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Teaching Methodology of Organic Chemistry in The 10th Classes of Specialized Schools on The Basis of Variative Curriculum

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Abstract
In this article, the procedure for organizing competitive classes based on a variable curriculum in the 10-11th grades of specialized schools, the types of competitive classes and the organization of lesson processes in them, to further increase the level of education of young people, and to provide comprehensive knowledge by uniting them for certain goals. The essence is explained. Also, to organize a selection class in the variable curriculum, to create study plans in groups with in-depth study of natural sciences, especially chemistry, to prepare special textbooks for them, to organize chemistry with modern methods, to teach each lesson based on laboratory experiments. it is thought that the transition will have a good effect on the students' mastery of natural sciences and continuing their studies for higher education.

Keywords: variable, innovative, selective class, interest, creativity, development, methodology, complex groups, variable curriculum, ability.

Introduction

Decisions of the President of the Republic of Uzbekistan No. PQ-4805 of 12.08.2020 "On measures to increase the quality of continuing education and the effectiveness of science in the fields of chemistry and biology" and "In the system of the Presidential Educational Institutions Agency" Decree No. PF-106 dated April 14, 2022 on expanding the network of specialized schools is also a clear evidence of the attention paid to specialized schools and natural sciences.

On December 20, 2022, the President of the Republic of Uzbekistan, Shavkat Mirziyoyev, in his address to the Oliy Majlis and the people of Uzbekistan, stated that "A social state is, first of all, equal opportunities for the realization of human potential, creation of necessary conditions for

people to lead a decent life, poverty reduction shortening means Therefore, first of all, we will focus on supporting education, which is the biggest investment for New Uzbekistan. "Salvation is in education, salvation-education, salvation-knowledge. Because all good goals are achieved thanks to education and education", we must understand that we should make education and education our most important and highest goal in Uzbekistan. At a time when modern science, technology and industry are rapidly developing, social and ecological relations are being regularly studied, teaching chemistry in schools in a new way is both a necessity and a demand of the time. In the process of teaching subjects in general secondary schools, learning in connection with science and technology development, engineering, mathematics and everyday life (STEAM approach) is an urgent issue of organizing the educational process. General secondary teaching of chemistry in schools is determined by its role in the development of science and technology, in the fields of production and in everyday life.

In a country where education and training are paid attention to, growth, development, prosperity and, of course, peace reign. It is known that the science "Methodology of teaching chemistry" teaches the methodology and technologies of mastering the basics of chemistry. Along with the educational issues of teaching any subject, there are also educational issues that are important for the development of society.

Positive forms of education can be successfully inculcated in the minds of students in chemistry teaching. In addition, in the process of teaching the basics of chemistry, comprehensive development of students' knowledge is the basis of science. According to the historical development of the science "Methodology of chemistry teaching", chemistry teaching methodology is a subject taught in general education schools. In the years of independence, extensive work was carried out in the field of educational reform. The main theoretical issues of chemistry formed during several years of teaching at the school, the utilization of the natural chemical resources of the republic and the products obtained from them, the contribution of eastern thinkers to the development of chemistry, the preservation of the content of elementary chemistry and organic chemistry, additional textbooks for chemists (interactive manual, multimedia e-textbooks) created by chemists. For this reason, the problem of creating a textbook "Methodology of Chemistry Education" has arisen in various groups of specialized schools, which are the only ones for teaching chemistry in continuous education level schools, academic lyceums and vocational colleges.

The main part. At different stages of the development of society, the requirements for the educational process were not the same. For example, they arose from the laws of society's development and its most important task is education and training of the young generation. Today's task is to organize the educational process in such a way as to form not only reproductive thinking, but also creative thinking in students. In this case, improving the literacy of students in natural sciences is a high priority.

Literacy in natural sciences means that a person knows ideas related to natural sciences and is able to solve problems related to natural sciences as an active citizen. A person who is literate in natural sciences can participate in the discussion of problems related to natural sciences and technologies based on scientific evidence. The use of chemical games and analogies in chemistry lessons from natural sciences gives positive results, especially didactic game technologies are based on the activation and acceleration of student activity. They are of great importance in identifying and

implementing practical solutions for realizing and developing positive opportunities for the student. Didactic games help students to analyze, think logically, research, calculate, measure, make, test, observe, compare, draw conclusions, make independent decisions, work in a group or team, teach ethics - manners, speech Cultivation helps to teach language, learn new knowledge and develop other types of activities. In this regard, the importance of organizing selection classes based on a varied curriculum and in-depth teaching of natural sciences in specialized schools is high.

The subject "Methodology of teaching chemistry" teaches to master the basics of chemistry. In contrast to the science that provides ready knowledge, the science also serves as a scientific science, because new teaching methods are created in the process of pedagogical work. Improving teaching and learning methods by applying advanced educational technologies to the educational process is also a scientific and methodical work. Teaching methods develop with the teacher's work.

Chemistry teaching methodology is closely related to pedagogy. Because its educational task is based on the laws of pedagogy. Its methodological basis is the idea of national independence. The object of influence of the chemistry methodology is students of all ages, with different levels of character and interests. Chemistry lessons written for school should be written based on the age characteristics and level of knowledge of the students. Physiology and psychology study age-related characteristics of students. Processes of education and training of students. In order to solve their problems, future science teachers should have a good knowledge of the sciences of youth physiology and psychology. In connection with the introduction of modern technologies in chemistry teaching, the function of informatics, i.e. acquisition of teaching methods with the help of a computer, was created. Likewise, every teacher is a pedagogue. Mathematical results of experiments. In order to know the problems of analysis, one should be fully aware of the basics of mathematics.

Variable (variable) curriculum - organization of elective class directions based on the voluntary choice of students in general secondary schools. Selection classes are in 5 directions, and they are classified as follows (Scheme 1)

In accordance with the relevant order of the Minister of Public Education, starting from the 3rd quarter of the 2019-2020 academic year, in the 10th-11th grades of general secondary schools, variable curricula in 5 areas are being implemented as a pilot test. was done.

Scheme 1. 5 directions of selection classes

• The purpose of introducing variable curricula is to create conditions for students to study the subjects they are interested in deeply, to ensure that school graduates prepare for the university entrance exam, and to direct the educational process in higher grades to professions. consists of organizing in a directed manner. Also, one of the main changes is the increase in the number of elective classes from 5 to 12 in the 2020-2021 academic year. The selection of the following courses is being created in the 2020-2021 academic year:

• • first course: for 10-11th grade — foreign language and philology course;

• • second direction: for 10-11th grade — finance — economy;

• • the third direction: for 7-8-9-10-11 classes — web freelancer (earning labor income through the Internet) direction;

• • fourth direction: for 10-11th grade — technology direction;

• • fifth course: for 10-11th grade — course of natural sciences;
• • sixth direction: for 10-11th grade — social-humanitarian direction;
• • seventh direction: for 10-11th grade — primary education direction;
• • eighth direction: for 10-11th grade — chemical technology direction;
• • ninth direction: for 10-11th grade — geography and geology;
• • tenth direction: for 10-11th grade — preschool education and psychology;
• • eleventh direction: for 10-11th grade — history and archeology direction;
• twelfth direction: for 10-11th grade — tourism direction

Based on the order of the Minister of Public Education of the Republic of Uzbekistan No. 144 dated June 15, 2020, it is specified in the "Recommendation on pilot testing of variable curricula in general secondary schools" In accordance with the regulations, in the state specialized general secondary educational institutions, where certain subjects are studied in depth, experimental-testing (in the selection class on elective subjects) in the field of chemistry has been developed. According to it, it is indicated that chemistry will be taught in two areas on the basis of selection.

►It is not required to open competitive classes in all directions in a general education school.

►It is also allowed to open a selection class in one direction in the school. When opening courses, the possibilities of this school, the wishes of students and the availability of highly qualified and experienced teachers are taken into account.

►Traditional class studies 15 compulsory subjects, selective class studies 8 compulsory subjects.

► The direction of the variable curriculum in the school is first determined based on a survey conducted among students. As a result of the survey, the direction known based on students' choice is discussed in the pedagogic council, and if this situation is supported, the direction of the variant curriculum is determined by the decision of the pedagogic council.

►If the school does not have a highly qualified and experienced teacher in the subject of the student's chosen field, then the issue of introducing a variant curriculum or organizing a selection class in this field will be temporarily suspended. It will be suspended until a highly qualified and experienced teacher is recruited by the school director. ►The number of students in the selection class should be up to 35 in accordance with the Regulation on General Secondary Education approved by the Cabinet of Ministers Decision No. 140 of March 15, 2017. If there is only one 10th or 11th grade in a school, and 100% of the students in the class choose one direction, it is possible to introduce a variable curriculum in such classes.

In the curriculum, chemistry is taught 7 hours a week for a total of 238 hours in the 10th-11th grades, expanding the topics, strengthening each topic with laboratory experiments, solving problems, exercises, tests, and chemical-technological processes based on additional literature, their it is determined that it will be taught by providing information of practical importance. In the program, the total number of hours allocated to topics is given in the section of the chapters, and their distribution is carried out by the teacher with a creative approach. In particular, it is necessary to distribute the calendar in the thematic plan without exceeding the total number of hours allocated to the chapters (assigned to the subjects) in the curriculum. Also, in order to fill the gaps in the students' knowledge, according to the results of the monitoring of students' mastery of the State Education Standard, to change the amount of hours allocated to the subjects up to 15%, and at the meeting of the Methodological Council it is advisable to discuss and approve it in the school pedagogy council.

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The list of literature recommended in this program can be used by science teachers to expand and teach topics with a creative approach.1-jadval

Tabiiy fanlar yo`nalishi boyicha o`quv reja namunasi ()

Table 1

T/r	Name of subjects	Hours per week	
		10- class	11- class
Compulsory subjects			
1.	Mother tongue and literature	3	3
2.	Uzbek language (Russian language)	3	3
3.	Foreign language	3	3
4.	History	2	2
5.	Mathematics	4	5
6.	Informatics	2	2
7.	The foundations of spirituality	0,5	0,5
8.	Physical education	1,5	1
Total hours			19,5
Elective subjects			
1. Biology	1. Biology	5	5,5
2. Chemistry	2. Chemistry	7	7
Total hours		Total hours	11,5
General hours		19	19,5

Table 2 Theoretical and practical topics in 10th grade organic chemistry

№	Title of Chapters	Hours Distribution		
		Total	*Theoretical*	Theoretical Practical and control work (with laboratory work))
1	Structural theory of organic chemistry	20	13	7
2	Hydrocarbons	69	39	30
3	Oxygenated organic compounds	69	36	33
4	Nitrogen organic compounds	46	24	22
	Total	204	112	92

In the additional allocated hours for the elective subject, the following is carried out:

• providing students with in-depth teaching of subjects and additional information on relevant topics;

• to strengthen students' knowledge and ensure full mastery of topics;

• Use of educational resources "Khan Academy Uzbek - Online educational platform";
• solving examples and problems from additional literature, tests (sample tests on the DTM site);
• attracting teachers of higher education institutions;
• preparing students for entrance exams of higher education institutions

.Classification of chemical education methods In the process of choosing and implementing optimal methods of chemical education, it is desirable for a chemistry teacher (beginner or experienced) to take into account their activity levels:

Methodological level. At the methodological level, for example, an integrative approach works. This approach is applied to the didactics and methods of teaching chemistry in order to realize the leading idea of the universal connection and interdependence of chemistry and other objects of knowledge, the idea of continuous integration and differentiation of different forms of matter, motion and energy. fits. (in particular, chemistry), the relationship between education, chemistry and other sciences is studied at a general level in order to comprehensively solve the problems of natural and humanitarian sciences.

Induction, deduction, analogy, analysis, synthesis, comparison, comparison, concretization, abstraction, generalization, systematization, modeling, forecasting, and integration methods are widely used in chemistry teaching methods at this methodological level of didactics. At this stage, teaching chemistry (also in chemical education) includes presentation (lecture, story, description, statement, etc.), conversation, and independent work methods.

A chemist-teacher should know the advantages and disadvantages of each method, use its didactic possibilities.

Conclusion

When students study chemistry, they are like a blank sheet of paper. Drawing images on this paper with a simple pencil or with different colored paints depends on the pedagogical skills of us pedagogues. since we need creative people with intellectual potential, we should not forget that it is the responsibility of pedagogues to develop personnel.

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