



DEVELOPING STUDENTS' CREATIVE ABILITIES IN PROBLEM SOLVING IN PHYSICS

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Today's modern educational institutions are independent, but at the same time they must create an educational environment in the near future that will meet the needs of all levels of society and industry, the level of intellectual and spiritual knowledge of the developing generation.

Well-known physical pedagogues M Mirzakhmedov, M. Djoraev, H. Juraev, Yu. Pulatov, G. Mahmudov, Sh. Shodiev, T. Usmanov, Sh. Although Turdikulov, S. Qahharov, J. Usarov and others have expressed positive views on the organization of the educational process, improving the teaching of physics in educational institutions in didactic, methodological and pedagogical aspects, the student is creative in performing non-standard laboratory work not included in the school physics program. methodological aspects of the development of its activities are not considered.

In the process of forming new structures of mental activity of the younger generation in physics education, the role of intelligence and ability has been explained in the research work of several leading psychologists. Among them, the research work of V. Davidov and D. Elkonin, B.R. Kadyrov emphasizes the achievement of changes in education and mental development when the content and methods of mental activity are positively and rationally organized.

The following qualitative changes of the psyche can be shown for the student to fully express their abilities: the growth of self-awareness of the student, the improvement of self-management processes, the growth of intellectual potential, the expansion of scientific knowledge, methods and practices, ie the acquisition of methodological knowledge and allows for systematization.

In the process of teaching the student, the elements of preparation for the independent acquisition of knowledge should be considered in terms of how well they are provided FNLIB. In this case, independent learning is considered a key component of education. Teaching, independent reading, is the formation of an independent work method that allows students to fully express their personal characteristics, cognitive and emotional processes in it, its essence and description.

The problem of students' natural abilities has also been studied by psychologists. Among the many theories related to this problem, there are those that link the ability of the younger generation only to society, environment and upbringing, that is, to the conditions, without taking into account the natural basis of the ability in the young generation.

In the scientific and methodological work of psychologists V. Krutetsky, S. Rubinstein, K. Platonov and others, the solution of unfounded aspects of these theories is shown as the independent performance of laboratory work. S. Rubinstein showed that the formation of abilities changes due to external and internal causes.

The experiments of psychologist A. Leontev and his students show that it is possible to expand some human abilities through experience. They were able to shape students' internal auditory abilities to entertain through volume in a specially developed methodical way in a laboratory setting. A. Leontev in his monograph "Problems of mental development" noted that the peculiarities of man are "formed in the process of assimilation of technical objects and phenomena by the individual."

G. Kostyuk considers ability as a stable feature of a person, which is manifested in learning, production or other activities and is a necessary condition for success in this type of activity. Psychologists have distinguished between cognitive and mass abilities. Based on the results of the study, it was considered appropriate to link this problem to the cognitive abilities of students in FNLIB.

According to P. Galperin, the process of formation of mental activity is divided into the following stages: the stage of acquaintance of the student with the problem statement; the stage of understanding the information about the

problem; the stage of describing the problem-solving process; the stage at which each student solves the individual elements of the problem; the last stage is the stage of formation of mental and inner thinking.

The difference between the above steps is that the reader first uses the instructions, and in the subsequent steps moves on to memorization, being able to use popular literature, such as reference books and encyclopedias, if necessary.

In modern psychology, the basic premise concerning the development of abilities is that the ability is formed and developed in an activity that requires the application of certain skills.

From the analysis of scientific-methodical and pedagogical literature, it is known that students have successfully used heuristic, productive, reproductive and special methods in solving problems of learning, cognition and reading. At the same time, it is necessary to disclose the conditions for the formation of students' research skills in solving problems of physical content.

The number of hours devoted to natural sciences (including physics) in secondary school curricula is declining. But the information that needs to be given to students is increasing. Experts have found that technical data doubles every 6 years. So, given this problem, how can more information be given to students in a short period of time?

The use of the following theoretical foundations in solving this problem has a positive effect.

1. Generalization of the teaching system, ie teaching the basics of science to the student by combining secondary ideas around the main ideas (laws, theories and opinions).
2. It is necessary to develop the student's comprehension activities. The main focus is not on imparting knowledge to the student, but on teaching him to acquire independent knowledge. In doing so, the student will independently increase their knowledge of the subject. So, the main focus is to give insights to the topic of non-standard laboratory work to complete the circle sessions in order to make effective use of the 45-minute lesson.
3. Enhancing the student's activity in extracurricular activities in physics (circles, conferences, poetry readings, excursions).

A creative teacher makes a significant contribution to the existence and solution of problematic aspects in a student's work. The teacher discovers unknown problems in science, and the student discovers physical concepts that are unknown to him. In both cases, the novelty is primarily subjective. Because while creating, both the teacher and the student develop their own personality. At the same time, if the teacher contributes to the development of science, society through science in the process of creativity, the student develops his personal abilities through creativity, prepares himself for the future. These two different characteristics of the product of student creative activity are characterized by the social characteristics of teacher and student creative activity.

In the system of interaction between reading and student creative activity, two different relationships are distinguished: student and learning material, student and real being. The first of these relationships occurs between the reader and the characters (e.g., drawing, picture, graph, table, diagram, histogram, formula). Because each learning material is materialized in the form of a formula or a live speech. The second of the relationships takes place between the reader and the real being. The real assets listed in the FNLIB are the academic disciplines.

From the point of view of the relationship, the student's creative activity consists of the following stages:

1. Working with symbols. In this process, the following two types of changes are noted:
 - a) the perception of the characters by the student; b) to understand the changes that occur in students under the influence of conditional signs, the content given by them.
2. Transfer the given content to the appropriate field by means of symbols. In this process, the following two changes are noted:
 - a) the transformation of symbols into mutually relevant content under the influence of the student, to understand which area of text activity belongs to the subject of study; b) changes in the mind of the reader under the influence of conditional signs - comprehension, thinking, analysis and synthesis.

Thus, in didactics, the study of symbols (e.g., diagrams, pictures, graphs, tables, diagrams, histograms, formulas), the description of their properties, the analysis of the relationship between the symbol and the content it represents is a methodological problem awaiting its researchers.

REFERENCES.

1. Mahmudov Y. G., Raimov G. F. Specific psychological characteristics of improving the content of physics education on the basis of solving nonstandard problems //Current research journal of pedagogics. – 2021. – т. 2. – №. 07. – с. 16-18.
2. Fayzullaevich R. G. Methodology of selection, construction and solution of non-standard graphics, drawings, pictures of the department of physics" mechanics". – 2021.
3. Mahmudov Y. G., Raimov G. F. Student's creative abilities in the solution of nonstandard problems in physics and their evaluation //Asian Journal of Multidimensional Research. – 2021. – T. 10. – №. 8. – C. 290-293.
4. Raimov G. F. Maktab fizika darslarida nostandart masalalar yechish metodikasi // Namangan davlat universiteti axborotnomasi –Namangan, -2020. 7 – son. -B.300-304. (13.00.00, №30). ISSN-2181-0427.
5. Mahmudov Y. G., Raimov G. F, Turaev S. S. Solving mechanical problems. //Current research journal of pedagogics. – 2022. – т. 6. – №. 013. – с. 83-95.