

**FUNDAMENTALS OF TECHICS FOR BUILDING OF STUDENTS  
SELF-WORK SKILLS IN PHYSICS IN TECHNICAL UNIVERSITIES**

V.I. HLADKOUSKI, A.I. PINCHUK

*Brest State Technical University*

The article analyzes the causes of mental problems in higher education in the Republic of Belarus. Some activities aimed at forming cognitive activity are considered. The prospects for improving the quality of physics teaching in a technical university are discussed.

Keywords: Mental problems, optimization of personal self-determination process, rating system of knowledge evaluation.

Modern society is moving from predominantly collectivist forms of organizing life to individualistic forms of human interaction. The last decades have brightly highlighted the urgent need to consider the problems associated with a change in value orientations, mentality, motivation of activity and a person's attitude to herself/himself, to other people, the world around us and the fate of the country.

So, according to our representative empirical data, only one in three of the respondents who entered a higher educational institution considers it essential for themselves to perform their professional duties on a daily basis, only for every second a sense of pride in the success of their university, high self-awareness and responsible social behavior are significant. A critically low level of significance for freshmen is the motive of successful studies at a university. At the same time, only less than half of the respondents consider it essential and significant to take practical care of the interests of the state as a whole and consciously fulfill their civic duties. In addition, it is necessary to take into account the almost universal tendency of the clip consciousness of the younger generation, which is expressed in the desire to look at pictures instead of reading text.

Based on the analysis of the situation and the given data, it can be seen that in the context of the reform of society, the practical need to train specialists

in the process of education with a high professional and general culture, independent thinking and developed civil-patriotic self-awareness, a sense of responsibility for their area of work and self-esteem in their inseparable.

Optimization of the process of self-determination of a specialist's personality in a market economy involves the gaining of appropriate conditions by society and the state, as well as changes in approaches to the directions, methods and means of forming the value-semantic foundations of the self-determination process. The priority areas of personality self-determination are the following:

- the need to change scientific and methodological approaches to the substantiation and formation of value-semantic education of university students;
- creation of a specific system of education in a higher educational institution, addressed, first of all, to the individual as the goal and result of education, as the subject of her/his own development;
- using of methods that create conditions for the formation of civic engagement. Dialogue has a positive effect, which creates a psychological space between the subjects of communication, as a mechanism for a person's personal development and reveals his civic potential;
- gaining of certain organizational and social conditions of activity, ensuring stable motivation of the individual, aimed at conscientiously fulfilling her/his duty in the name of the interests of civil society and the state.

The nature of the formation of an individual, of course, depends on the characteristics of the life of society. But at the same time, each person is included in the totality of factors and consequences of life, not only as a "cell" dependent on external circumstances, but as a person who, within certain limits, forms his position and line of life. In other words, a person is a self-determining phenomenon both in his consciousness and in her/his being. Today, for the future specialist, this self-determination proceeds against the background of significant contradictions between such subjects of public life as the individual, the state and society. The existing inconsistency between these subjects is reflected in the system of subjective relationships of the individual. The latter is that combination of internal conditions through which external causes and influences are refracted. It is about how a person relates to certain social phenomena, events, and urgent tasks of the development of society. In this case, the term "attitude" implies not only and not so much the objective connection of a person with her/his environment, but, above all, her/his subjective position in this environment.

The concept of an individual's position plays a leading role in resolving the problem of self-determination. This concept reflects the unity of structure and dynamic tendencies (impact on the surrounding world, its transformation and self-transformation). On the one hand, it mediates the process of self-determination in the interaction of the individual and the social environment, and on the other, it itself acts as a result of this self-determination. Being

socially conditioned, the position of the individual is a “unit” of the relationship between the individual and society as two interconnected systems, contains a set of personal and public interests.

The life position of the future specialist determines his value orientations, place and role in daily activities and vice versa. Therefore, the concept of a person's position is a kind of measure of congruence (consistency) in the field of professional activity. This means that if socially significant values are the basis of the general life orientation, and the direction of activity is recognized and accepted as a vital priority, then the main social and personal interests are also focused in the professional position.

The position of a university student characterizes, first of all, a certain direction of his life position and reflects his attitude to the surrounding reality, which is expressed in professional activity, in realizing the interests and needs of society, in solving urgent problems of social development. A position is a manifestation of the orientation of a personality, the psychological structure of which includes principles, beliefs, motives, value orientations, and the desire for their implementation. Expressed in the conditions of professional activity, they give it a certain direction and contain a moral and ethical aspect.

The process of self-determination is associated with a whole system of personal meanings, the nature of which is found in the spiritual values, ideals and interests of the individual. For the assimilation of values, special activity is required. Its essence lies in the assessment and hierarchization of the values of society, and the result is the acquisition of a personal and semantic status by some of the social values.

When creating a stimulating educational environment, one cannot do without introducing students to the system of values that reflect the wealth of both world and national culture, the core of which in our mentality is the factor of the prosperity of the Belarusian state. Each teacher of the university must do everything possible to ensure that the formation and development of each future specialist as a citizen and patriot of the Republic of Belarus is ensured by harmoniously interacting conditions and factors of organizing the educational environment in higher education in achieving this goal. Only in this case can we count on a successful solution to one of the most important problems of our society.

Since, unfortunately, the overwhelming majority of junior students are not focused on independent goal-setting and self-management in their studies, therefore, at least in the beginning, it is advisable to apply the policy of paternalism to them. To do this, it is enough to apply, for example, one of the rating technology [1].

This is manifested, for example, in the fact that a student is awarded five points only for his presence in practical classes. There are only 2 such classes on the studied topic. Thus, in general, 10 points out of 100 are obtained. Oddly enough, but even such a simple preventive measure has a positive effect on the

activation of students' cognitive activity. This is evidenced at least by the fact that when, during the subsequent reorganization of the methodology for assessing the educational activities of students, it was proposed to remove this item due to its alleged uselessness, both teachers conducting practical classes and the students themselves unanimously opposed this proposal.

Below are some criteria aimed at developing the skills of independent work among students of technical universities. For the correct solution of all tasks of the basic level of difficulty, 20 points are awarded. For the correct solution by students of tasks of medium and high complexity, 10 and 20 points are awarded, respectively.

When completing assignments of different levels of complexity, the teacher takes into account the correctness and completeness of comments during the solution, the degree of justification of the solution, the ability to formulate new problems using subject language, subject intuition, imagination, the ability to find new methods of solution. The defense of tasks of basic, medium and high difficulty levels is estimated at 10, 20 and 30 points, respectively. The final rating score for independent work is calculated according to the table.

Number of points	1-14	15-24	25-34	35-44	45-54	55-63	64-73	74-83	84-95	96-100
Grade mark	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>

Experience of application convincingly shows that the results of such an assessment are quite objective. Each student is able to influence his current rating and is rewarded for this on the exam, which stimulates him to increase his rating. Therefore, the demand among students for tasks of medium and high degree of complexity are significantly improved.

1. Гладковский, В.И. Рейтинговые технологии в учебном процессе высшей школы. – Минск, 2002. – 140 с.

## **ОСНОВЫ ТЕХНОЛОГИИ ФОРМИРОВАНИЯ У СТУДЕНТОВ НАВЫКОВ САМОСТОЯТЕЛЬНОЙ РАБОТЫ ПО ФИЗИКЕ В ТЕХНИЧЕСКИХ ВУЗАХ**

В.И. ГЛАДКОВСКИЙ, А.И. ПИНЧУК

*Учреждение образования «Брестский государственный  
технический университет»*

В статье анализируются причины возникновения проблем ментального характера в сфере высшего образования Республики Беларусь. Рассматриваются некоторые мероприятия, нацеленные на формирование познавательной активности. Обсуждаются перспективы в совершенствовании качества преподавания физики в техническом университете.

Ключевые слова: проблемы ментального характера, оптимизация процесса самоопределения личности, рейтинговая система оценки знаний.