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COMPETENCE-BASED APPROACH TO TEACHING CHEMISTRY

Annotation. *One of the main requirements for a current specialist is to be competent, and in this regard, one of the main tasks of the education system is the creative search for knowledge associated with the development of mechanisms for implementing a competence-based approach to specialized and public (non-core) education in secondary educational institutions. The article discusses the competency-based approach to teaching chemistry.*

Key words: *competent, competence-based approach, educational process, knowledge, students.*

Анотація. *Однією з головних вимог до сучасного спеціаліста є компетентність, і в зв'язку з цим одним із головних завдань системи освіти є творчий пошук знань, пов'язаний з розробкою механізмів реалізації компетентнісного підходу до спеціалізованої та державної (непрофільної) освіти в середніх навчальних закладах. У статті розглядається компетентнісний підхід до викладання хімії.*

Ключові слова: *компетентність, компетентнісний підхід, освітній процес, знання, студенти.*

Introduction. The Message of the President of the Republic of Tajikistan, Leader of the Nation, respected Emomali Rahmon, to the Majlisi Oli of the Republic of Tajikistan, titled «On the Main Directions of Domestic and Foreign Policy of the Republic», *states*: «We must create all necessary conditions to improve the level and quality of education at all levels. In this process, it is essential to further increase the responsibility of parents, the public, and teachers. In this direction, institutions of a new type - presidential schools, lyceums, and gymnasiums - have been leading since independence. Annually, more than 97% of graduates from these institutions are admitted to higher educational institutions both within the country and abroad. The Ministry of Education and Science needs to widely apply the initiatives and experience of these schools to improve the level and quality of education in all educational institutions of the country. To further enhance the quality of education, in last year's Address to the Majlisi Oli, the years 2020-2040 were declared the «Years of Study and Development of Mathematical, Exact, and Natural Sciences in the Field of Science and Education». To implement this initiative, the Government of the country adopted an action plan for 2020-2025. The Ministries of Finance, Education and Science, the National Academy of Sciences, and other ministries and committees with educational institutions under their jurisdiction are instructed, together with the heads of regions, cities, and districts, to prevent negligence in the implementation of this decision. They must take urgent measures to equip classrooms for mathematical, exact, and natural sciences and report to the government on the results of their work» [1].

Today, alongside technological advancements and the emergence of new professions in the labor market, the demand for skilled entrepreneurs is growing. In the context of social changes and the rapid development of society, one of the new socially significant concepts is *competence*. One of the main requirements for today's specialists is competence, and in this regard, one of the primary tasks of the education system is the creative search for knowledge, coupled with the application of a competency-based approach in general education institutions.

At the same time, one of the main outcomes of educational activities is the development of competencies among students in general education institutions. These competencies are divided into basic (or key) competencies, interpersonal competencies, and professional competencies. Today, educational institutions must prepare students for future life in a rapidly evolving society. Students should be equipped to handle new situations and adapt to changes in their future lives. They must possess qualities such as creativity, mobility, and dynamism, which are essential for their future professional activities.

In addressing these challenges, the modern education system should foster *professional universalism* - the ability of individuals to adapt their lifestyles and directions of activity. Based on the above, most countries are revising their development strategies in the field of education to prepare qualified, competitive, and, most importantly, competent specialists who meet the demands of the labor market.

Tajikistan's Efforts in Education Reform.

Tajikistan, along with other countries, is taking measures to improve the quality of education to meet international standards. The Founder of Peace and National Unity, the Leader of the Nation, the President of the Republic of Tajikistan, respected Emomali Rahmon, has emphasized the development of the education system and the implementation of education reform programs. He notes: *"Only those countries will achieve great success that pay close attention to improving the level of education in society, introducing new technologies, and adopting modern methods."*

One of the goals of the National Strategy for the Development of Education in the Republic of Tajikistan is the transition from traditional educational methods to a competency-based approach. In this regard, it is planned to develop new professional standards and training programs based on this approach. However, in the early stages of transitioning from one system to another, there are always challenges in adapting to the new system. Therefore, in teaching chemistry, it is necessary to develop a methodology that fosters specific subject competencies.

Students require significant time to develop reading and writing skills, solve case studies, and tackle problems. If the learning process is divided into very short periods, it will be difficult to achieve effective learning outcomes. For an effective knowledge acquisition process, improving writing and reading skills, understanding meanings, and enriching vocabulary, two to three hours of continuous learning per day are insufficient. Of course, for the continuous improvement of competencies, the administration of educational institutions must first ensure an effective class schedule. This point is crucial at all levels of education, particularly at the primary education stage.

The purpose of the article is to examine the competency-based approach to teaching chemistry.

Research Results. Principles of a Competency-Based Approach in Chemistry Teaching.

There are several fundamental principles for applying a competency-based approach to chemistry teaching. The activity-based nature of learning is primarily reflected in the requirements for the level of training of graduates:

1. **Acquisition of specific cognitive actions** related to chemistry, such as recognizing and identifying (including through experiments) the composition of substances, types of chemical compounds, types of chemical bonds, types of chemical reactions, etc.

2. **Understanding the relationship** between the composition, structure, and properties of substances, as well as the general properties of inorganic and organic substances.

3. **Knowledge of chemical laws**, including changes in the properties of chemical elements, the nature of chemical bonds, methods of their formation, and the laws governing chemical reactions.

One of the goals of studying chemistry is to develop specific skills [2 - 4]. Activity-based teaching methods enhance the applied and practical significance of chemistry. This means that it is not enough to know the methods; students must be

able to apply them. Students should not only memorize formulas but also be able to use them to solve problems.

One of the necessary conditions for developing competence is the use of non-standard tasks that require students to solve problems using familiar or new information. This approach creates and develops situations in which competence is realized as a personal property.

Problem-Solving and Research Activities. The problem presented in a task is the starting point for a student's thinking, the basis for their interest in chemistry, the core of developmental learning, and a prerequisite for the conscious mastery of the subject. Problem-solving activities, in which students are actively involved, are an essential element in mastering the subject and developing basic skills.

Thus, only through joint activities with the teacher—such as problem-solving and research—can students acquire new knowledge, skills, and behaviors, form new competencies, and improve existing ones. It is also necessary to select teaching methods and techniques that are sufficient for the formation of both traditional and new competencies, depending on different situations and educational goals.

Conclusions. In conclusion, the joint efforts of teachers and students in problem-solving and research activities enable students to acquire new knowledge, skills, and behaviors, as well as to form and improve competencies. It is essential to choose teaching methods and techniques that are appropriate for the formation of both traditional and new competencies, depending on the specific educational context and goals.

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