

PEDAGOGICAL SCIENCES

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EXPERIENCE OF IMPLEMENTATING THE RATING SYSTEM FOR ASSESSING THE KNOWLEDGE OF TECHNICAL SPECIALTY STUDENTS IN TEACHING OF "GENERAL CHEMISTRY"

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Abstract. The article considers the importance of quality training of future specialists in technical specialties in higher educational institutions. The peculiarities of the implementation of the rating system for assessing the knowledge and skills of students of technical specialties in the process of studying the discipline "General Chemistry" were analyzed. It was determined that the rating system, as a progressive method of monitoring knowledge, skills and abilities, creates conditions for students' motivation to education, activates cognitive activity and improves learning achievements. Attention is focused on the fact that the rating system for evaluating the quality of education is a successful replacement for traditional technologies of teaching students of technical specialties, but needs further improvement.

Keywords: educational process, higher professional education, educational and cognitive activity, students of technical specialties, knowledge control methods, rating system.

Due to the fact that significant changes have taken place in society, higher professional education has faced with the problem of high-quality training of future

specialists in technical specialties. The majorities of graduates of higher education institutions do not meet the requirements of employers, do not have practical skills and formed competencies necessary for future professional activities.

Without appropriate level of intellectual development, it becomes difficult to solve production tasks, where a specialist must be proactive, ready to make complex non-standard decisions. Therefore, reforming modern higher education involves the development and implementation of new educational systems and technologies, approaches, methods and forms of learning.

The National Technical University “Kharkiv Polytechnic Institute” provides training for future bachelors in the following technical specialties: 133 – “Industrial Mechanical Engineering”, 131 – “Applied Mechanics”, 141 – “Power Engineering, Electrical Engineering and Electromechanics”, 142 – “Energy Mechanical Engineering”, 273 – “Railway transport”, 274 – “Road transport”. General chemistry is one of the fundamental disciplines and is studied by first-year students during one semester. Training plans for future specialists in technical specialties are developed in accordance with the ESTS scale for assessing students' knowledge and skills.

Today, when the student enrolment has different age categories and different levels of preparation in general chemistry, it becomes very important to find an opportunity to take into account the abilities and educational aspirations of talented students who want and know how to learn. First-year students have practically no motivation to study chemistry for various reasons. Therefore, the teacher's professional and personal qualities need support. It is necessary to create a creative environment for intensification of educational activities of students, conscious, independent acquisition of knowledge by them. One of the types of students' motivation to study can be attributed to the progressive method of control, as a means of assessing knowledge, abilities and skills, and the academic rating of students.

At the department of general and inorganic chemistry, in order to support the activities of students to ensure the improvement of cognitive activity, a rating system for evaluating their success was introduced into the educational process. It provides for constant control of knowledge, abilities, skills acquired in the process of study,

objectivity of the final assessment from a specific discipline, which allows achieving more active work of students during the semester. The rating system is the result of students' work throughout the semester. Students must follow the study plans. Forms of knowledge control are determined by training plans for specialists in specialties.

The main methods of control are: verification of independent classroom work, control works, oral questioning of students, performance and defense of laboratory work, verification of an individual calculation task, exam.

In the fall semester of the academic year 2022/2023, according to the schedule of the educational process and the work plan of the discipline, the lecturer gave 14 lectures. Attendance at lectures is valued at one point. Studying lectures during the semester $1 \times 14 = 14$ points.

Current control, which is carried out by the teacher directly during the performance of laboratory work or practical classes, is very important. Laboratory works include tasks that illustrate the role of chemical knowledge in professional activities. This is an experimental confirmation of the learned theoretical provisions from the discipline of general chemistry, the transformation of knowledge into skills and abilities, familiarization with the methodology of conducting research, mastering the means of activity necessary for the chosen future professional activity. According to the plan for conducting laboratory works and practical classes, 12 laboratory works and theoretical-practical classes were conducted during the semester. The defense of laboratory works and the performance of theoretical tasks of one class were assessed at 3 points ($12 \times 3 = 36$ points). At the end of each lesson, students are informed about the received points. Absences of classes are taken into account in relation to the rating assessment, taking into account the completion of all tasks provided for in the work program of the discipline.

During the semester, it is necessary to independently complete two control papers. The first control paper included the questions of the first chapter "Structure and reactivity of chemical compounds, thermodynamic and kinetic characteristics of processes". Independent answers had to be completed in the second control paper of the section "Electrochemical phenomena and processes". The maximum assessment

of one control paper is 20 points. (Two control papers $20 \times 2 = 40$ points).

The rating assessment also includes the completion of an individual homework assignment. The content of the task includes issues related to future professional activity: chemical thermodynamics, chemical kinetics, electrochemical processes, hydrolysis of salts, electrolysis. An individual calculation task is worth 10 points.

The final rating is determined in points according to the national ECTS scale, as the sum of all indicators based on the results of all types of students' educational activities during the semester. The maximum number of rating indicators points is set at 100 points. Correspondence of the final rating in points to the national grading scale: excellent A – (90-100 points); very good B – (82-89 points); good C – (75-81 points); satisfactory D – (64-74 points); sufficient E – (60-63 points).

It is aimed at the quality of training of future specialists, stimulates learning and creates a favorable environment for the activation of the educational process. The rating system for assessing the quality of achievements of students of technical specialties is a successful replacement for traditional learning technologies, but it needs further improvement.