DEVELOPMENT OF STUDENTS' CREATIVE SKILLS IN THE PROCESS OF CONDUCTING CHEMISTRY LABORATORY WORKS

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Abstract: *This article examines the characteristics of competence, the processes of conducting laboratory work, their specifics and significance for the learning process, and shows the difference between laboratory work and practical work.*

Keywords: *competence, creative skills, laboratory and practical work, composition of key competencies, way of organizing the learning process.*

Currently, in general education, one of the main tasks of the learning process is to develop students' creative abilities in the process of conducting laboratory work in chemistry. Considering the characteristic of competency-based approach, it is indicated that for the formation of a "competent graduate" in all spheres of professional education and life activity, it is necessary to apply new teaching methods, technologies that develop, first of all, the cognitive, communicative, and personal activity of students.

The composition of key competencies brings to the forefront the student's competence in the field of independent cognitive activity, and this is due to the fact that educational and cognitive activity is leading in the learning process. [2]

The process of conducting laboratory work in the subject "Chemistry" contributes to the formation in students of such elements of general cultural and professional competencies as the ability for cognitive activity; the ability for abstract and critical thinking; the ability to use the laws of natural sciences in solving professional problems.

The objects of professional activity of graduates are environmental hazards associated with human activity and natural phenomena. In everyday life, every person constantly comes into contact with various chemical substances and materials and even unconsciously subjectes them to various chemical and physicochemical transformations. It is important to know how these substances affect humans and the environment. In addition, the contribution of knowledge in the field of chemistry to the organizational and managerial activities of graduates, namely, to training subordinates in the requirements of environmental safety, is important [1].

Laboratory work - as one of the types of independent practical work, activates the learning process, facilitates the perception of chemical concepts, ensures the accessibility of natural facts, which are subsequently constantly used in the study of substances.

Laboratory work is of great importance in the educational process, as it allows for the implementation of important principles of didactics - the activity approach and the humanization of the learning process - to a greater extent. A student transforms from an object of learning into a subject of their own activity. It is the student's subjective position that is a characteristic feature of developmental learning.

Application of laboratory work for the development of general educational skills in chemistry lessons is not a new topic. Many scientists and methodologists worked on its development. [3]

Laboratory work as a way of organizing the educational process has become widespread in modern school. These works were a variation of the individualized learning system. This system was called laboratory. Instead of traditional classrooms, chemistry classrooms (laboratory classrooms) were established in the school, where each student studied individually, receiving assignments from the teacher and using their assistance. There was no class schedule, collective work was conducted for one hour a day. In the rest of the time, students studied the material in the order of individual work, reporting on the completion of each task to the teacher of the corresponding subject. [4]

Motivation to study fundamental subjects can be gained by students only when they see the professional significance of the learning material. Laboratory work is pedagogically multifunctional. It occupies a leading place in the system of chemical visual aids. In educational cognition, it plays the role of an object of cognition and a method of mastering scientific knowledge; it is the basis for developing students' practical skills in working with substances and materials, and contributes to the development of the perceptive sphere of personality, visual memory, and observation [2].

To ensure the implementation of educational goals with high effectiveness, one of the tasks of teaching chemistry is to find such pedagogical methods that would allow for the development and improvement of students' cognitive abilities. Long-term practice in conducting laboratory classes has shown that the group solves the assigned tasks more effectively than each of its members individually, because students do not have sufficient practical skills to conduct laboratory work.

The method of teaching in classrooms differs in that the classroom is divided into several groups - teams, such a teaching method implements three organizational forms (individual, paired, group, of which the group form is the leading one) [3].

In each team, there are students with high, medium, and low levels of learning capabilities, and the activity of each student leads to the joint performance of work and the use of methods of mutual control. The educational value of organizing such a form of work lies in experiencing it together, in forming one's own point of view.

It is in group activity that a reflective analysis of the learning outcomes of studying the discipline takes place, creating an opportunity to look at oneself, one's activities from the outside, to understand what one is doing and for what purpose. [5]

In conclusion of this scientific work, we can draw the following conclusion: one of the problems that the teacher solves when organizing group learning activities for students concerns ensuring a high degree of activity for all group members. It should be noted that this method can be practiced only if the theoretical material is pre-examined and the students are thoroughly acquainted with the rules of work in the chemical laboratory and strict adherence to safety regulations.

Literature:

1. Gibadullina H.V. Organization of laboratory classes in the discipline "Chemistry." Development of education, pedagogy and psychology in the modern world/Collection of scientific works based on the results of the international scientific-practical conference. Voronezh, 2014. 138 p.

2. Orzhekovsky P.A. Students' Creativity in Practical Chemistry Classes / P.A. Orzhekovsky, V.N. Davidov, N.A. Titov, N.V. Bogomolova. - M.: ARKTI, 1999. - 152 p.

3. Bekturganova Z. et al. Problem situations as a means of improving experimental knowledge in the process of teaching chemistry in secondary schools //E3S Web of Conferences. EDP Sciences, 2023. - Vol. 389. - P. 08006.

4. Titova I.M. Teaching Chemistry. Psychological and Methodological Approach / I.M. Titova. - SPb.: KARO, 2002. - 204 p.

5. Bekturganova Z. K. PROBLEM-INTEGRATIVE OF THE TEACHER OF CHEMISTRY METHODOLOGICAL TRAINING IN TEACHING //European Journal of Research and Reflection in Educational Sciences. - 2023. - Vol. 11. - No. 3.