimilation of physics.

When compiling associograms, tables or a glossary, students learn to work with educational, scientific literature and reference materials. All information is in the Internet space. Modern students work independently, using the Internet space, and not only find, but also select, by analyzing raw materials under the supervision of a teacher, and assimilate the course material. Working with information and communication technologies, they develop qualifications in this direction and form an information culture, which naturally affects the student's research activities.

Summary , we can draw the following conclusions: firstly, modern educational systems in developed countries use credit technology based on self-study, which, as practice shows, is associated with high rates; secondly, instilling students in independent work, in particular, working with the Internet space, forms a conscious perception of information, which subsequently leads to the ability and skills of professional activity, forming responsibility, sociability and, ultimately, professional competencies of future specialists, which includes information culture.

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