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COMPETENCY APPROACH IN TEACHING CHEMISTRY

Annotation: *This article presents the effectiveness of the use of the competence-based approach in teaching chemistry. The main goal of applying the competence-based approach in education is aimed at creating a mechanism for applying theoretical knowledge in practice, ensuring the process of personal formation, adaptation to new conditions, the development of self-defense, self-education, self-improvement and other features that contribute to the development of a perfect personality in the following areas.*

Key words: *competence, competence-based approach, chemistry, technology, students.*

Анотація. *У статті представлено ефективність використання компетентнісного підходу в навчанні хімії. Основна мета застосування компетентнісного підходу в освіті спрямована на створення механізму застосування теоретичних знань на практиці, забезпечення процесу становлення особистості, адаптації до нових умов, розвитку здатності до самозахисту, самовиховання, самоосвіти. вдосконалення та інші особливості, що сприяють розвитку досконалої особистості в наступних сферах.*

Ключові слова: *компетентність, компетентнісний підхід, хімія, технологія, студенти.*

Introduction. The founder of peace and National Unity, the Leader of the Nation, the President of the Republic of Tajikistan, dear Emomali Rahmon, in his

message to the Majlisi Oli, noted: «It is necessary for education leaders and workers in response to the care and support of the state and the efforts of the patriotic mood of the people to raise the level and improve the quality of education at all levels of education. Also, to strengthen control over the development of modern knowledge by students, to encourage teenagers and young people to read fiction and scientific books, to strengthen their creative abilities. In this regard, in order to further improve the establishment of the study of natural, exact and mathematical sciences, as well as the development of technical thinking of the younger generation, we propose to declare the years 2020-2040: «The twentieth Anniversary of the study and development of natural, exact and mathematical sciences» [1].

In connection with the above, secondary schools and universities face the most important task, such as the formation of a broad worldview among students, including moral, aesthetic, scientific and legal education.

Because the chemistry of the XXI century is the basis of the development of world civilization, without which it is impossible to imagine today's human life, his culture, worldview and lifestyle. Everywhere we will see the miraculous power of chemistry and chemical technologies [2].

The aim of the article is to present the effectiveness of using the competence approach in teaching chemistry.

Research results. Today, an educational institution must prepare students for later life in a developing society. Students must be prepared for new, different situations and changes in the future life. They must have such qualities as constructiveness, mobility, dynamism, which are necessary for the future professional activity of the student. In solving these problems, the modern education system should form professional universalism - the ability of a person to change his lifestyle and direction of his activity. Based on the above, most countries are changing the development strategy in the field of education in order to prepare qualified, competitive and, most importantly, competent specialists who meet the requirements of the labor market.

For example, the works of I.A. Winter, E.F. Zeera, A.A. Verbitsky, in particular, are devoted to the definitions and concepts of competencies. In these studies, the special contribution of scientists in the development of competency definitions should be emphasized. Competence is defined as the ability to use acquired knowledge in an unfamiliar situation. In the works of Bowden J.A. Burk, J.B. Bloom, B.S. Harris reflects the concepts of competence, scope and criteria for the use of competence as the basis for successful mastery learning. At the same time, special attention is paid to lifelong learning or continuous learning as a result of the competence of the individual. Scientific studies of A.V. Khutorsky, P.P. Borisov, L.S. Vigotsky reflect the problems and methods of implementing the competency-based approach. The main conditions and methods for introducing the competence-based approach in the learning process are given. U. Zubaidov, I.Kh. Karimova, M. Lutfulloev, A. Pakhlavonov, F. Sharifzoda in their scientific works investigated the didactic issues of integration, humanization and differentiation of educational subjects. G.M. Bobizoda, Sh. Isrofilniyo, D. Imomnazarov, A. Baizoev in their works present the basic concepts and methods for the formation of competencies. The necessity of developing methodological foundations for the formation of competencies in the learning process is emphasized [4].

The author [3] in his work notes that modern didactics and modern education, the competence-based approach to education are completely different. Today, all work is done by both parties. A teacher is both a teacher and a student. Both understand and work, both argue and prove. There is no balance in mutual activity. Depending on the levels of education, the level of ease and complexity of the subject, sometimes the teacher takes the initiative, sometimes the students, sometimes the burden falls more on the shoulders of the teacher, sometimes on the shoulders of the students.

At the primary level (grades 1 - 4), where students take their first steps on the path to learning, the role of the teacher is great, and he begins to lead his younger students from behind. At the elementary school level (grades 5 - 9), sometimes the teacher takes the first place, sometimes the students, sometimes he takes the first

place, sometimes they. At the senior stage of secondary school (grades 10 - 11), the influence of students increases, their weight increases, they break ahead, begin to take first places.

Most importantly, a kind teacher is with them in any situation and, if necessary, lends a helping hand and helps develop skills.

The main goal of applying the competence-based attitude in education is aimed at creating a mechanism for applying theoretical knowledge in practice, ensuring the process of personal formation, adaptation to new conditions, development of self-defense, self-education, self-education. improvement and other features that contribute to the development of a holistic personality in the following areas:

- collective and individual search for ways to develop the skills to solve the problems of educational activities;
- understanding the causes of real life phenomena, the essence of natural phenomena and their relationship;
- preparing students for solving the main problems of life;
- explore ways to direct students' activities into the world of spiritual values;
- training in ways to solve problems related to the implementation of certain social issues;
- training in finding solutions to the problems of choosing a profession, etc [5].

At the same time, the main goal of an educational institution in the context of implementing a competency-based approach in education is, first of all, to ensure the development of thinking and effective actions of students in the educational process. The development of thinking is carried out mainly through the most important activities, including research, design, creative, managerial and the like, and effectively contributes to the self-determination of the individual. The most important condition for getting rid of problems in the modern information world is the availability of information about scientific methods of understanding the world and the development of research thinking. Every person, regardless of his profession, must be able to find evidence from the environment, analyze and compare them at the required level. This is achieved, first of all, through the study and use of new

pedagogical technologies, in particular, in the direction of understanding and applying the results of theoretical knowledge [5].

Each student comes to class with a different level of preparation. From this point of view, the teacher should be able to determine the level of competence of the student. The teacher is also responsible for shaping the educational outcomes of each student from a professional and moral point of view.

Learning is always effective if students:

- receive training based on their basic knowledge and skills;
- understand the goals and objectives of education and be able to fulfill them;
- the process of mastering educational materials should be exciting and interesting for them;
- students should be given the opportunity to practice to learn new learning materials or new skills;
- both teacher and student are responsible for education;
- teachers use different teaching methods in order to consolidate and reinforce new knowledge and skills;
- students should be given the opportunity to cooperate in solving educational issues and developing skills;
- the educational process should be focused on “how to think”, and not on “what to think about”;
- everyone should honestly talk about their strengths and weaknesses of knowledge and skills;
- failure in the process of education should be recognized as its integral part.

In the system of competent teaching and assessment, special attention is paid to the real knowledge, skills and abilities of students. Competences indicate the activities that learners will perform as a result of learning.

Indicators are provided for each competency to determine if the learner has mastered the competencies. Indicators are a set of knowledge, skills and abilities that demonstrate the achievement of competencies. They allow you to observe and

evaluate how well the student has mastered the skill. For some competencies, it is impossible to compile a complete list of indicators. Perhaps their number reaches hundreds of indicators, and their number varies depending on the starting point of competence development and depending on the level of training.

An example of a chemistry lesson with a competent approach.

Introduction. Science chemistry. Substance and its properties (1 hour).

Program. What is chemistry and what does it study. The concept of chemistry. Physical body (subject). Substance. The most important physical properties of matter. The importance of chemistry. Scope of some chemical products. The place of chemistry in the progress of science and technology.

Competent:

1. Understanding the need to comply with the rules of environmental safety in the environment, in everyday life he can handle oxides, bases, acids and salts in an educated way.

2. The periodic law and the periodic system of chemical elements can be used to predict and explain the properties of substances.

The goals of education. Studying the topic, the student:

- can explain the concept of chemistry, what is chemistry and what it studies, the physical body (object), matter;
- be able to give examples of the most important physical properties of a substance, the importance of chemistry, the scope of some chemical products.

Methodology of education.

Lesson steps and activities are recommended in nature. Use them when planning your lesson.

I. Introduction (beginning of the lesson)

1) Conduct the organizational part of the lesson.

2) Awaken students' previous knowledge with the following questions:

- What does chemistry study?
- What methods of chemical research do you know?

3) Briefly discuss the questions and write the students' interesting answers on the board (you will use them during the lesson).

II. Perception (the main part of the lesson).

4) Familiarize students with the goals and objectives of the chemistry course. Get to know each other through conversation. Use the experience of students in the conversation process. In the approach of the conversation, be reminded of the answers of the students.

5) Divide the students into groups and assign the task. Set aside a certain amount of time for the task and do not allow any group to present until the time is up.

Assignment to groups:

- Write down the objects and substances that you use the most in your home.
- Describe your thoughts in any plan you want;
- Present your work.

6) Make a presentation. Do not start the presentation with the interested group. Organize group discussions during the presentation. Allow up to 3 minutes for each group to present.

7) Evaluation of each other's work. After the presentation, ask the groups to evaluate each other's work orally. During the evaluation, students pay attention to the following issues: the design of the work, the content of the work and the presenter.

III. Reflection (end of lesson).

8) Reinforce the lesson using tests and questions and assignments from the textbook. You can do this in groups.

9) Conclusion. Lesson conclusions can be made together with students. Use the following questions to get students' impressions of the lesson:

- What did you like about today's lesson?
- What were the problems and how did you solve them?
- What new knowledge did you gain?
- Where will you use the knowledge you got from today's lesson?

10) Appreciate the hard work of students with encouraging words («Well done guys», «You did very well today», «I am very happy with your activity in today's lesson», etc.).

11) Assignment of homework:

Similarities and differences in properties of: a) table salt and sugar; b) iron and plastic; c) compare wood and rubber by examining them. Write your results in the table.

Conclusions. Thus, competence-based learning is closely related to the formation of individual competencies in the learning process. This is similar to outcome-based learning, in which outcomes are predetermined. In this case, outcomes called «competences» are determined in advance, and students are often assessed on the acquisition of these competencies. Therefore, competency-based learning can be seen as a form of results-based learning. Competence indicates the sufficiency of knowledge and skills that allow a person to act in a variety of situations. Since each level of responsibility has its own requirements, competence can arise at any time in a person's life or at any stage of their career.

References

1. Message of the President of the Republic of Tajikistan Emomali Rahmon Machlisi Oli. Dushanbe, 2019.

2. Melnikov B, F. Rahimi. Innovative pedagogical methods and technologies in teaching chemistry. *Bulletin of the Tajik National University*. Dushanbe. 2020. № 10.

3. Lutfullozoda M., Bobizoda G. Opinions about powers and their formation / Ed. S. Kamalzoda; ATT. Dushanbe, 2017. 86 p.

4. Sobirov H.M. Competence approach in teaching chemistry in the 11th grade of general education institutions of Tajikistan. Abstract for the degree of candidate of pedagogical sciences. Dushanbe, 2021. 54 p.

5. Competent attitude in education (methodical guide). Editors: G. Bobizoda, Sh. Isrofilnia, D. Imomnazarov, A. Bayzoev. Dushanbe, 2017. 74 p.

6. Hakimkhojaev S., Ibrohimov Kh. Guide to chemistry, 8th grade. For teachers of general education institutions. Dushanbe : Education, 2018. 144 p.