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METHODS OF ORGANIZATION OF PRACTICAL EXERCISES IN PHYSICS LESSONS

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Annotation
The article presents the methods for organizing practical classes in physics courses.

Keywords: school, curriculum, SES, term, mechanics, car, weight, photoeffect, motor, laboratory, issue, experience.

Introduction

In order to carry out practical lessons in the school physics education and carry it out, it is necessary to create wide opportunities for the development of educational-methodical, analysis of scientific literature, the use of materials in the educational process, meaningful and qualitative improvement of educational work, theoretical knowledge, practical skills and qualifications in the student.

SES of higher education is a normative document that determines the specific direction of Bachelor's degree in education or the qualification requirements for a master's specialty, the content of education, the necessary and sufficient level of Bachelor's or Master's training, the level of assessment of the quality of Personnel Training.

In our research work, it was called the development of student creative activities using non-standard laboratory work. This is due to the fact that the evaluation criteria for the development of the creative activity of the student were developed, slightly below the SES requirement.

Although the performance of practical classes in physics lessons at school requires the solution of the following problems:

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1. The use of techniques in solving what issues in theoretical and practical lessons from the materials selected for the performance of practical exercises in physics lessons.
2. The selected materials on the content of the performance of practical exercises in physics lessons take into account the independent thinking of the student, the development of his cognitive abilities and the conduct of logical conclusions.
3. To develop techniques for teaching the student of selected materials on the content of performing practical exercises in physics lessons.

Scientific-research work carried out on the methodology of conducting practical classes in the school of physics, theoretical and pedagogical experience-practical results of the test work, the received scientific conclusions and recommendations should follow the following requirement:

1. The selected materials for practical training in physics lessons the school will be able to find its content in physics science DTs, the program and the curriculum.
2. The response of Science and technology production to the modern development.
3. Non-duplication of selected materials.
4. For students, the absence of terms that are unfamiliar is required.

The content of practical training in physics lessons chosen from physics at school is given in Table 1.1.

Table 1.1.

T/p	Themes	Keywords	Interdisciplinary connection	Test questions
1	2	3	4	5
1.	Determining the weight of a body moving with acceleration from above is a non-standard laboratory work on the subject	A moving body weight gain and loss.	Department of Physics and Mechanics. Car theory	1. What do you mean by weight and gravity? 2. What is the force of gravity on a concave and convex surface? 3. What do you mean by acceleration of free fall? 4. What is the direction of acceleration in an accelerating and decelerating motion?
2.	Non-standard laboratory work on the definition of Archimedes' law.	A bowl of water, rounded butter.	Department of Mechanics. Hydraulics	1. How is the Archimedean force comparable to the gravitational force of a body? 2. How is Pascal's law defined? 3. How is the practical fulfillment of the Archimedean force explained?
3.	Non-standard laboratory work on the topic of pressure and pressure force determination	determine the weight of objects without weighing them.	Department of Mechanics. Hydraulics	1. What is pressure? 2. What does a manometer measure? 3. What does a barometer measure? 4. How is the unit of compressive strength expressed in the SI system?

4.	Non-standard laboratory work on the topic of determining the amount of heat	The amount of water in the snow, a glass, a beaker, a thermometer	Molecular physics. Heat engineering.	1.What is the amount of heat and its unit of measurement? 2. What is the value of the specific melting heat of snow? 3. What is the specific heat capacity of water? 4. What is the internal energy of bodies?
5.	Non-standard laboratory work on the topic of internal combustion engine	Car plug, transformer, plastic plug; battery.	Car structure .	1. How to describe the 1st law of thermodynamics? 2. What is the operating mode of the heat engine? 3. How is the amount of heat defined? 4. How is gas pressure related to temperature?
6.	Non-standard laboratory work to determine the coefficient of surface tension	Water mixed with oil or paraffin, coefficient of surface tension.	Molecular physics. Chemistry.	1. How are molecules arranged in liquids? 2. What are the coefficients of surface tension of water and kerosene? 3. How is the formula for surface tension force expressed? 4. How is the formula for surface tension force expressed?
7.	Non-standard laboratory work on the topic of absolute and relative humidity	Soil moisture, distilled water; measuring cylinders	Molecular physics. Chemistry. Biology .	1. What is moisture? 2. What is absolute humidity? 3. What is the relative humidity of the air? 4. What is a dew point?
8.	Non-standard laboratory work on the topic of work performed on the change of gas volume.	Thermostat, change in gas volume, study of lamp switching system.	Molecular physics. Heat engineering	1. What is the phenomenon of diffusion in gases? 2. What is the phenomenon of thermal expansion in gases? 3. What is the essence of the first law of thermodynamics? 4. What is the function of a thermostat?
9.	Non-standard laboratory work on the topic of transistors	A device made of a transistor, detecting a live wire.	Physics. Electrical department. Radiotechnics	1. What are semiconductors? 2. What is the operating mode of the triode? 3. What is the structure and mode of operation of transistors? 4. How to determine the serviceability of a transistor? 5. What carries current in semiconductors?
10.	Depending on the illumination of the photo element current non-standard laboratory work on inspection	Dependence of current on light, microammeter rechargeable battery with scale up to 100 μA.	Optics. Autorelay.	1. How is a selenium photocell formed? 2. How does the photocurrent depend on the illumination of the photocell? 4. How to change the distance from the bulb to the photocell to double the current? 5. Why is it not possible to change the position of the photocell and the concentration of the bulb fiber during laboratory work?

11.	Non-standard laboratory work on the topic of photo effects	Photocell, light bulb, bell and key.	Optics. Autorelay.	1. Who invented the phenomenon of the photo effect? 2. What physical phenomenon is the photo effect? 3. What is the "red border" of the photo effect? 4. How is the Einstein equation for the photo effect expressed?

In conclusion from observations and experience-test work, the effectiveness of the application of didactic prints with respect to the size and content of materials chosen for the teaching methodology in school physics education meets didactic requirements, theoretically and practically scientifically based. The teacher should choose only the subjects of the science program and the curriculum, systematize them, familiarize the students with the content of these collected materials in theoretical and practical lessons, conduct non-traditional (interactive, evristical, research – problematic, productive, reproductive, intelligent attack, etc.k.) effective use of techniques is also established.

For the criteria for the selection of materials for practical training in physics lessons, the following conditions should serve:

- The material chosen from physics is not only about micro, macro, megoob, but also about the fact that it is simple and the existing objects are natural-scientific;
- Materials on the performance of practical exercises in selected lessons of physics to be a methodical aid in deepening the theoretical knowledge of students, developing practical skills and skills;
- Materials on practical lessons selected from physics will enable students to understand the current state of the art problems of physics and help them to learn and to formulate their attitude towards a positive solution in the future;

When can you successfully use the chosen practical training from physics? If the student is sufficiently acquainted with the scientific basis of innovative educational technologies and technical means, then the history of development of physics and its interest in studying the current scientific landscape are developed in them, it is considered one of the selection prints placed on the content of a new generation of textbooks on the subject of physics.

Materials with such content the possibilities of the student in the teaching of physics are expressed in the following:

1.Provide an opportunity to study the content of modern physics science.

2.To connect the student with theoretical knowledge, practical skills and skills on what are the specific aspects of the content of modern physics.

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