

# The effectiveness of the process of self-education in a foreign language at non-linguistic faculties

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**Abstract.** This article discusses the effectiveness of the process of self-education increases when the following set of pedagogical conditions, under which we understand the set of interrelated measures of the educational process, the observance of which ensures the achievement of pre-planned goals and objectives of training: the competence of the English teacher; the combination of collective, group and individual forms of organization of the educational process; the use of a variety of teaching methods and methods of activity, taking into account the individual characteristics and the initial level of preparedness of students; methodical provision of students for the organization and implementation of this type of activity (comprehensive and timely information about the sources of educational information, thematic content of the work, the need for works, forms of control, etc.).

## 1 Introduction

The important task of preparing the young generation for labor and social activities in the key links of the modern production system is solved by the higher school. At the same time, the classical system of higher education, which was born more than a century ago and existed almost unchanged, is rightly criticized today. Firstly, until recently, students' education was mainly aimed at the transfer of knowledge, the formation of skills, and did not always contribute to the development of intellectual, professional and creative abilities of students, their abilities to self-education. The development of these abilities ensures the competitiveness of a specialist in the labor market.

Secondly, the reproductive teaching methodology provides for the organization of the educational process, where the student acts as a passive listener, who practically has no time for self-preparation.

Thirdly, the applied technologies and teaching methods aimed at increasing the level of learning do not adequately ensure the active cognitive activity of students, the development of their intellectual abilities and personality as a whole.

## 2 Methodology

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Development of proposals and recommendations for improving the quality and efficiency of independent education in English for students of higher medical educational institutions.

Research objectives scientific substantiation of the innovative description and components of the processes of independent learning of students as a complex pedagogical system;

identification of pedagogical-psychological and ergonomic features of the processes of independent learning of students;

identify the specifics of the stages of organization of self-study of students in the classroom and in the process of extracurricular activities;

development of proposals for the effective organization of self-education of students;

development of proposals and recommendations to improve the quality and effectiveness of self-study of English by students of medical universities.

Research Methods methods of analysis of pedagogical observation, interviews, modeling, design, diagnostics, pedagogical experimentation, data collection, comparison, peer review, methods of generalization and statistical processing were used.

The scientific novelty of the study is as follows the relationship between pedagogical-psychological and ergonomic (allotted time, duration, conditions created) features of the process of organizing independent education of students and the volume and content of topics selected as interdisciplinary integrated training modules has been scientifically substantiated;

innovative aspects of the process of independent education (novelty, individuality, mobility and reflective approaches) and components (content, form, teaching materials and tasks) are coordinated taking into account the specifics of educational processes on the basis of a credit-modular system;

improved mechanisms for expanding the didactic potential of student-centered learning at the stages of organizing the process of independent education in accordance with the basic concepts of students by ensuring the interconnection and interconnectedness of tasks that form and develop their interest in professional activity;

the mechanisms of organizing the process of independent education in teaching the English language have been improved on the basis of the intensification of processes aimed at achieving results in accordance with the performance indicators developed by preliminary design of situations that form the professional concepts of students.

The practical results of the study are as follows

guidelines for organizing independent educational processes for teachers of medical higher educational institutions were developed;

developed and put into practice the rules for organizing self-study of students;

the charter "Criteria for evaluating independent education of students of medical higher educational institutions" was developed;

the educational and methodical manual "Foreign language in medicine" was developed

A foreign language as a general education subject serves the development of personality, including its professional formation. The academic discipline "Foreign language" is actually a means of obtaining information about other peoples and countries, their culture. In addition, knowledge of a foreign language helps to orient a student in the vast world of modern professions, and also contributes to the formation of professionally important personality qualities.

The functions of a teacher in joint activities with students from planning, organizing, directing and controlling at the initial stage of the formation of a student's self-educational competence are transformed at higher levels of pedagogical management of self-education into a coordinating, recommendatory, orienting [1]. At the same time, the participation of the teacher is reduced in terms of direct contact with students and, at the same time, increases and becomes more complicated in terms of providing the student with the

necessary information support for him to implement the content of independent work. The student's activity, on the contrary, is becoming increasingly active — from the perceiving, copying role, there is a transition to active independent actions for the organization, planning, control, adjustment of their own activities. When organizing students' self-education at a pedagogical university, many factors affecting its effectiveness should be taken into account, therefore, it is necessary to compile a general organizational and structural model for the development and management of students' self-education in the process of learning English at non-linguistic faculties and a structural and functional model for the development and management of students' self-educational activities in the process of learning English at non-linguistic faculties of the model.

A model in a broad sense means any image (mental or conditional: image, description, diagram, drawing, schedule, plan, map, etc.) of an object, process or phenomenon used as its "substitute", "representative"[2]. When modeling the development and management of self-education of future teachers in the process of learning English at non-linguistic faculties, two sides of learning are distinguished: substantive and procedural.

The content of self-education acts as socially and personally determined, fixed in pedagogical science and state educational standards, the idea of social experience to be assimilated [3]. For this reason, modeling the content of self-education in English at non-linguistic faculties is based on the resources of pedagogical guidance of self-educational activities.

The content of a student's self-education in the process of learning English at non-linguistic faculties can be represented by three components:

1. A component of the educational standard, which systematically reflects the purpose of self-education in the form of elements of social experience. The content, isomorphic to social experience, consists of four main structural elements: objects of self-education, types of self-educational activity and their tasks, experience of self-educational activity, fixed in the form of its results - knowledge; experience of implementation of known methods of activity in the form of self-educational skills; formation of self-educational activity in the form of self-educational competence.

The first component specifies which elements of social experience should be included in the content of self-education when studying English at non-linguistic faculties, outlines their completeness, which a graduate should have according to the educational standard.

2. A component of the curriculum that contains language material containing those areas of social experience that the student must master.

When designing self-education in this component, the function of the English language is crucial. Not only the logic of the language is taken into account, but also the conditions of the learning process in which the academic discipline is implemented, brought to each student.

Standardizing the content of the English language on the basis of involvement in self-educational activities, it is necessary to distinguish the following five levels: integral characteristics of the subject area of the English language; doctrinal, characterizing the English language as a system of tasks for the formation of certain linguistic qualities of students in specific training conditions; problem-thematic, highlighting the main problems and sections of the English language, within which this issue is discussed; highlighting the conceptual and terminological apparatus; organizational, representing the forms of pedagogical interaction within which the presentation of educational material in English takes place; technological — the stage of designing the English language, where it is revealed through a system of methods and means of self-education management.

3. Component of the training material it is represented by elements of the content of self-education, which acquire a complete form in the form of a certain system. In particular, the criteria for the selection of educational material for language training can be: full

compliance with the main directions of the development of the English language; the possibility of organizing language material into an integral system of interrelated competencies; relative stability; sufficient lexical knowledge; close relationship of educational material with future practical activities.

There is a concretization of educational material on courses reflecting theories and systems, professional technologies in the process of learning English at non-linguistic faculties, etc. The selected educational material in English is included in the methodological manual and other materials in the form of educational texts, assignments, exercises, creative projects, conceptual and terminological dictionary, glossary.

When modeling the process of self-education it should be borne in mind that the student's self-education is not an autonomous activity of an individual according to his own understanding, but a conscious and systematic, teacher-controlled mastery of competencies, which becomes dominant.

Thus, two stakeholders are involved in the development and management of self-education: the teacher and the student himself.

Development and management of self-education on the part of the English teacher of the interfaculty department of the university: to form each student's need and positive motivation for self-education; to equip them with the theoretical foundations of self-educational activity, competencies of a high culture of intellectual work; to teach them to work with primary sources (acquisition of skills in working with bibliography, the ability to make a simple or complex plan, highlight the main idea in the text; the ability to take notes and tell coherently); to form organizational and managerial competencies (to create a daily routine, a perspective for the near future, to be able to combine university studies, cultural leisure, sports with self-education).

To solve these problems in the development and management of self-education, the functions and components of the formative activity of the teacher should be taken into account.

In the history of the development and management of educational systems in the process of learning English at non-linguistic faculties, two approaches to the problem of goal-setting can be distinguished: formative (projective) and free. The formative approach is based on the fact that the highest goal of education is the fullest satisfaction of the requirements of the state to the individual, to the graduate who must master a foreign language.

Within the framework of this approach, the interests of the state come first. The second approach - free goal setting involves creating conditions for the maximum development of the abilities of each individual, her ascent to the highest human aspirations, life ideals and priorities, in other words, the maximum development of those human properties that are determined by the needs of the individual [4]. The functions of the activity of a higher school teacher: teaching, developing, educational, diagnostic, controlling, constructive, organizational, project, informational, orientation, mobilization, research. The formative activity of an English teacher includes: input diagnostics of intelligence and competencies; motivation for learning; adequate external conditions; communication in training, operational consulting assistance; operational control by the teacher; positive emotional balance of self-education; didactic management. When organizing self-education, the basis of the formative activity of an English teacher is an adapted informational training-developing and controlling environment of self-learning created by him, through which: indirect didactic management of the process of self-education is carried out; self-control; multi-channel presentation of educational information; positive emotional balance of self-education [5].

The development and management of self-education is carried out in accordance with the following general principles of management: sustainability, which provides for a system

of corrective actions that, in case of deviation of the results from the learning objectives, reduce this deviation by adjusting the content of training, formulating more predictive goals, finalizing management actions and their efficiency, ensuring clearer coherence of interactions of subjects, etc.; comfort, meaning the creation of maximum convenience for the creative manifestations of participants in pedagogical interaction; concentration, implying the unification of the efforts of all subjects to solve the main tasks (cognitive, design, management) arising in the course of the educational process; parallelism, implying the simultaneous implementation of several management decisions in the conditions of pedagogical practice; adaptability, considered as the adaptability of subjects and objects of management to each other and to changing conditions of activity [6-10].

The specifics of pedagogical support of a student's self-educational activity in the process of learning English at non-linguistic faculties is to create pedagogical conditions for the student's free goal-setting and his choice of adequate goals of self-educational activity, as well as the content, methods, means and forms of its achievement. The effectiveness of the self-education process increases when the following set of pedagogical conditions is met, which we mean a set of interrelated measures of the educational process, compliance with which ensures the achievement of pre-planned learning goals and objectives: the competence of an English teacher; a combination of collective, group and individual forms of organization of the educational process; the use of a variety of teaching methods and methods of activity, taking into account individual characteristics and the initial level of preparedness of students; methodical provision of students for the organization and implementation of this type of activity (comprehensive and timely information about the sources of educational information, the thematic content of the work, the need for auxiliary tools, forms of control, etc.) [11-14];

availability of sources in the library resources of the university for independent work by students; career guidance of disciplines and the depth of profiling of certain disciplines (taking into account the multilevel division of future professionals into bachelors, specialists, masters); stimulation of students' cognitive activity, which is a simulation of students' own learning activities; availability of timely feedback; monitoring of knowledge control, including diagnostics and evaluation of the quality of the results of the activities of subjects of pedagogical interaction, according to the results of which the teacher can clarify the goals and content of training, revised approaches to the choice of organizational forms and methods of training, individual stages of the technological chain.

The development and management of the student's own educational activities allows to significantly intensify the work on self-education and self-development, to bring students closer to creativity. In order to develop and manage their own educational activities, students need to: realize the purpose of the upcoming cognitive activity, comprehend and internally accept its motives; allocate the amount of self-educational material to be studied; plan the sequence of its study; determine ways of self-education for mastering this self-educational material; choose the means and didactic technologies of cognitive activity [15, 16].

The conditions of a student's success in the process of developing and managing their own educational activities in the process of learning English include: a conscious desire for self-education in accordance with individual characteristics and needs of society; a sufficient level of self-educational competence; availability of language support and operational assistance in developing the trajectory of self-education; adequate self-assessment of their own achievements based on introspection and reflection, which allows you to see the individual result achieved; self-control and self-correction of cognitive activity.

### **3 Experimental results**

380 students took part in the experimental work, while the experimental group (EG) included 190 students, and the same number was in the control group (KG) (Table 1). In the course of our research, we relied on the components of students' self-educational activity, namely: motivational-value (consisting of desires, incentives and motives); executive-organizational, including various skills (for example, organizational, research); meaningful, characterized by the optimal level of knowledge in English; and cognitive, with developed techniques of mental activity.

The study was conducted in 3 stages (2017-2020).

The first stage (2017-2018) was the initial stage, covering the period from the very first academic year. This stage involved the distribution of tasks to students in English classes, which required an independent search for solutions with the use of special information technology sources for this. As a result, there was a full-fledged control with mandatory correction of students' actions when learning English in medical schools. All teachers took into account the professional orientation of the trainees, focusing their attention on the peculiarities of the English language, on the importance of self-education classes in order to obtain proper knowledge and skills in its study, focusing on professional activity. There was also a special need for the development and management of subject, methodological, psychological and pedagogical, as well as general cultural self-education. The final indicators of this work ensured the usefulness of a combination of didactic conditions, where emphasis was placed on the formation of students' readiness for intensive self-educational activities. But at the same time, a special role was assigned to the interest, explanation and direction of the English teacher himself at the medical university. The presented stage had a focus:

first, to initiate and consolidate the motivational and value component of students' readiness for self-educational work;

secondly, purposefulness was carried out in the work in order to effectively form the executive evaluation unit, i.e. self-educational competencies;

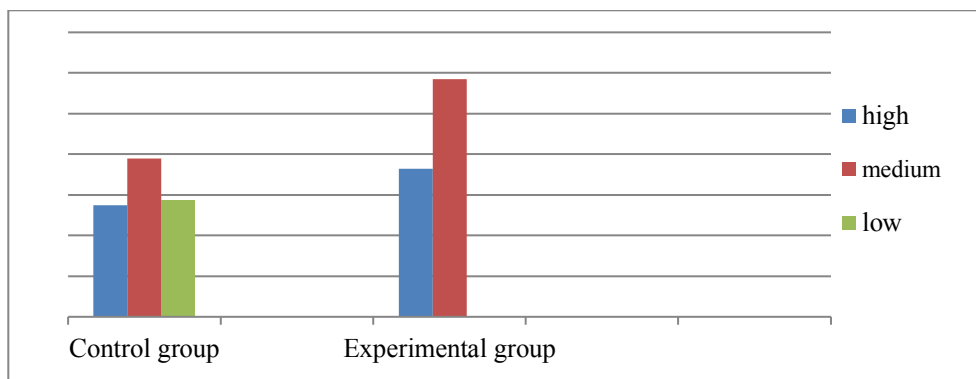
and thirdly, work was carried out on the effective accumulation of the necessary knowledge in English, namely: pronunciation correction, literacy in reading and presentation of the material heard (read), with the development of writing skills and listening skills.

The second stage (2018-2019) is formative, i.e. it covered the entire second year of university studies. At this stage of learning English, we have integrated special search tasks into the pedagogical process, containing important elements that take into account a creative approach. The necessary competencies were formed in order to study medical texts, with the necessary consolidation of skills in finding relevant information. Careful execution of the tasks compiled by us was able to contribute to the emergence of a belief in the special importance and effectiveness of a creative approach in self-search, in order to optimally solve the tasks set in English classes at medical universities.

**Table 1.** Final distribution of future specialists according to their degree of mastery self-educational competencies in the process of learning English in medical universities (in%).

Groups	Degree of preparedness					
	before the experiment			after the experiment		
	high	medium	low	high	medium	low
Experimental group	18,3	41,7	40,0	38,3	61,7	-
Control group	21,9	52,5	25,6	28,8	56,4	14,8

The third stage (2019-2020) is the main one, covering the third year of study at the university. At the same time, the theoretical and practical competencies previously acquired by students became a necessary basis for the effective implementation of work in relation to students' self-education in the process of their activity on individual creative tasks in English classes. The acquired knowledge of the English language, used in the work on individual creative tasks, was truly meaningful and quite solid. And the fulfillment of the existing tasks could contribute to the development of subjective creative achievements, with mandatory self-assessment and self-correction work in their own self-education, with the formation of initiative independence in self-educational work. Consequently, the emphasis is placed on the formation of a cognitive component in the students' readiness for self-education in terms of real improvement in relation to the motivational and value component with the joint use of the executive and evaluative component.



**Fig. 1.** Scheme of statistical analysis of pedagogical experiment.

The diagram (Fig. 1) shows that the indicators of the upper and middle scores in the experimental group were higher than in the control group.

Based on the results of the analysis of the experimental results, it was found that the control group involved in the research process developed knowledge, skills and competencies in relation to students. For an objective assessment of the situation, a statistical analysis is carried out, only the revealed conclusion confirms that the experimental work was carried out correctly from a scientific, pedagogical, technological and methodological point of view. The methods of Student and Pearson were also chosen for statistical analysis during the experimental period. This method allows you to identify and objectively evaluate the indicators recorded in two groups. In essence, the mathematical-statistical method, as at the initial stage, it was necessary to form variance series at high, medium and low levels, defined as samples recorded in experimental and control groups.

## 4 Conclusion

1. The development of self-study processes in medical universities is considered the most important component of the professional training of modern specialists.

2. In order to effectively organize the development of independent learning processes in medical universities, the content of tasks and tasks performed in English requires interaction with the objectives of teaching specialty subjects. It is necessary to improve the didactic provision of the organization of the educational process regardless of the English language on the basis of modern information technologies.

3. The organization of the process of self-study of students of higher medical educational institutions shows the need to manage and improve the process based on didactic criteria. This, in turn, requires the development of an innovative system for organizing the process of self-study of medical university students.

4. In order to effectively organize the process of independent learning when studying English in medical universities, it is necessary to regularly encourage students' educational activities.

5. The organization, management and development of independent work of students, the development of adaptive learning control options, an innovative model of designing the process of independent learning of students based on a reflexive approach is important.

6. It is relevant to improve the organization of self-study processes in medical universities through the use of information and communication technologies when introducing a credit-modular system into the educational process.

7. Innovative aspects of the processes of self-study of students of medical educational institutions (novelty, individuality, mobile and reflexive approaches) and components (content, form, educational materials and tasks) organized on the basis of a credit-modular system, pedagogical, psychological and ergonomic features of the processes of organizing self-study of students based on interdisciplinary integration, interrelation and the interconnectedness of the components of the independent learning process requires a systematic approach.

8. The expansion of the didactic potential of modular and interactive learning at the preparatory, organizational, motivational and analytical stages of organizing students' independent learning and ensuring the interconnection and interconnectedness of the components of the mechanisms for organizing students' independent work with the help of information technology increases the effectiveness of the process of independent learning.

Based on the results of the study, the following methodological recommendations were developed:

1. It is advisable to include elective courses based on a credit-modular system in the curriculum of medical universities as an optional subject "Medical English".

2. In order to organize independent training of medical university students to master the knowledge of foreign languages within the specialty, it is necessary to systematically conduct webinars, online conferences.

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