

**ИЗУЧИТЬ СОДЕРЖАНИЕ И ЭФФЕКТИВНОСТЬ
ПЕДАГОГИЧЕСКИХ ЭКСПЕРИМЕНТАЛЬНЫХ РАБОТ
ПОДГОТОВКИ СТУДЕНТОВ К ПРОФЕССИОНАЛЬНОЙ
ДЕЯТЕЛЬНОСТИ НА ОСНОВЕ КЛАСТЕРНОГО ПОДХОДА**

TO STUDY THE CONTENT AND EFFECTIVENESS
OF PEDAGOGICAL EXPERIMENTAL WORK PREPARING
STUDENTS FOR PROFESSIONAL ACTIVITIES BASED
ON THE CLUSTER APPROACH

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*Разработка анализа и рекомендаций по развитию практических
навыков студентов на основе кластерного подхода.*

*Development of analysis and recommendations for the development
of practical skills of students based on the cluster approach.*

Ключевые слова: кластерный подход, эффективность, экспери-
мент, исследование, уровень.

Keywords: cluster approach, efficiency, experiment, research, level.

INTRODUCTION

A cluster is understood as a certain system, but this system is unique, the elements added to it improve the operation of this system, but the removal of any element does not lead to the destruction of the system. Cluster systems are characterized by performance, stability and can be easily upgraded, upgraded and expanded in various ways. The advantage of the cluster is its global scale, openness, flexibility and ease of management.

The need to turn to the cluster approach lies in the priority of the cluster as a form of organization with the characteristic of improving the efficiency of the vocational education system and combining the activities of stakeholders. Thus, the cluster represents the role of participating entities united by a common goal in certain contractual relations and the management of their activities.

We list the following main components of the cluster approach:

- the presence of a common goal;
- the existence of the legal basis for the activities of the unity of subjects;
- development of mechanisms for interaction of entities united in a cluster;
- management of the implementation mechanisms of the cluster approach;
- adaptation of technologies for implementing the cluster approach with common goals.

RESEARCH IS A SCIENTIFIC EXPERIMENT

It is necessary to carefully inspect the installed component, test it, get approval, conduct a search, find and implement new tools and capabilities in problematic and areas in need of improvement, and give scientific conclusions.

The purpose of the experimental work of our research is to develop the methodological foundations of the cluster approach of students of higher educational institutions.

How is the result of experimental work measured? Ultimately:

- what knowledge, skills and abilities did the student acquire?
- to what extent can the acquired knowledge and skills of the student meet the requirements of educational standards?
- development of the ability to work independently, to work with additional resources, the formation of an independent component;
- with an increased ability to discuss, discuss, think, etc.

The use of new information technologies during experimental work will give very positive results. Experimental work was carried out in groups with the same level of training, conditionally defined as “experimental group” and “control group”. The experiments were conducted on the same material by two different methods, and the level of

development of practical skills in both groups was compared using questionnaires and tests.

The content of the educational subject, conditions, training, methods were also selected, questions and answers were collected, the results of pedagogical supervision, criteria for monitoring and evaluating students' knowledge.

High (excellent) – having the opportunity to use innovative technologies of educational material in the classroom, search, find, analyze information, increase the level of education, perform tasks in a timely manner.

Average (good) – awarded for the ability to use innovative technologies of educational material, the development of the level of professional competence in the search and finding of information, the completion of tasks in a timely manner.

Low (satisfactory) – the ability to use innovative technologies of educational material, deviation from the goal when searching for information, an increase in the time required for searching, low ability to perceive when analyzing, the level of professional competence has not changed.

The results of the survey, which were conducted to develop the practical skills of university students based on the cluster approach, were analyzed in terms of quality and quantity.

As a result of the activities on the development of practical skills of university students based on the cluster approach, during the experimental work, the levels of development of professional competence of students were determined on the basis of established criteria and levels. Then all the results were summarized and subjected to mathematical and statistical analysis. The results of pedagogical experiments were processed in Microsoft Excel and MathCAD programs.

In order to determine the effectiveness of teaching science based on new pedagogical technologies, the results of final questions, independent work assignments and summative exercises of students were analyzed in qualitative and quantitative terms.

To determine the validity of pedagogical experiments and the effectiveness of the developed methodology, it is advisable to develop using the criterion χ^2 -chi-squared mathematical statistics (fig. 1).

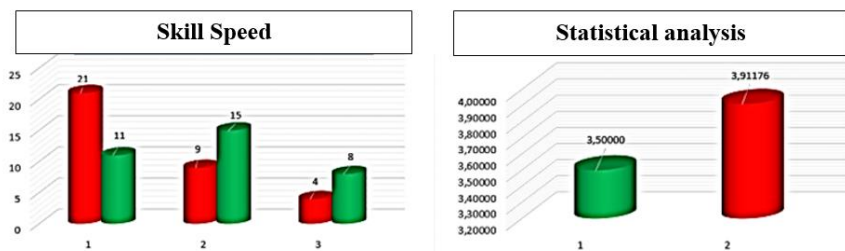


Figure 1 – χ^2 – processing of experimental work according to the chi-square criterion

CONCLUSION

The experimental work showed that the methodological work carried out in the experimental group was effective compared to the control group.

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