ПЕДАГОГИЧЕСКИЕ НАУКИ

METHODOLOGY OF QUALITY IMPROVEMENT IN MODERN CHEMISTRY EDUCATION

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МЕТОДИКА ПОВЫШЕНИЯ КАЧЕСТВА СОВРЕМЕННОГО ХИМИЧЕСКОГО ОБРАЗОВАНИЯ

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ABSTRACT

The quality of chemical education, we mean a result that reflects the external and internal definition of the process, that is, goals and objectives, levels, content components, stages, methods, tools, forms, conditions, as well as optimal correspondence to the actual results. Activity and personal qualities are expressed in the specified criteria.

Quality assurance in chemistry education cannot be imagined without meeting the needs and requirements of individuals, society and the state. Therefore, the quality of chemical education that meets the existing needs of man and society is an integral feature of the chemical education system.

The quality of chemistry education is determined by the requirements of the new educational standard. The qualitative characteristics of the results are characterized by the ability to assess the quality of individual regulatory, cognitive, and communicative activities.

Today, the achievement of quality in chemistry education has become possible due to the traditional innovative nature of the level of knowledge, the achievement of various educational results, the development of skills, research activities, educational motivation and other criteria for self-education. Knowledge, skills, activities, experience and value relationships are the means of forming holistic professionalism.

Suggests the importance of establishing a relationship with a specific thematic area, can determine its direction. As you can see, the quality of chemical knowledge is a multi-factor concept methodology.

It is important to master the school curriculum, educational material, not only in the form of knowledge, but also in the form of skills.

АННОТАЦИЯ

Под качеством химического образования мы понимаем результат, который отражает внешнее и внутреннее определение процесса, то есть цели и задачи, уровни, компоненты содержания, этапы, методы, инструменты, формы, условия, а также оптимальное соответствие фактические результаты. Активность и личностные качества выражаются в указанных критериях.

Обеспечение качества химического образования невозможно представить без удовлетворения запросов и потребностей человека, общества и государства. Поэтому качество химического образования, отвечающее существующим потребностям человека и общества, является неотъемлемой чертой системы химического образования.

Качество химического образования определяется требованиями нового образовательного стандарта. Качественные характеристики результатов характеризуются возможностью оценки качества индивидуальной регуляторной, познавательной, коммуникативной деятельности.

Сегодня достижение качества в химическом образовании стало возможным благодаря традиционному инновационному характеру уровня знаний, достижению различных образовательных результатов, развитию навыков, исследовательской деятельности, учебной мотивации и другим критериям самообразования. Знания, навыки, деятельность, опыт и ценностные отношения - это средства формирования целостного профессионализма.

Подсказывает важность установления отношений с определенной тематической областью, может определять ее направление. Как видите, качество химических знаний - это методология многофакторных концепций.

Важно усвоить школьную программу, учебный материал не только в виде знаний, но и в виде навыков.

Key words: educational standards, modern chemical education, quality of education, teaching methodology, quality indicators, high-quality teaching methods, conditions for effective teaching and self-education, ways to solve the problem of education quality, effective application of methodology, quality knowledge

Ключевые слова: образовательные стандарты, современное химическое образование, качество образования, методология обучения, показатели качества, качественные методы обучения, условия эффективного обучения и самообразования, способы решения проблемы качества образования, эффективное применение методологии, качественные знания

Improving the quality and effectiveness of education reflects the importance of investing in the future and rethinking its value as a supporting factor in society, culture and life.

The problem of educational effectiveness at the educational level has been studied in various directions.

• The essence of curriculum quality defines the basic functions of the education system, the ability to meet the existing and potential needs of individuals and societies, and the social needs for training highly qualified professionals.

• Disclosure of the essence of the concept of education at the individual education achievement level and the process of educational activity and the concept of quality as a result;

• Acquisition of knowledge and skills in the process of education and training that provides a diagnosis of the quality of education and training. Step-by-step approach for;

• Many researchers have joined to define criteria for assessing the effectiveness of certain aspects of educational activity.

We understand the quality of chemistry education and the results that reflect the external and internal definitions of the process such as goals and objectives, levels, content components, stages, methods, tools, formats, conditions, etc., for optimal compatibility. Understand Actual result. Activity and personality traits are represented by specified criteria.

Ensuring the quality of chemistry education is inconceivable without meeting the needs and needs of individuals, societies and nations. Therefore, the quality of chemistry education that meets the existing needs of individuals and society is an important characteristic of the chemistry education system. [1]

According to modern educational standards, chemistry education models and norms are the relationship of integrative knowledge, creative experience, and values. Therefore, integration is needed to analyze and evaluate the quality of chemistry education. The integrative nature of the methodology for analyzing and evaluating the quality of chemistry education is also characterized by its complex implementation in various criteria, quality indicators, quantitative parameter component methods and working conditions.

The quality of chemistry education is determined by the requirements of the new educational standards. The quality characteristics of the outcome are characterized by the ability to assess the quality of individual regulation, cognition, and communication.

The qualitative outcomes of today's chemistry education are the traditional and innovative features of the knowledge level, which are made possible by the achievement of various educational outcomes, technological development, research activities, learning motivation and other self-study standards. The relationship of knowledge, skills, activities, experience and values is a means of building professional integrity. [3]

In the chemistry course, special attention should be paid to the formation of knowledge qualities such as:

• Completeness determined by the number of chemical knowledge objects;

• Precision that characterizes the basic connection between a particular chemical concept and other related concepts;

• Systematization, composition, content, and logic of particular chemical knowledge Provides knowledge about the order.

• Fairy tales of chemistry knowledge of chemistry and other scientific elements in structures similar to the structure of procedures, structures and functional relationships, student work in line with plans: related concepts are the main clauses, and as a result, knowledge Application etc.

• Efficiency to ensure the ability to utilize knowledge in the field of chemistry in applied standard and non-standard situations;

• Flexibility to find flexible ways to apply knowledge in chemistry;

• Generalization is chemistry It is the embodiment of knowledge representation.

• Complete knowledge of chemistry requires a concise and concise expression of knowledge.

• Ideas that provide an understanding of the essence, mechanism and expression of relationships between chemical knowledge, as well as evidence and scope of acquired knowledge.

• Knowledge preservation means that it can be increased and applied as needed.

You can orient yourself by suggesting the importance of building relationships with specific topic areas. Thus, the quality of knowledge in chemistry is a multi-factor methodology.

Based on the educational standards, the purpose and methodology of chemistry are as follows.

• Read the rules for safe handling of substances and first aid in case of injury or poisoning.

• Systematize the basic laws of chemistry and chemical theory within the basic educational program of secondary (complete) general education.

• Master chemical terms and symbols.

• Identification of substances and materials based on external indications and reactions of the most important properties;

• Composition of chemical equations and calculations of various types;

• Capacity of DI Mendeleev's Periodic Table of the Elements;

• Understand the energy characteristics of transformations and the effects of these transformations on optimal conditions.

• Ability to apply knowledge gained while explaining chemical phenomena from daily life, industry, and production of agricultural products to life;

• Explanation of environmentally appropriate behavior patterns;

• Causes and consequences of chemical pollution in the environment, We are developing a way to identify and eliminate the effects on living and human health.

Among the subjects assigned to the level of chemistry education, knowledge and technical expertise:

• Basic level of knowledge and skills:

• Additional studies of natural subjects in secondary and higher vocational institutions Self-study synchronization formation; Occupational characteristics based on the natural sciences;

• In modern society, the importance of chemistry, nature Information and explanations about the role of chemistry and other natural science relationships in this study.

• Master the basics of chemical thermodynamics and chemical kinetics.

• I want to participate in discussions on the subject, write reports, write treatises, and do other creative work.

Requirements for the acquisition quality of knowledge and skills in chemistry in the school curriculum must be grouped in class (8-11)

• Requirements for mastering theoretical materials;

• Requirements for familiarizing yourself with facts;

• Requirements for mastering chemical languages;

• Requirements for applying chemicals

• Atoms-Basics of Molecular Theory Regulations;

• Mass Conservation Law of Substances;

• Molecular Composition, Oxygen, Hydrogen, Water Properties;

• Chemical Properties of Oxides, Bases, Acids, Salts;

• Modern expressions of periodic law and basic laws

• D. I. Mendeleev's explanation of the periodic law of chemical elements;

• Safe working rules with items and the simplest equipment.

For example, according to the quality of the acquisition of educational materials, the requirements of organic chemistry should be classified into the following knowledge groups:

• The chemical structure of the substance, the most important functional group of the homologous structure isomeric organic substance, single, double, triple, aromatic hydrogen, etc. types of communication, the main provisions of the theory of the electrotechnical properties of the substance Electronic polymer structure of organic substances;

• Structure, properties and practical significance of saturated, unsaturated and aromatic hydrocarbons, monocyclic,

polycyclic alcohols, aldehydes, carbonic esters and fats, glucose and fructose, starch and cellulose, amines and amino acids, proteins.

• Basic concepts in the chemistry of polymeric substances. The most important representative structural properties, properties, acquisition and use of plastics, rubbers and chemical fibers.

• Industrial processing of petroleum and natural gas.

• Rules of safe work on the hazards of toxic fires of organic substances, equipment and organic compounds learned.

It is important to master the school curriculum and acquire material not only in the form of knowledge, but also in the form of skills.

Thus, organic chemistry teaches students to have the skills to:

• Reasons for the diversity of organic matter Material unity of organic and inorganic matter Causal relationship of composition, structure, and properties of matter The development of awareness of the simplest to the deepest is an example.

• Determine the structure of substances according to their properties based on their chemical structure, using logically comparison, analysis, synthesis, systematization and generalization tasks in the study of educational materials.

• Organize the structural formulas of organic substances under study, determine the distribution of electron densities in molecules, and name substances according to modern nomenclature, build reaction equations that characterize the properties of organic substances, and their genetic relationships.

• Determine the properties of carbon, hydrogen and chlorine in organic matter through chemical analysis. [2]

The formation of the above skills in chemistry is related to the achievement of an integrated outcome of general educational value.

• Define the goals and objectives of organizing educational activities and evaluate the results obtained by interacting with groups that have applied information and communication technologies ICT to select generalized and different methods to achieve their goals, and to retrieve chemical information and other information ability to do. [4]

• Preparation of career choices in the world of occupations, the labor market, and the vocational education system. Consider their interests and opportunities.

• Ability to comply with ethics and evaluate the behavior of one's own and others in terms of socio-cultural traditions and moral leadership.

Therefore, the quality of chemistry education in secondary schools can be assessed according to how students perform the above requirements in the process of acquiring textbooks on chemistry. It should be noted that the school curriculum in chemistry determines in part the value relationships that are formed in the chemistry curriculum.

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ACMEOLOGICAL INNOVATIVE TEACHING OF CHEMISTRY

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АКМЕО ИННОВАЦИОННОЕ ОБУЧЕНИЕ ХИМИИ

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ABSTRACT

Pedagogical technology envisages the widespread use of creative processes, the development of students' creative activity, and the implementation of planned educational standards through the acquisition of established experience.

The principles of expediency, integration, differentiation, optimization, safety, effective results should be followed when selecting pedagogical technologies and including them in the process of chemical education. The theoretical foundations of modern chemistry methodology are educational technologies, integrative approach, leading ideas, humanization, innovation, new technology and the principles of their implementation. An integrative approach, individual achievement and a methodological approach based on different components are understood. The basis of pedagogical technology is a didactic process with three interrelated components: students' motivation, cognitive activity and the management of this activity. Depending on the initial pedagogical considerations that form the basis of each component of the didactic process, different technologies are obtained, which have a large number of processes. Each student learns and develops in personality-oriented technology. There is an unusual atmosphere of cooperation and mutual assistance in the classroom, there is constant communication in pairs and groups, children do not get tired, there is a constant change of activity, systematic assessment and self-assessment is carried out.

АНОТАЦИЯ

Педагогическая технология предполагает широкое использование творческих процессов, развитие творческой активности студентов, реализацию плановых образовательных стандартов за счет приобретения наработанного опыта. При выборе педагогических технологий и включении их в процесс химического образования необходимо руководствоваться принципами целесообразности, интеграции, дифференциации, оптимизации, безопасности, эффективных результатов. Теоретическими основами современной методологии химии являются образовательные технологии, интегративный подход, ведущие идеи, гуманизация, инновации, новые технологии и принципы их реализации. Понятны интегративный подход, индивидуальные достижения и методологический подход, основанный на разных компонентах. В основе педагогической технологии лежит дидактический процесс с тремя взаимосвязанными компонентами: мотивация студентов, познавательная деятельность и управление этой деятельностью. В зависимости от исходных педагогических соображений, лежащих в основе каждого компонента дидактического процесса, получаются разные технологии, которые имеют большое количество процессов. Каждый ученик учится и развивается с помощью личностно-ориентированных технологий. На уроках необычная атмосфера сотрудничества и взаимопомощи, постоянное общение в парах и группах, дети не устают, происходит постоянная смена активности, проводится систематическая оценка и самооценка.

Key words: new technology, pedagogical technology, innovative technology, didactic technology, training, education, development, components, technology features, conditions for the application of technology