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PROSPECTS FOR THE USE OF "SWOT ANALYSIS" IN THE DEVELOPMENT OF CREATIVE ABILITIES OF STUDENTS OF PHYSICS IN SECONDARY EDUCATIONAL INSTITUTIONS

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Annotation
There are both theoretical and practical approaches to teaching physics. Among the practical methods, the solution of physics problems is significant. In the process of solving the problem, along with the education of students, important issues such as the development of creative abilities of students, the education of students are considered.

Keywords: method, pedagogy, physics, mechanics, problem solving,

Introduction

The pedagogical technologies currently used in the education system of the developed countries of the world and developed in didactics are person-centered, reflected in the organization of students' learning activities, the development and management of creative abilities, the attitude to the individual. It should be noted that the demand of the time is aimed at updating the content of traditional education, which dominates the education system, and radically changing the organization of the educational process.

Teaching physics as a general subject in secondary education plays an important role in helping students understand modern techniques and achievements, as well as in shaping their general outlook. Until recently, teaching physics was an in-depth study of the basics of physics. Now it is the task of students to be aware of the achievements of science and technology, to apply their knowledge in practice, to form opportunities for creative research.

The process of scientific and technological progress and the globalization of information are now bringing new and additional challenges to humanity. The rapid growth of information and innovation requires certain changes in the teaching process. Because today's society requires us to cultivate a well-rounded person who is

clever, intelligent and able to creatively solve problems. To achieve this, according to S.E. Comenius and others, the process of developing and nurturing students' abilities should take place in the teaching process.

It is not secret that students' ability to think abstractly, to imagine events and happenings, to solve problems is not up to date. Although physics studies the realities and events, physics has become one of the most difficult subjects for students. The teaching process in general secondary schools lags far behind - there are few opportunities to innovate and introduce. This is because the time allotted for practical and laboratory classes is limited, and in many cases depends on the personal character and parameters of the teacher.

In order to improve the organization and management of students' learning activities, to develop their creative abilities, it is advisable for the science teacher to apply them locally at a certain stage of the lesson. In this case, the new topic is studied first, and control tests, various exercises, competitions, trainings are conducted to monitor and evaluate the knowledge, skills and abilities of students.

Once students have mastered certain skills and competencies, lessons can be conducted on the basis of pedagogical technologies, i.e. at a certain methodological level.

At the special methodological level, all stages of the lesson are organized on the basis of the requirements of pedagogical technology. In this case, the teacher, depending on the educational, pedagogical and developmental goals of the subject, what technology to use, the specifics of the organization of students' learning activities on the basis of this technology, what students need to know in the classroom. study assignments, criteria for monitoring and evaluating students' knowledge.

Therefore, the use of any technology in the teaching of physics depends on the nature, content and other factors of the subject, and the use of certain pedagogical technologies on a given topic is recommended. One such method is the SWOT analysis method. The “swot-analysis” strategy serves to highlight four key aspects of the problem. Through careful study of the topic, students discover the essence of the problem, find the factors that cause them and find solutions.

(Types of mechanical motion. The principle of independence of motion.)

Problem: The motorboat reached its destination on the river in 1.8 hours and it took 2.4 hours to return. If so, how long will it take by ferry?

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Given:	Formula:	Expression:	Solution:	
t_1=1,8 s	S=υt	$S=(\upsilon_q+\upsilon_o)t_1$	$(\upsilon_q+\upsilon_o)t_1=(\upsilon_q-\upsilon_o)t_2$	$(\upsilon_q+\upsilon_o)t_1=\upsilon_o t_2$
t_2=2,4 s		$S=(\upsilon_q-\upsilon_o)t_2$	$(\upsilon_q+\upsilon_o)1,8=(\upsilon_q-\upsilon_o)2,4$	$8\upsilon_o t_1=\upsilon_o t_3$
t_3=?		$S=\upsilon_o t_3$	$1,8\upsilon_q+1,8\upsilon_o=2,4\upsilon_q-2,4\upsilon_o$	$t_3=8t_1$
			$4,2\upsilon_o=0,6\upsilon_q$	$t_3=8\cdot1,8=14,4$ s
				Javob: 14,4 s

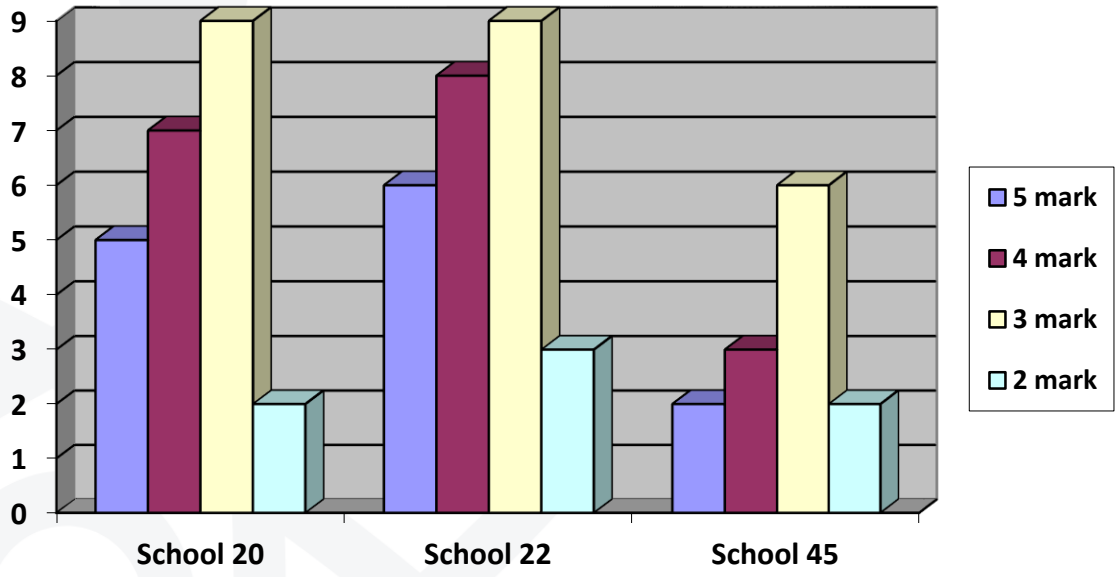
S	If an object participates in several actions at the same time, the resulting velocity vector is equal to the geometric sum of the constituent velocity vectors. I. Velocities are added as vectors: $v=v_1+v_2+v_3+.....+v_n$ In particular, if an object participates in two linear motions at an angle α to each other, the resulting velocity is found as the diagonal of the parallelogram based on the velocity of motion. $v=\sqrt{v_1^2+v_2^2+2v_1v_2\cos\alpha}$ 1.1 If objects move in opposite directions $\upsilon_{nis}=\upsilon_1+\upsilon_2$ 1.2 If the objects move in the same direction $\upsilon_{nis}=\upsilon_1-\upsilon_2$ 1.3 If objects move in a perpendicular direction $v=\sqrt{v_1^2+v_2^2}$ 1.4 If objects α move in direction $v=\sqrt{v_1^2+v_2^2-2v_1v_2\cos\alpha}$ II. The velocity formed when objects participate in two motions at the same time 1.1 If objects move in the same direction $\upsilon_{nis}=\upsilon_1+\upsilon_2$ 1.2 If objects move in opposite directions $\upsilon_{nis}=\upsilon_1-\upsilon_2$ 1.3 If objects move in a perpendicular direction $v=\sqrt{v_1^2+v_2^2}$ 1.4 If objects α move in direction $v=\sqrt{v_1^2+v_2^2-2v_1v_2\cos\alpha}$
W	In imagining the issue, it is important to have a clear idea of what the graph, clear drawing, and motor boat look like, and to know exactly which formula to use, because the above equations are similar.
O	However, we can solve the problem in an optimal way, i.e. by applying formulas 2.1 to 2.2 of the law of resultant velocities. $S=\upsilon t$ From this we understand that the distances of departure and arrival are equal, and at the same time we know that the boat sailed 1.8 hours along the current and 2.4 hours against the current. We know that the velocity formed is one-sided according to the law of velocity $\upsilon_n=\upsilon_1+\upsilon_2$ we use that expression $S=(\upsilon_k+\upsilon_o)t_1$ will be visible. In the second case, we express the velocity generated by the boat floating against the current $S=(\upsilon_k-\upsilon_o)t_2$ will have the same appearance. When a normal boat is sent, the boat is sent to a location determined by the flow rate $S=\upsilon_o t_3$ indicates the arrival of the expression.
T	To be able to work independently and independently in the classroom and outside the classroom from the given solutions and answers, to form and develop thinking and creative skills, to correctly accept external critical conclusions and to find solutions. It teaches students the traditional way of working on issues of this and similar complexity.

	Given:	Formula:	Expression:	Solution:	
	$t_1=1,8$ s	$S=\upsilon t$	$S=(\upsilon_q+\upsilon_o)t_1$	$(\upsilon_q+\upsilon_o)t_1=(\upsilon_q-\upsilon_o)t_2$	$(\upsilon_q+\upsilon_o)t_1=\upsilon_o t_2$
	$t_2=2,4$ s		$S=(\upsilon_q-\upsilon_o)t_2$	$(\upsilon_q+\upsilon_o)1,8=(\upsilon_q-\upsilon_o)2,4$	$8\upsilon_o t_1=\upsilon_o t_3$
	$t_3=?$		$S=\upsilon_o t_3$	$1,8\upsilon_q+1,8\upsilon_o=2,4\upsilon_q-2,4\upsilon_o$	$t_3=8t_1$
				$4,2\upsilon_o=0,6\upsilon_q$	$t_3=8\times1,8=14,4$ s
					Answer: 14,4 s
	Helping students express themselves creatively in answering questions, give a clear idea of a problem when they see a graph or drawing, and help students develop an understanding of a topic will be given.				

The following inferences and conclusions have been drawn from research on the use of new pedagogical technologies in physics education.

As physics progresses to higher grades, phenomena and laws become more complex, and the volume of teaching materials increases. Other similar parameters can have a negative impact on lesson quality, student performance. To this end, the use of new pedagogical technologies in physics education has been found to be effective.

Assimilation indicators:



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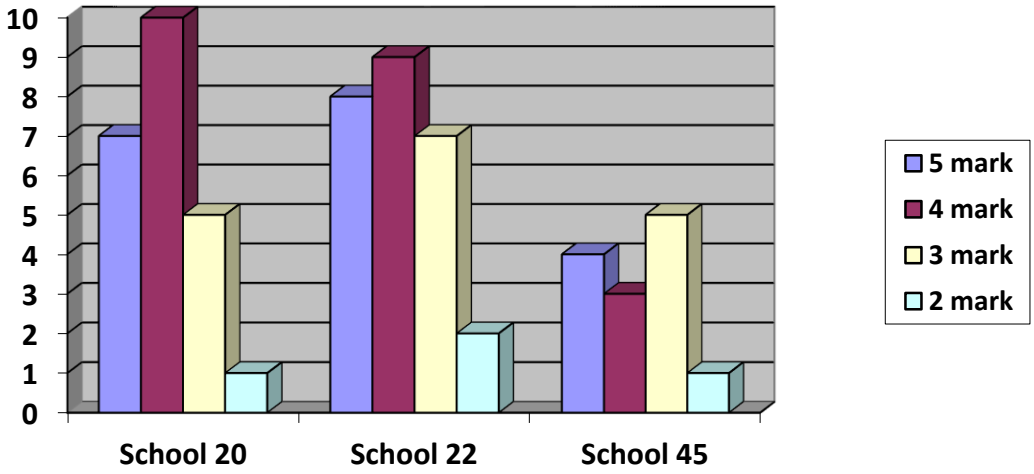
In the traditional way



In the "SWOT analysis" way

Name of institution		Assimilation	
		In the traditional way	In the "SWOT analyzing" way
1	Andijan city 20th school in 10th grade	15 %	21 %
2	Andijan city 22th school in 10th grade	22 %	28 %
3	School No. 45 of Altynkul district of Andijan region is in the 10th grade	18 %	25 %

The results of the analysis obtained from Table 1

The results of the study and the obtained results show that the use of methods that are more relevant to the topic than the traditional type of lesson and plays an important role in development. Accordingly, the method used in problem-solving (SWOT analysis) method allows students to solve the problem independently and correctly analyze the problem, as well as work on the problem, understand the topic and apply this topic in practice.

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