



# Didactic requirements for the organization and implementation of laboratory work.

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## ABSTRACT

The productivity and sorting of the teacher classroom is the potential for the quality of knowledge and the ability to apply the theoretical and practical knowledge in this process. Improving the quality and efficiency of the educational process depends in many cases, which is provided with educational tools and how to use educational techniques. Scientific principles are approved in practice based on the effective conduct of laboratory work on the basis of virtual developments, on the basis of pedagogical and research conducted as a physical practacter.

## Keywords:

It has created a schematic image of the experiment and the laws of movement on scientific grounds during the experiment of the experiment and the event of a scientific basis during the recent event.

Processes that cannot be explained during laboratory work will be explained, then provides a great opportunity to carry out the basis of laboratory experiences, to take into account the individual inclination, interests of students and develop their creative abilities. Laboratory work in the form of a physics praktor is set after the selected course or part of the selected course. In it, students operate inactively on the results of two or three people and uses a special guide.

The work of the Practactum is relatively complex, equipment, technical means is used for them.

The principle of consolence is one of the promising methods of strengthening the knowledge of human rights, its main purpose, to develop experimental skills and skills of future physics teachers through teaching a specific purpose and interpretation of certain measurement.

Education, science and industry Integration, conditions of education, require a teacher to change traditional methods, to introduce new advanced pedagogical technologies. One of the elements of the new technology is virtual lecture developments and laboratory animations. This method is proved in the experiments today that the knowledge and skills he received through computerized learning and preparing for laboratory experiments. This method determines the efficiency of the lecture independently, independently, observation, and observation, and explains the active participation, and find answers in small groups, and find an answer in the training.

The Principia, the Principia, the Principia and Practical Information Before Laboratory classes, provides adequate mastering the theory and physical meaning of the study. The theoretical and practical, experimental information provided on the subject and the content and the content of the content and volume of experimental information will be able to consciently. Students may discuss the group in the group and generalize the results performed in the seminar.

Physics teacher should always increase his pedagogical skills and deliver it to the level of art. The understanding, visual expressions of his opinion should be developed creative approach to education, to express his opinion, to express his reaction to life events.

Requirements for laboratory work:

- Knowing clearly and comprehensively knowledge of the purpose of the experience;
- Makes and understand the progress and elements of the experiment and its elements;
- Select the necessary tools and materials to experience, in the right way

Knowledge of placement;

- Knowing the conduct of monitoring and development of experiments with the help of mathematical and statistical methods;
- Exposure must summarize the results.

It is known that in the education of physics, experiments are given a great place.

Each rule in physics receives the right of law, principle, and rule only after the finding an experimental proof. Students' practice of professionalism is the most important and effective part of the process of teaching the Physics course. Therefore, the development of issues related to the problems of practical training, the development of issues related to the problems of its development is of great importance. The knowledge obtained through laboratory training in physics has a big weight of its knowledge in terms of its characteristics. These opportunities should be widely used in general secondary education.

The main knowledge to provide laboratory experiences are:

- a) to be content with the process of physical phenomena and processes and their laws directly in the experience;
- b) the study of methods of measuring physical quantities of humanitarian physical divisions;
- c) to create a modern measuring instrument to modern measuring instruments;
- g) to get acquainted with mathematical processing in the results of the measurement.

Such knowledge, skills and qualities are taught creative approach to research work, the necessary approach to the experimental

methods, measurement of the values of physical quantities in necessary precision and others.

To achieve this practical goals, creative elements should be strengthened in experimental assignments to the student.

It is known that in the profession of physics Practicum, the issues to students may be in three different views in the overall look:

- 1) The optimal method of measurement of physical size and a student of measuring instrument is presented to the student.

The student is evaluated the accuracy of the resulting magnitude on the basis of errors that contain existing devices and techniques;

- 2) the method of measurement is shown, but the student himself chooses to measure the necessary to measure the necessary tools;

- 3) The student is assigned to the clerical measurement with the specified physical size.

The student chooses the method and a set of methods and measuring instruments that allow the problem well solved.

Hence, laboratory classes plays an important role in the ability and development of the theory and practice, strengthening the knowledge of students, independence, and experimenting with independence mistakes, and to perform measurement errors.

Currently, there are three forms of laboratory classes in physics:

1. Frontal (or gross).
2. The method of making a mixture of laboratory classes.
3. Siccons (or on topic).

Frontal method.

Each student will have the opportunity to perform a specific object on the topic. This method facilitates the organization and transfer of the training and management of students' activities during the training.

The frontal method is required to contain multiple devices in laboratories, and it is required to conduct conditions for laboratory rooms and all students to perform the same meaningful and uniform tasks.

In addition, the uniformity of laboratory work is difficult

The absorption of students limits thinking skills and allows the first knowledge of primary courses to be thoroughly formed.

From this method, physics can be used during the early stages of laboratory classes. Method of making a mixture of laboratory classes.

Any student performs a separate laboratory work, regardless of the lecture or not. The content of these cases also varies and the method of doing.

The lack of laboratory and lecture topics teaches students to work independently of the relevant literature, thinking

Activates the processes.

But observations have shown that this method in higher hours on higher hours to conduct laboratory classes will sometimes create problems.

In particular, the lack of time is sensed for students to work independently.

However, this method leads to good results in special disciplines taught in the high courses of higher education institutions.

#### The method of cycling.

In this way, laboratory work is structured by combining the various measurement methods of the Physics Course, which allows you to adjust the topics of laboratory and lecture, to use effective options in the Greece of laboratory work.

The process of monitoring laboratory work is mainly implemented in the following three ways:

1. Demonstration;
2. Virtual;
3. Experimental.

These methods will always complement each one and need to be based on their interactions and the outcome model based on them. The demonstration method was observed in the high school and secondary special vocational education of education, and the topic in the teacher, in the experiment of the lecture session, and based on the overall conclusion based on the result. The teacher's demonstration show of laboratory work on the program in the lower stages of education is one of the factors that produce the sense of urinary students to study the experimental results of physical events in the future. The experimental method is forming the basis of the practices of the practice, mainly the scientific, theoretical concepts and rules

obtained in lecture by confirming the method of experimental training.

It must be based on the sequence of the experiment and the result during the practicum training and the resulting outcomes, it must be based on the foundations and conclusions.

After each laboratory work is done, the student must submit this work to the teacher.

Such a report can be carried out in the following ways:

- a) programmed control;
- b) special interview with each student;

c) conducting a seminar with group students in the form of a seminar. Laboratory trainings include the following three stages that are independent by students:

#### a) Preparation for laboratory work.

Higher understanding of the physical size that needs to be collected and studied in the manuals based on the proven case, the provided work.

Also, when you get acquainted with the experimental device, its organizing elements, measuring instruments, their accuracy, ready to be prepared for the first questions to be held with the teacher.

#### Above

Thoughts should be displayed in the laboratory book and formed appropriate tables;

#### b) experimental at laboratory training.

After allowing the student to do the teacher, it is perfectly acquainted with the laboratory desk, place the instruments of the tools, to help you learn to instructions. In accordance with the safety technology, all measurements are conducted in independent, high enough high-quality, write physical quantities in the laboratory book that is the same system;

Calculate one of the results of experience to the end, showing the teacher, achieving the same sign in the notebook;

#### c) establish a full report on the work done and prepare for the teacher.

Writing measured, calculated quantities and their measurement errors, if necessary, draw graphic ties on mublmet paper. Remembering laboratory work and based physical process once more, the method of experimentation, analyzing the results and expressions on its improvement. These concepts and ideas will be

reflected in the report prepared for work. Once laboratory works on a particular topic, under the supervision of the teacher, the work will be discussed and tested in detail.

Hence, laboratory classes plays an important role in the ability and development of the theory and practice, strengthening the knowledge of students, independence, and experimenting with independence mistakes, and to perform measurement errors.

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