



## Independent work: A possible form of training

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### Abstract

The increased demands and rapid changes in society, the development of equipment and technology create constant tests for higher education and especially for the training of medical specialists. In our opinion, independent work is a means of forming a student's independence. The success of independent work depends on the conviction of the student and the responsibility of the teacher. Independent work can be applied both for theoretical and practical training. The analysis was made of the attitude of students to independent work as an opportunity to confirm old and acquire new knowledge.

**Methods:** Systematic approach and critical analysis of available scientific periodicals; sociological and statistical; own study of the problem.

Most of the students have techniques for independent work, but a preference is given to group work; independent work is a means of preliminary preparation, immediate use of what has been studied; basis for research activities; instills confidence in students; prepares the implementation of their ideas.

**Conclusions:** Effective independent work can only exist if the goal is clearly and precisely defined. The program of independent work is compiled selectively in accordance with the goal and the capabilities of the students.

**Keywords:** Independent work; Training; Students; Medical specialists

### 1. Introduction

The increased demands and rapid changes in society, the development of equipment and technology create constant tests for higher education and especially for the training of medical specialists. The ambitions of teachers to present modern knowledge in the required quantity and quality are aimed at:

- rational use of time for preparing students at the university;
- increasing the motivation of students to acquire new knowledge;
- support for the transition from theoretical to practical, to patient-centered learning [1, 2].

In our opinion, it is no coincidence that independent work has found a place in the curriculum for preparing students.

Independent work is a systematic and consistent activity of the teacher, aimed at the conscious and creative involvement of the student in the educational process [3, 4, 5].

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Independent work is a means of forming the independence of the student, the external manifestation of which is, for example:

- selection of educational literature
- study guides for independent work
- implementation of educational tasks
- performance of professional duties [6, 7].

The success in independent work depends on conviction of the student and responsibility of the teacher.

Independent work can be applied to both theoretical and practical training. Practical training is expressed in two directions: exercises and work in a real work environment.

According to the didactic purpose of the independent work it consists in following:

- obtaining new knowledge;
- applying the acquired knowledge;
- repeating knowledge;
- testing and evaluating students' knowledge and habits [5].

Depending on the execution time, independent work can be in classroom - during school hours or extra-curricular (home).

Depending on the method of organization, independent work is frontal, group and individual [4].

Independent work of students is one of the most important ways of organizing educational and cognitive activities in the training of medical workers. Independent work is associated with and often included in various forms of learning [2].

Thus, independent work is a conscious and purposeful activity that is implemented by students in the field of healthcare based on the learning goals previously set by the teacher. This is a joint and interconnected activity of teachers and students without direct dominant guidance from the teacher [7, 8, 9].

Methods of independent work are part of the methods of organizing educational and cognitive activities. Individual methods of independent work include:

- methods of working with textbooks or teaching aids;
- methods for independent work with laboratory instruments;
- a method for independently solving problems or medical cases;
- a method of independent observation of the clinical environment or patients;
- a method for independent development of projects, reports, abstracts, posters;
- a method for independent work on the model, the patient as a "living tool" in clinical practice [6, 8, 9, 10].

The democratic focus on the educational process is connected with the independent work [1, 3].

Globally, the ratio to classroom employment to independent work is 1:3.5. [11, 12, 13]

Purpose: to analyze the attitude of students to independent work as an opportunity to confirm old and acquire new knowledge.

To achieve this goal, it is necessary to solve the following tasks:

- Research and assessment of the didactic characteristics of independent work when studying at a Medical college as a means of developing professional competence;
- Checking student's readiness for independent work and determining its place in the educational process;

Supporting the transition from theoretical to practical training, i.e. training in a real working environment, in order to successfully realization of competent medical specialists.

## 2. Material and methods

The object of the research is the methodological aspects of the organization of independent work of students studying in the specialties "Rehabilitator", "X-ray technician", "Medical cosmetologist" and "Assistant to pharmacist".

The study period covers the period from January 2021 to June 2021.

Place of study: Medical College, Plovdiv Medical University.

### Research Methods

- Systematic approach and critical analysis of available scientific periodicals;
- Sociological and statistical;
- Own study of the problem.

We conducted a survey of students studying in the specialty "Rehabilitator", "X-Ray Technician", "Medical Sweep" and "Pharmacist Assistant" in the Medical College - Plovdiv and got an opinion for the importance of independent work in the learning process on the formation of their professional competence.

In order to establish the possibilities, positive and negative aspects of independent work, we conducted a survey that provides an opportunity to express a position and unbiased opinion

## 3. Results and discussion

The study involved 85 rehabilitation specialists, 26 X-ray technicians, 19 cosmetologists and 98 pharmaceutical assistants, in total 228 students. (Table 1)

**Table 1** Distribution of survey participant by specialties

Specialty	Pharmaceutical assistants	Rehabilitation specialists	X-ray technicians	Cosmetologists	Total
Students	98	85	26	19	228

The number of students from the specialties "Assistant Pharmacist" and "Rehabilitator" who took part in the survey is high, as the admission to these specialties is relatively large.

The distribution per participant by gender is presented in Table 2.

**Table 2** Distribution per participant by gender

Specialty Gender	Pharmaceutical assistants	Rehabilitation specialists	X-ray technicians	Cosmetologists	Total
Male	16	28	10	0	54
Female	82	57	16	19	174

As can be seen from Table 2, the women are about three times more than men. We attribute this to the feminization of these specialties as is the case everywhere in the world nowadays, according to literary data.

The data of the survey: "Does independent work under the guidance of a teacher form professional interests and the desire for success in learning?" are presented in Table 3.

**Table 3** Control independent work for a teacher

<b>Specialty Answer</b>	<b>Pharmaceutical assistants</b>	<b>Rehabilitation specialists</b>	<b>X-ray technicians</b>	<b>Cosmetologists</b>	<b>Total</b>
Yes	79	82	19	16	196
No	1	2	2	1	6
Partially	19	1	5	2	27

Obviously, the teacher is actively involved in the control of students' independent work. 196 students report such control, 6 students deny the help of the teacher and 27 consider this control partial.

Most of the students surveyed have formed habits of independent work. (Table 4).

**Table 4** Habits of independent work

<b>Specialty Answer</b>	<b>Pharmaceutical assistants</b>	<b>Rehabilitation specialists</b>	<b>X-ray technicians</b>	<b>Cosmetologists</b>	<b>Total</b>
Yes	85	74	20	16	195
No	11	10	6	3	30
Partially	2	1	0	0	3

The large number of students with habits of independent work is explained by the fact that some of the respondents have come with such habits since the general school, and the other part have acquired this habit at the Medical College. The proportion of those not relevant to independent work is statistically insignificant.

Independent work is individual and group. (We representing students' preferences in Table 5).

**Table 5** Individual and group independent work

<b>Specialty Ind. work</b>	<b>Pharmaceutical assistants</b>	<b>Rehabilitation specialists</b>	<b>X-ray technicians</b>	<b>Cosmetologists</b>	<b>Total</b>
Individual	38	21	6	4	69
Group	45	52	17	13	127
Don't know	15	12	3	2	32

The proportion of students who prefer group independent work is larger (127 students). This preference is explained by the support and security created in group independent work, which creates the conditions for future collaboration. Individualism in independent work is preferred by 69 students.

Some students are afraid of being overshadowed by their peers. Here we also note a rather large number - 32 students not associated with the two types of independent work.

Independent work can be used as a means of preliminary preparation by 76 students. Conversely, 140 students claim (Table 6).

**Table 6** Independent work - a tool for preliminary preparation

Specialty Answer	Pharmaceutical assistants	Rehabilitation specialists	X-ray technicians	Cosmetologists	Total
Yes	31	32	9	4	76
No	63	49	15	13	140
Don't know	4	4	2	2	12

We found that students prefer to receive new knowledge from their teachers. On the other hand, the conducted research shows the possibility of independent work on the preparation of students for immediate use of what they have learned (according to 166 respondents). 12 of the respondents have no bearing on the question asked. 43 students disagree with this, 9 students refrain from expressing their opinion.(Table 7).

**Table 7** Independent work as a way for immediate application of acquired knowledge

Specialty Answer	Pharmaceutical assistants	Rehabilitation specialists	X-ray technicians	Cosmetologists	Total
Yes	75	57	19	15	166
No	19	15	6	3	43
Don't know	4	3	1	1	9

The relative share of dissenting students gives us reason to believe that the teacher should focus his efforts on using the resource "independent work". The Medicine college prepares specialists who, immediately after graduation, begin working in the healthcare system. The resource "Independent work" provides an opportunity to adapt to the real work environment.

The acquisition of knowledge is meaningless if students cannot use it to solve practical problems and apply it in new situations. (MN, MD ).

There is a trend towards an increase in the student's desire to participate in research activities (through independent work), aimed mainly at participating in scientific forums (Table 8).

This is confirmed by the positive response of 202 respondents. Of course, there are also negative respondents - 21 students, but in return the number of students without an opinion is small.

**Table 8** Independent work - the basis of the research activities

Specialty Answer	Pharmaceutical assistants	Rehabilitation specialists	X-ray technicians	Cosmetologists	Total
Yes	88	76	22	16	202
No	9	8	2	2	21
Don't know	1	1	2	1	5

The success of independent work aimed at research activities is determined by the degree of preparedness of the student.

A positive trend in the organization of independent work is the increased attention of the student to obtaining new in-depth knowledge, creative self-realization, and the development of a culture of thinking. (Table 9).

**Table 9** Does independent work increase the student's attention?

<b>Specialty Answer</b>	<b>Pharmaceutical assistants</b>	<b>Rehabilitation specialists</b>	<b>X-ray technicians</b>	<b>Cosmetologists</b>	<b>Total</b>
Yes	85	7	23	16	131
No	10	11	2	1	24
Don't know	3	3	1	2	9

The problem of student attention is one of the main ones in the theory and practice of didactics. This led us to the study of addiction "independent work – student attention"

164 of the 228 respondents answered this question. 131 answered in the affirmative, 24 disagreed, and 9 did not find it necessary to answer. The explanation of the result obtained can be sought in the lack of interest in independent work.

One of the qualities that a student must acquire during their studies is self-confidence, which is the result of accumulated knowledge and established lifelong learning habits (Table 10).

**Table 10** Independent work for the student and self-confidence

<b>Specialty Answer</b>	<b>Pharmaceutical assistants</b>	<b>Rehabilitation specialists</b>	<b>X-ray technicians</b>	<b>Cosmetologists</b>	<b>Total</b>
Yes	78	63	20	16	176
No	13	12	2	1	28
Don't know	7	10	4	3	24

Analysis of the results provides information on the development of the quality of "self-confidence", acquired as a result of independent work. 176 respondents think that the connection "independent work – self-confidence" is directly proportional. The number of those who do not believe in the possibility of developing self-confidence through independent work (28) and those who are not related to the opportunity under consideration is approximately the same – 24.

One of the tasks of higher education is to develop the student's ability to freely express their own views and implement their own ideas - Table 11.

**Table 11** Independent work as a means for develop the students' ability to freely express their own views and implement their own ideas

<b>Specialty Answer</b>	<b>Pharmaceutical assistants</b>	<b>Rehabilitation specialists</b>	<b>X-ray technicians</b>	<b>Cosmetologists</b>	<b>Total</b>
Yes	80	65	16	13	174
No	11	12	4	3	30
Don't know	7	8	4	3	22

Independent work helps students express their personal views and realize their own idea according to 174 students. 30 disagree, 22 have no opinion.

In order for students to express their views and implement their ideas, professional and creative thinking is necessary, both during their studies and in their future work (Table 12).

**Table 12** Independent work on professional and creative thinking

<b>Specialty Answer</b>	<b>Pharmaceutical assistants</b>	<b>Rehabilitation specialists</b>	<b>X-ray technicians</b>	<b>Cosmetologists</b>	<b>Total</b>
Yes	78	73	22	10	183
No	8	4	2	6	20
Don't know	12	8	2	3	25

About 80% of all respondents are categorical that independent work develops professional and creative thinking. The answer to this question lies in the pedagogical work of the teacher. A good teacher, standing in the background, creates conditions for the student to come to the fore with the development of professional and creative thinking.

The relative share of those who think otherwise is about 20%. This is the place where the teacher needs to work harder, because independent work is the basis for continuous self-improvement through lifelong learning.

#### 4. Conclusion

Effective independent work can exist only if the goal is clearly and precisely defined, and the independent work program is selected in accordance with the purpose and capabilities of the students.

Independent work allows:

- to increase the academic motivation of students to actively participate in extracurricular independent work and additional practical training in a real production environment;
- create of prerequisites for the renewal of disciplines and topics, as well as for the implementation of diverse and creative independent work, including courses adapted to the needs of health
- to reduce the level of stress among students during training, so the consequences of stress to be insignificant during subsequent adaptation to the professional environment;
- to develop professional and creative thinking;
- formation of teamwork skills

#### Compliance with ethical standards

##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

##### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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