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THE USE OF GAMING TECHNOLOGIES IN TEACHING CHEMISTRY

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Annotation
This article provides a methodology for using game technologies in teaching chemistry. Game technologies increase student activity, cause an increase in interest in science.

Keywords: game technologies," The longest word", "The most observant", "The third extra",
In connection with the transition to new standards of teaching, the development of education is characterized by an intensive search for new things in the theory and practice of teaching, new approaches to further improving the content, forms, methods and methods of teaching. New standards in education have forced everyone to take a fresh look at the quality of teaching both in higher education and in general education institutions, and, of course, these innovations have not bypassed the methodology of teaching chemistry.
In the innovative teaching methodology, the function of the teacher is reduced to the direction of the student to learn new things and develop effective independent work, as well as the ability to apply theoretical knowledge in practice.
The role of technology in teaching chemistry is high, as it helps to increase students' interest in the subject.
Game training — this is a form of the educational process in conditional situations aimed at recreating and assimilating social experience in all its manifestations: knowledge, skills, abilities, emotional and evaluative activity, the development of the child's abilities and the formation of universal educational actions, such as goal setting, planning, forecasting, control, correction, evaluation, self-regulation, the programs provide for active forms of work aimed at involving students in dynamic activities, ensuring their understanding of theoretical material and the development of intelligence, acquisition of practical skills of independent activity.
Unlike games in general, a pedagogical game has an essential feature – the presence of a clearly defined learning goal and a corresponding pedagogical result that can be justified, highlighted in a clear form and characterized by an educational and cognitive orientation.
Determining the place and role of game technology in the educational process, the combination of game elements and teaching largely depend on the teacher's understanding of the functions and classification of pedagogical games.
The specifics of gaming technology largely determines the gaming environment: there are games with and without objects, desktop, computer and with TSO.
The effectiveness of didactic games depends, firstly, on their systematic use, and secondly, on the purposefulness of the game program in combination with ordinary didactic exercises.
In adolescence, there is an aggravation of the need to create your own world, the desire for adulthood, the rapid development of imagination, fantasy, the emergence of spontaneous group games.

The features of the game in high school age are the focus on self-affirmation in society, the desire to draw, orientation to speech activity.

The use of didactic games in teaching has a number of psychological features. The most important psychological secret of the game is that it must necessarily be built on interest, pleasure. The game should cause a cheerful mood, satisfaction from a successful answer. It is important that the goal of the game is achievable, and the design is as colorful and diverse as possible.

Play is a voluntary and spontaneous activity. The feeling of free choice that accompanies the gameplay gives the student pleasure and joy. The activity organized on such experiences mobilizes the cognitive capabilities of students and helps to ensure that their independence appears fully and unhindered.

Games allow you to take into account the features of memory. In the process of interesting work and emotional activity, involuntary memorization occurs. Games also provide an opportunity to develop students' thinking, improve the mental operations of analysis, synthesis, generalization, concretization.

In games, an element of competition is mandatory, which always leads to increased self-control of students, their activation, and strict compliance with the established rules. In such games, it is important for them to win or win, which is a sufficiently strong motive that encourages activity and further participation in the game.

The games are also attended with great interest by underachieving students, who are carried away by the very process of the game, the spirit of competition, the desire for their team to win. Didactic games undoubtedly contribute to a better assimilation of knowledge, and positive emotions associated with success usually increase the quality of learning.

The business game is used to solve complex problems. The assimilation of new material, the consolidation of material, the development of creative abilities, the formation of general academic skills gives students the opportunity to understand and study the educational material from various positions.

Since 2010, in my work in the classroom and in extracurricular activities in chemistry, depending on the purpose of the activity, the subject of classes, I use game technology holistically or its elements. I believe that the use of this technology contributes to the development of students' activity in the process of learning and self-learning.

In the system of extracurricular activities, the main function of the game is to entertain, to give pleasure from the process and achievement of the goal, to inspire, to arouse interest.

Extracurricular classes are held in the form of meetings followed by joint project activities of students and teachers:

1. Choosing a topic. Organization of creative groups.
2. Search for information. Review of information, correction.
3. Preparation of presentations.
4. Summing up, analysis of activities, self-assessment.

The main result of the association's work is the KVN event.

KVNs were held with the theme:

"Water is the beginning of all beginnings";

"And the salt is all in chemistry";

"Not all that glitters is gold";

"Not everything that pours water."

The game has a very significant impact on the formation of positive motivation for learning:

- develops students' independence, their creative abilities,
- activates cognitive activity,
- contributes to the consolidation and deepening of knowledge,
- develops logical thinking,
- unites students into friendly teams connected by common interests,
- generates professional interest,
- facilitates the conscious choice of a future profession.

Thanks to the use of the methodology, conditions are created aimed at increasing the level of motivation of students in the study of chemistry, activating mental activity. This activity is confirmed by the positive dynamics of students' participation in subject-oriented competitions (scientific and practical conference "First steps in Science", subject Olympiads).

An electronic bank of methodological and didactic materials has been formed, selected from the point of view of the effectiveness of their use in the educational process in the study of chemistry.

New forms of intermediate certification of students have been introduced (protection of project works using multimedia presentations).

Organization of the traditional school-wide competitive event "Chemical KVN" and participation in it of all students studying chemistry (grades 7-11) it is also an important indicator of the effectiveness of the use of gaming technologies. Schoolchildren participating in the KVN are co-organizers of the game, annually develop an advertising program to attract other class groups to participate in the game and further participate in the event.

Game activity is used in the following cases:

- as a technology for mastering the concept, topic and even a section of the educational subject;
- as elements (sometimes very significant) of a more extensive technology (lecture and seminar scoring system);
- as one of several combined technologies (ICT and gaming technologies)
- as a lesson (lesson) or part of it (introduction, explanation, reinforcement, exercise, control);
- as technologies of extracurricular work (collective creative work).

A game in the educational process when studying chemistry

The sections of the work are provided with a multimedia application (presentations), designed in the form of appendices 1-5.

Knowledge of chemistry is not only knowledge of facts and theories, which are described in the lessons and in the textbook, but also the ability to explain chemical phenomena in the surrounding life.

The teacher's ability to arouse interest in the subject is one of the conditions for successful learning. The game "is to a large extent the basis of all human culture," wrote A.V. Lunacharsky. It is in the game that the child actively thinks, feels and creates freely.

The didactic game allows you to vividly realize all the leading functions of learning: teaching, educating and developing.

The ideas underlying individual games ("Chemical Domino", "Seven", "Chemical Alphabet") are presented in the description of general didactic games (see the list of sources used). In this paper, they

represent a more developed structure, taking into account the subject affiliation. The didactic (mostly meaningful) content of these games is the author's. Such variants of games as "The Most observant", "The Third Extra", "Find Me" have been developed and used by the author for many years.

This development is a ready-to-use material in the classroom. The structure of the development with explanations allows you to determine the place of a specific didactic game in the section, topic and within the lesson. It is possible to use these materials in extracurricular activities in chemistry.

The design of the material contributes to quick navigation when choosing a game.

Methodical development of educational games (with indication of recommended lesson topics).

1. The game "The longest word".

The game can be used at the stage of declaring the topic of the lesson.

The topic is "Electrolysis" (Grade 9).

The rules of the game are announced

A sign with letters appears.

Using letters, it is necessary to make the longest name of the substance. Each letter can only be used once.

The winner is the one who makes the longest word.

A	E	Z	D	S	L	E	F	R	K	I	O	T

Answer: azot, soda, oksid, kislota, elektroliz.

2. The game "The most observant".

The game can be used in the study and repetition of the topic "Periodic system of chemical elements of D.I. Mendeleev" (grades 7-11).

The game is based on the principle of integration of subjects: Uzbek language and chemistry.

Rules of the game:

The work completion time is 1 minute.

Using the Periodic System of Chemical Elements, find:

1. Which Russian scientist has 4 letters in his surname O. (Lomonosov).
2. Names of elements ending in – OR (bor, phosphor, chlor).
3. Names of saturated hydrocarbons ending in - AN. (alkan, cycloalkan).

3. The game "The third extra"

The game can be used in the study of classes of organic and inorganic compounds, as well as in preparing students for the Unified State Exam and GIA in chemistry.

When preparing for the game, you can use a multimedia presentation using triggers (or a "hot zone" – an object on the slide, clicking on which animates it).

Rules of the game

Find formulas of substances that do not correspond to logical chains.

1.Acids:

HCI HNO_3 H_2O
HBr HF H_3PO_4
H_2SO_3 H_2O_2 H_2SO_4

2. Oxides:

Na_2O CaO SO
NO P_2O_5 NO_2

Cl_2O_3 N_2O_5 BaO

3. Salts:

KBr HBr NaBr

NaCl $NaNO_2$ KOH

K_2CO_3 $BaSO_4$ H_2S

4. Hydrocarbons:

methane propane cyclopropane

C_2H_6 C_4H_{10} C_6H_{12}

benzole phenol toluol

5. Oxygen-containing organic substances:

ethanal ethanol acetaldehyde

glycine glycerin ethylene glycol

phenol toluene butanol

4. The game "Solve the formula"

Topics: "Simple and complex substances", "Metals and nonmetals", "Periodic system of chemical elements" (Grade 7).

The name of the metal and nonmetal is written under each letter (if there is no metal starting with this letter, then replace it with the name of the body).

The game takes into account the current repetition of previously studied topics.

Option – 1

E	**F**	**I**	**R**
Elektroliz	Faradey	Ion	Radon
Etalon	Fransiy	Indiy	Radikal
Element	Fenol	Ionization	Reniy
Elektron	Fosfor	Ion potensial	Radioaktiv

Option – 2

A	**Z**	**O**	**T**
Actinium	Zelinsky	Osmium	Thallium
Argon	Zaitsev	Oxide	Titanium
Aluminum	Zinin	Ozone	Tellurium
Alkaloid	Zol	Oswald	Toluene

The game can be used in the study of any topic, as well as in the generalization and systematization of knowledge on the topic.

Topic "Generalization and systematization of knowledge" (11th grade)

Rules of the game:

Under each letter are written:

1 the name of the chemical element,

2. name of the substance,

3. chemical concept,

4. name of reactions,

The winner is the one who writes all the words faster.

	W	**A**	**T**	**E**	**R**
Element	Wodorod	Alyuminium	Talliy	Eynshteyniy	Reniy
Substance	Vanilin	Almaz	Tiamin	Efir	Rodanid
The concept	Valence	Atom	Termodinamika	Element	Radikal
Reaction	Vulcanization	Alkylation	Trommer reaction	Etirification	Razlojenie

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