



## **QUALITY TEACHING OF CHEMISTRY IS THE FIRST FOUNDATION OF CHEMICAL PRODUCTION**

T. I. Jonimkulov

Independent Researcher of Karshi IEE1

<b>ABSTRACT</b>	<b>KEYWORDS</b>
<p>This article is devoted to the methods of developing intellectual abilities of students and approaches to solving them in quality teaching of chemistry.</p> <p>Organization of chemistry in a deep, understandable and interesting way - application of systematic analysis methods of educational technologies to the lesson process, helps to improve the quality of students' knowledge and develop their creative abilities.</p>	<p>Heuristic educational technologies, intellectual, chlorine water, halogens, starch, perception, perception, imagination, memory.</p>

### **INTRODUCTION**

Chemistry is a theoretical and experimental science. The study of substances and processes in the field of chemistry is conducted on the basis of the analysis of experimental results and is theoretically explained and summarized. If the obtained results can be explained on the basis of existing laws and theories, the results serve to strengthen them. If the obtained facts cannot be explained by existing theories, new laws and theories are created to explain them. Because explaining the science of chemistry in a simple language denies that chemistry is a complex science for students.

In our country, great attention and privileges are given to the teacher and the upbringing of the young generation. In particular, in order to fundamentally improve the quality of education in chemistry and biology, to introduce a completely new system of teaching these subjects in general education schools, special attention is paid to the decisions of the President (PQ-4805). in-depth training of our girls in chemistry and biology, establishment of new production enterprises in the regions, high value-added pharmaceutical, oil, gas, chemical, mining, food industries it gives impetus to rapid development and ultimately prepares a solid ground for increasing living conditions and incomes of our people..." Therefore, if the students' talents, interests, and intellectual-creative abilities are developed in the teaching of chemistry-miracle science, the intended goal will be achieved. The quality of education is determined by equipping young people with the unique mindset of the Uzbek nation with knowledge and raising them to the level of a great person in the highest sense. At the same time, there is a great need for competent and mature personnel.

The main task of the teacher who conducts the educational process is to choose the most alternative method of teaching, which implements education, upbringing and development of students. Each method should be used in such a way that it should implement the educational and development processes in the most effective way. Any teaching process cannot be carried out using only one

method, but several methods connected to each other are used. The teacher chooses the teaching method and uses it. In the course of the lesson, the personality of the teacher is an important factor of teaching. In particular, the teacher's personality is the basis of educating students.

The requirements for teaching chemistry are as follows:

- system of scientific knowledge;
- system of skills and qualifications;
- experience of creative activity accumulated by humanity in the field of chemistry;
- the experience of reaction to the surrounding reality.

Students' acquisition of chemical knowledge that serves for the development of society at the educational stages occurs with the implementation of chemical education.

It is worth saying that when students willingly learn and assimilate information, when they have an interest and desire for this!

In my opinion, there is no such thing as a bad student. Every student has his own talent, intellectual and creative capabilities. Only a skilled pedagogue can see and discover such ability. One of the great philosophers said, "If we can discover the heart (spirituality) of a child correctly, he will discover the world."

The teacher is a well-trained expert in chemistry, who, in addition to chemistry, chemical knowledge, and practical methods, should know the psychology of children depending on their age, and should be sincere as well as perfectly master the methods of implementing all stages of pre-education. Entering each lesson under the heading "Improving the quality of education is my slogan", using interesting facts and experiences in the introduction to each new topic, it draws students' interest in the same issue and defines its purpose. Teachers prepare a lot for such lessons. For example, the most interesting material, demonstration manuals, interesting experiments, discoveries of chemical scientists of the Republic, new achievements of science are used.

The teacher must first plan the lesson. In this case, the main task of the teacher is to clarify the content of the subject of the lesson, to determine the connections between them and to plan the content in a logical sequence.

In many cases, the "heuristic method" can be used for simple explanations in the teaching of chemistry. The main sign of a good education is the ability to explain complex subjects in simple terms. The heuristic method is implemented with the active participation of the teacher. As an example, a heuristic conversation about determining the relative activity of halogens can be given. The teacher always clarifies the students' research. The teacher adds a starch paste to the potassium iodide solution, but the color does not change. The color does not change even when starch is added to chlorinated water. If three components are added to the test tube: potassium iodide, starch paste and chlorine water, the starch will turn blue. Then the teacher conducts a discussion on the analysis of the experience.

For example, the topic "Simple and complex substances" in the textbook of the 7th grade can be explained to the student on the basis of demonstration and connection as follows:



Chemistry teaching methods are not only delivered through lectures, students need to know the methods of demonstrating experiments, lesson planning, methods of solving chemical problems, teaching methods. Therefore, they should do coursework and work independently in pedagogical practice. When teaching styles, it is necessary to make excursions to schools, academic lyceums. It is important to organize special courses and internships from special courses. The teacher uses a demonstration experiment to learn how to observe chemical processes and perform experiments at the beginning of the academic subject, where each student does not have the skills to work in chemistry. Also, a demonstration experiment will be held in order to arouse students' interest in science, to start forming practical skills, and to familiarize them with chemical devices, containers and reagents.

During the demonstration of the experience, three functions of the educational process were implemented: education, training and development.

Educational functions are such that students receive information about the course of chemical processes. They study the properties of substances and the methods of chemistry.

The educational function is that experience is a tool for knowledge of phenomena. It justifies the possibility of knowing the world.

The developmental function is that students develop observational skills and develop the ability to analyze observed events. Learns to draw conclusions and generalize. Students are developed by explaining the processes in the experiment through the teacher's words.

A student of chemistry is prepared to independently work on the knowledge that should be acquired by persons with higher education in the field of bachelor's chemistry education. It is necessary to learn to create an idea about the main achievements and problems achieved in the fields of professional activity. The goal of the student is to obtain higher education, to become a well-rounded person, a highly qualified, competitive specialist with high moral and ethical qualities, in accordance with the goals and tasks of the existing higher education in the country.

In the course of teaching the basics of chemistry, comprehensive development of students' knowledge is the basis of science. the quick acquisition of the basics of chemistry by students depends on the teaching methodology of that subject. Therefore, Methodist scientists develop various methods of increasing the effectiveness of lessons in science teaching and test them in the process of teaching chemistry. The methodology (method) of work is important in making important discoveries and in quickly solving the problem before science. Properly performed scientific investigations have led to great scientific discoveries. For example, the discovery of the spectral analysis method led to the discovery of many elements in nature. The creation of electrochemical testing methods made it possible to quickly solve important problems in science and industry.

In conclusion, it can be said that the teacher works with pedagogical skills in teaching chemistry, sharpens the student's talent, increases his interests and, as a result of these actions, delivers our young people who will be qualified and masters of their profession to chemical production plants in our society. must

A chemistry teacher should be an ideologically formed person, have a deep knowledge of science, be able to correctly apply the basic theoretical knowledge of education and training in practical activities, and be aware of pedagogical experiences. Because this science is a pedagogical tool that teaches and guides the content of the science of chemistry and the laws of its understanding by students.

After all, the young people of our future have all the opportunities to become knowledgeable, morally mature, specialists who have a deep understanding of modern techniques and technology as individuals.

## REFERENCES:

1. Dzhorakulova N.Kh. Methodology of teaching chemistry based on modern pedagogical and information technologies. // Scientific-methodical journal of public education. Tashkent. 2020. p.67-72.
2. Dzhorakulova N. X. Virtual educational technologies in the higher education system // Mughallim and continuous education. Scientific-methodological journal. 2019. -p.26-28.
3. Стешина О.С. Методические основы применения результатов научных исследований редокс-систем в преподавании химии в высшей школе. Автореф.дис. канд. Пед.наук. – Ташкент: ТГПУ им. Низами, 2006. – с.21.
4. Gayratovich, E. N. (2019). Using Visual Program Technology Methods In Engineering Education. European Journal of Research and Reflection in Educational Sciences Vol, 7(10).
5. Gayratovich, E. N., & Jovliyevich, K. B. (2023). Theory and Methodology of Software Modeling Using the Web Platform. Eurasian Scientific Herald, 16, 59-63.
6. Gayratovich, E. N., & Yuldashevna, T. O. (2020). Use of visualized electronic textbooks to increase the effectiveness of teaching foreign languages. European Journal of Research and Reflection in Educational Sciences Vol, 8, 12.
7. Ergashev, N. (2023). Ergashev Nuriddin G'ayratovich Oliy ta'lim texnika ixtisosliklarida raqamli ta'lim asosida bo'lajak muxandis kadrlarni tayyorlash muammosi: oliy ta'lim texnika ixtisosliklarida raqamli ta'lim asosida bo'lajak muxandis kadrlarni tayyorlash muammosi. Electron Library Karshi EEI, 1(01). Retrieved from <https://ojs.qmii.uz/index.php/el/article/view/319>.