

3) not every educational institution has the opportunity to organize a barrier-free environment because of a certain financial situation of schools and the architecture of buildings;

4) there is rarely an active children's impact on the educational environment, many didactic manuals are kept by teachers and are not provided to children in their free time.

Conclusion. Thus, in accordance with the vector modeling technology, we have classified the educational environments of experimental educational institutions. However, for a more comprehensive study of the specifics of the organization of the educational environment, it is necessary to conduct more systematic observation according to the maximum number of criteria.

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THE SPECIFICS OF VISUAL MODELING CONTENT IN TEACHING GENERAL CHEMISTRY

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Keywords: visibility in teaching, modeling, general chemistry, visualization.

A promising means of overcoming cognitive barriers in the conditions of modern learning is the use of cognitive technologies. The term "cognitive technology" (cognitive science) is proposed to describe the impact of methods and electronic devices, other means (devices, models, etc.) on human mental processes, including observation, perception, retention and reproduction of information from memory in the learning process, forming behavior not only in the educational process, but also most importantly – when solving life tasks [1].

One of the directions of implementing cognitive technologies in practice to increase the level of understanding of chemistry is the use of visual modeling, which allows transferring the characteristics of a real object, the features of its structure and functioning to a duplicate model.

The purpose of the work is to substantiate theoretically the need to use visual modeling in the educational process and to investigate this problem in the context of teaching general chemistry.

Material and methods. The following research methods were used: a systematic analysis of the literature on the problem under study, the study of the experience of university teachers, pedagogical observation, a pilot pedagogical experiment.

Findings and their discussion. The general chemistry course is a link between the pre-university and university stages of chemical education. The content of the subject is based on knowledge of chemistry, physics and mathematics in the scope of the curriculum of institutions of general secondary education and is combined with related disciplines of the chemical block (Introduction to Organic Chemistry, Chemistry of Elements, Organic Chemistry, Analytical Chemistry, Biological Chemistry, Physical and Colloidal Chemistry, Methods of teaching Chemistry) [2].

In accordance with the requirements of the new educational standard, the academic discipline "General Chemistry" belongs to the state component block and is located in the module "General and Organic Chemistry". The study of this module should ensure the formation of students' basic professional competencies, such as to interpret the basic regularities of the periodicity of the properties of elements and their compounds, the structure, properties and methods of obtaining chemicals, the flow of chemical processes with their participation, to master the methodology for solving computational and experimental chemical problems.

When teaching general chemistry, it is possible to fully implement one of the tasks specified in Chapter 5 of the concept of the development of the education system of the Republic of Belarus until 2030 (approved Resolution of the Council of Ministers of the Republic of Belarus date 30.11.2021, № 683), which refers to the application of teaching methods aimed at critical and creative thinking formation among students. It is promising to base the solution of this issue on the use of visual modeling.

The frequency of using models in the learning process can be estimated by analyzing the content of the general chemistry course from the perspective of visual modeling (table 1).

Table 1 – Overview of the content of the general chemistry course from the point of view of the application of visual modeling

№	Main topics and sections	Concepts studied on the basis of modeling	Type of training model
1	Basic chemical concepts and laws	A chemical element. Types of chemical particles. Structural units in chemistry.	Chemical formula of the element. Table. Visual comparison of atomic masses with the mass standard. Schematic drawing of an atom, molecule, ion, macromolecule.
2	Classification and nomenclature of inorganic substances	Substance. The main classes of inorganic substances: oxides, hydroxides, salts. The general chemical properties of representatives of these	Chemical formula of the substance (molecular, structural, stoichiometric). Ball and ball-rod model of molecules of simple and complex substances.

		classes and the genetic relationship between them.	Table. General chemical properties of classes of inorganic substances and the genetic relationship between them.
3	Chemical reactions. Thermodynamics of chemical reactions	Chemical reactions. Homogeneous and heterogeneous systems. The concept of a state function. Change in the internal energy of the system. Enthalpy. Thermal effects of chemical reactions. The heat of formation of chemical compounds. Hess's law and its consequences. Entropy.	Equations of chemical reactions (molecular, full and abbreviated ionic). Schemes for drawing up systems for directing thermodynamic reactions. Schematic modeling of chemical processes of thermochemical reactions. Animations of the movement of molecules.
4	Chemical kinetics and catalysis	The speed of the chemical reaction. The concept of active molecules and the activation energy of the process. Free radicals. Catalysis.	Graph of the chemical reaction rate. Schemes of active molecules and the activation energy of the process. Energy diagram of the reaction of the first and second order.
5	Oxidation-reduction reactions	The degree of oxidation. Oxidizing agents and reducing agents. The electronic balance method and the ion-electronic method (the method of half-reactions). The concept of a galvanic cell. Standard redox potentials and their relation to the Gibbs energy change. The Nernst equation. Forecasting the direction of IAD in solutions. Corrosion of metals and the main ways to protect against it. Electrolysis.	A visual model for determining the degree of oxidation of atoms by the structural formula. Geometric method for determining the degree of oxidation. Galvanic cell circuit. Chemical equations of redox reactions. Animation of recoil and acceptance of electrons. Electrochemical series of voltages (standard electrode potentials) of metals. Standard redox potentials and their relation to the Gibbs energy change. Virtual models.

Conclusion. Thus, the specifics of using visual modeling is reflected in the fact that it should be optimally combined with other teaching methods, ensuring the integrity of ideas about the studied chemical objects and phenomena, contributing to a better understanding and assimilation of the material on general chemistry.

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FORMATION OF SENSORY CULTURE IN PRESCHOOLERS WITH INTELLECTUAL DISABILITY: MODERN APPROACHES

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Keywords: preschool children with intellectual disability, play activity, teacher, mental processes, sensory development.

The problem of sensory development disorders is very relevant in modern conditions. The presence of children with intellectual disabilities in preschool institutions further exacerbates this problem. Since childhood, the child is surrounded by a large number of interesting objects: toys, art objects, nature, he gets acquainted with them and studies them in the process of growing up. Sensory development promotes the effective formation and development of perception of the child starting from preschool age.

Many modern physiologists and psychologists, such as L.A. Wenger, R.A. Granit, A.V. Zaporozhets, V.P. Zinchenko, T.S. Komarova, E.E. Kravtsova, T.V. Lavrentieva, E.N. Sokolov, K.V. Tarasova, V.V. Yurtaykin, etc., have been studying sensory processes.

Sensory education is understood as a fundamental aspect in the development of all mental processes in a child: thinking, attention, memory, imagination, reality, and also it is the condition for the formation of the main type of activity of preschoolers known as a game. "The work of all sense organs develops and improves by involving a preschool-age child in activities, and also the ideas about the surrounding world are enriched" [1].

The purpose of this research was to study the conditions of sensory development of preschool children with intellectual disability.

Material and methods. We used the following methods: the study of psychological and pedagogical literature, experiment and observation, as well as methods of quantitative and qualitative data processing. When conducting the study, 5 techniques were selected and used: "Grouping of objects", "Find a pair of socks", "Disassemble and fold a matryoshka doll", "Collect a flower", "Phonematic component of auditory perception". The study was conducted on the basis of the SEI "Special kindergarten No1 Vitebsk", SEI "Children's home of Vitebsk". It was attended by 18 preschoolers with intellectual disability aged 5 to 8 years, of which 7 preschoolers have a mild degree of intellectual disability, 8 - moderate, 3 – severe.