ISSN: 2582-4686 SJIF 2021-3.261,SJIF 2022-2.889,
2024-6.875 ResearchBib IF: 8.848 / 2024

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-4, ISSUE-3

METHODS OF TEACHING CHEMISTRY

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Annotation: This article discusses the methods of teaching chemistry and the observed effectiveness of these methods among students.

Keywords: chemistry, general methods, dogmatic method, illustrative method, heuristic method, technique.

Introduction: It is known that the content of any academic subject cannot be explained in the educational process without a method. Therefore, from a philosophical point of view, the teaching method is the form of action in the educational process of the lesson content.

The main task of the teacher who conducts the educational process is to choose the most alternative method of teaching, which implements education, training and development of students' minds. The teaching method is a goal-oriented joint activity of the teacher and the students he leads. Each chosen method should be effective in the processes of education and development of the student's mind. The teaching process cannot be carried out using only one method. For this reason, several interconnected methods are used.

Textbooks were created by adding information on the natural chemical reserves of the republic and the production of products from them, contributions of eastern thinkers to the development of chemistry, discoveries of chemists, while preserving the contents of elemental chemistry and organic chemistry and the main theoretical issues of chemistry, which have been formed in the school for several years. The teacher himself chooses and uses the teaching method. 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. Teaching methods are many and varied, and they are increasing and improving every year. New teaching tools are being created. As the cultural level of society increases, the level of development of students' minds increases. Therefore, there is a need to systematize methods and divide them into classes. A system of teaching methods can be created based on the following characteristics:

1. Illustrative-explanatory, heuristic, checking methods of students' thinking activity;
2. According to the type of sources of knowledge: oral recitation, recitation based on visual aids;
3. According to the form of joint activities of the teacher and students: lecture, conversation, explanation, independent work, program teaching;
4. Pupils on implementation of education: new pedagogical technologies.

We will consider the characteristics of the activities of teachers and students in various general methods of teaching.

In the illustrative-explanatory method, the teacher conveys ready-made knowledge to the students using various methods, for example, the teacher's explanation, working with a book, using a tape recorder or a computer. In this case, visual teaching tools - experimental tables are used. Based on the teacher's explanation, laboratory experiments are used. In the illustrative explanation, the conscious but reproductive activity of the students occurs. This method is widely used in

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teaching, because it quickly collects a minimum base of knowledge, based on which students' research activities can be strengthened. In some cases, it is necessary to implement this method. For example, when studying the chemical symbols of elements, the teacher shows how to write and name the chemical symbols, and then the students are invited to learn them by rehearsing. Exercises can be performed as a game, using innovative technologies.

Illustrative explanation method is also used in students' formation of practical skills. For example, the teacher shows the technique of performing the experiment. Evaporation of the solution in the test tube, installation of the test tube on the stand, heating rule. In this, the teacher demonstrates his actions, and then requires students to repeat them exactly. Illustrative explanation method is used in the initial stages of learning chemistry, when students' knowledge and skills are insufficient. Using this method all the time has a negative effect on the development of students' thinking, makes them lose their activity. Therefore, in necessary cases, it is necessary to use research methods, that is, heuristic and research methods. The basis of these methods is problem-based learning.

Heuristic and research methods are similar to each other, but their difference is determined by the more or less independent activity of students. The heuristic method is implemented with the active participation of the teacher. An example is the heuristic conversation about determining the relative activity of halogens. In this case, the teacher is always clarifying the students' research. The teacher adds a starch paste to the potassium iodide solution, but the color does not change.

Addition of starch to chlorinated water does not change the color. If three components are added to the test tube: potassium iodide, starch paste and chlorinated water, the starch will turn blue. Then the teacher conducts a discussion on the analysis of the experience. The students' experiences play a key role in the testing method. An example is solving experimental problems. In it, students use their theoretical knowledge and experimental skills to solve a problem. They first carry out the experiment mentally, draw up a plan of investigation. If necessary, they use educational and scientific literature. The test method requires maximum independent work from students.

The methodology (method) of work is important in making important discoveries and in quickly solving the problem before science. Scientific investigations performed in the right way 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. Accordingly, the rapid acquisition of the basics of chemistry by students depends on the teaching method. Methodist scientists have developed various methods of increasing the effectiveness of lessons in teaching subjects. They are used in the process of teaching chemistry.

Conclusion: Chemistry teaches to master the knowledge of the basics of chemistry. This subject differs from subjects that provide ready-made knowledge, and also serves as a scientific subject, because new teaching methods are created in the process of pedagogical work. Applying advanced educational technologies to lesson processes and improving the teaching and learning methodology is also a scientific and methodical work.

Teaching methods develop during the teacher's work. Therefore, studying the experience of leading teachers is considered one of the important factors for improving the teaching process. Each new teaching method created by scientists is subjected to pedagogical experience at the stages of education. Effective methods are applied to the educational process. Currently,

innovative and information technologies are widely introduced into the process of teaching chemistry.

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