

## MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL



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#### THE METHOD OF EVALUATING THE RESULTS OF THE EDUCATIONAL PROCESS IN TECHNOLOGICAL EDUCATION IN LABORATORY CLASSES

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#### ABOUT ARTICLE

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**Abstract:** In the article, the assessment of the results of the educational process in technological education is described on the basis of the assessment of the reliability, efficiency, and criteria of the laboratory exercise.

#### INTRODUCTION

The method of evaluating the results of the educational process in technological education is related to the practical confirmation of the acquired theoretical and practical knowledge, skills, and qualifications of the students, and it is a system based on checking the results required by the program instructions of the students. and it is mainly aimed at the development of education of students through executive activity and provides the achievement of the expected results of the pedagogical technology, which students should be able to master and appreciate when leaving the teaching period. In this sense, the evaluation method is a complex process of cooperation between the teacher and the student in order to achieve the educational goal.

#### MATERIALS AND METHODS

It can be seen that the educational process is a method of evaluating the results.

- Compliance with the purpose of education;
- Application of methods that give results;
- it is necessary to ensure the appropriateness and cost-effectiveness of the application in order to solve the defined criteria tasks.

Criteria for evaluating the effectiveness of the educational process:

- appropriateness and cost-effectiveness of its application to achieve the specified result;
- ease of use and mastery;
- it is necessary to be able to ensure not only the best results, but also the reliability of their achievement.

Below, we will try to give comments on the assessment of laboratory training.

All laboratory sessions are divided into two groups:

Demonstrator.

1. It can be divided into those in the description of research.

The practical-laboratory works belonging to the first group are related to the practical confirmation of the laws of the students' theoretical knowledge, it is intended to reveal the knowledge acquired by the student in the theoretical training or approximately the essence of this or that process. It is based on checking the result to be determined as required by the instruction and is mainly aimed at developing the student's performance (education). The necessary skills and competence of the students to formalize the essence of the observed phenomenon during the performance of such laboratory work, the most important thing is that they gain confidence in the real practical importance of the theoretical knowledge they have acquired.

The second group of practical-laboratory training will be in the description of research. Taking into account the level of knowledge and training of the students, the teacher organizes the lesson with the aim of finding one or another law, or any physical-mechanical properties, quantities and phenomena that are unknown to them.

This type of practical-laboratory training is relatively serious and complex, and sometimes requires the improvement of laboratory equipment, the use of additional equipment, and the ability of the teacher to theoretically predict the effectiveness that can be obtained in advance. For this, the teacher must have sufficient experience, pedagogical skills, initiative.

Practical-laboratory training of this description not only leads to the improvement of students' knowledge and practical skills, but also forces the teacher to work on himself, to search for news and to establish a strong relationship with students, significantly increases the effectiveness of the educational process.

## **RESULTS AND DISCUSSIONS**

It cannot be said that all of them have acquired the same knowledge by showing activity in performing work in laboratory training and evaluating students' knowledge. Especially when the laboratory works are performed in a brigade manner, it cannot be said that all members of the laboratory will actively participate in the work. Depending on the situation, some of them participate as passive observers. The disadvantage of performing laboratory work in the brigade method compared to the method of individual work is that, what should be done in such cases? In our opinion,

in such cases, the method of correct assessment of students' knowledge is to give them separate points for each activity, that is, to use the quantitative rating method and graded (differential) assessment.

Criteria for students' assessment of laboratory work;

1. Level of theoretical knowledge;
2. Rules of technical safety;
3. Rational assembly of the scheme;
4. Being able to choose equipment and equipment correctly and appropriately;
5. Using the scheme based on technical information;
6. Quality of experience;
7. Calculation accuracy;
8. Formalization of the report;
9. Attitude to work;
10. It can be said that the essence of experience consists of statements.

As above, if the requirements (criteria) for evaluating students' cognitive activity from the laboratory work consist of 10, its complete fulfillment will be 20 points, and this will be equal to 100%.

The above students are represented in the table below (Table 1).

**Table 1**

Main Students order	1	2	3	4	5	6	7	8	9	10	Total points	%
Students Activity Bali	2	2	1	2	0	2	1	0	2	2	14	70

This table is filled in on the spot during the student's knowledge assessment. In the above example, the student's knowledge, skills and qualifications obtained from laboratory work are generally  $B = (14 * 100) / 20 = 70\%$ . If these students perform 85% and above, grade "5" (excellent); If it is in the range of 65÷84%, it is worthy of a "4" (good) grade, and if the requirement is fulfilled by 45÷64%, it is worthy of a "3" (medium) grade.

When using such a scheme of quantitative assessment of student knowledge, a section of the scheme of Table 1 is provided in the report book of each student. Depending on the level of the student's response to the requirements, the student's knowledge is checked directly during the test interview by filling out the table. It takes about 2-3 minutes.

In order to implement the rating system of quantitative assessment of such students' knowledge, the teacher thoroughly familiarizes the students with the content, essence and rules of this method in the first laboratory lesson. For this purpose, the related table and scheme of requirements on the exhibition board, prepared in advance, will be used in the cabinet. The table in the report book makes it clear to the student himself which activities each student has "completely" or "partially" completed

or not, and is an important motivation tool in the future to eliminate these observed deficiencies. This, in turn, creates a great opportunity for the teacher to give each student the right advice on which activity should be improved first.

On the basis of the above, it is possible to come to such a conclusion based on the practical knowledge, skills and qualifications, the situation, and the didactic opportunities provided for in the laboratory training.

Students conduct experiments under the guidance of the teacher and according to a pre-prepared plan, and in the process receive and understand new knowledge.

The main tasks of the style are to teach and develop, and students:

- Providing students with skills and qualifications for working with equipment;
- Check what is known and choose independent research methods;
- Acquisition of practical skills: measurement and calculation: provides opportunities to process the results and compare them with the previous one.

### **CONCLUSION**

It should also be noted that the method of evaluating students' activity in the laboratory method is quite complicated. This method requires careful preparation of students, sometimes expensive equipment. Using it requires a lot of effort and time. In this sense, before the experimental method is planned, it is necessary not to forget that it is possible to achieve the assessment of students' knowledge with other simpler, more economical methods and methods.

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