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SYSTEMATIC-ACTIVE APPROACHES IN CHEMISTRY LESSONS

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ANNOTATION *In the article, it is mentioned and explained based on the integration of school-institute-school, training students on the basis of a systematic-active approach.*

Key words: *systematic-active approach, school, student, chemistry, formation*

INTRODUCTION

The teaching method in which the student does not receive knowledge in a finished form, but in the course of his educational and cognitive activity, is called an activity method. According to A. Disterweg, the method of teaching is universal. Accordingly, it should work not only in primary classes, but also in all schools, even in universities. This method is suitable for every student, where knowledge is not yet acquired[1]. In this context, today's pedagogy is very interested in activity-based learning technologies.

The use of such technologies allows not only to arm the student with knowledge, but also to form his ability to act competently. Accordingly, learning should be a means of teaching action. Acquisition of knowledge does not occur before the beginning of the activity, but directly in its process, in the process of applying this knowledge in practice and because of such application. It is known that a person best acquires the knowledge that he uses in his practical actions, that he uses in solving some real problems.

Allows you to identify many ways to achieve this goal, we can only give examples of some of them:

Volume 1| Issue 9
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- use of different forms of chemical experiment (illustrative, research, problem)[3] to understand and implement educational situations;

- effective combination of classroom and extracurricular forms of educational process organization, organization of intellectual and creative contests, educational and research activities.

I will tell you in more detail about the use of chemical experiments in the implementation of a systematic-active approach to the study of the topic "Metals" in the 9th grade.

The experiment allows not only to discover new facts, but also to correct mistakes in students' knowledge, to clarify and correct their understanding of some issues of the chemistry course, as well as to draw conclusions.

A generalizing character. The topic "Metals" is one of the topics that experience is present in almost every lesson. The practical content of the content includes experiments on the interaction of metals with water, solutions of non-metals, salts and alkalis, experiments on corrosion and protection of metals from corrosion, qualitative reactions to metal ions, physical properties can be demonstrated.

Laboratory experiments are widely used in the formation of experimental skills and acquisition of new knowledge, which students perform independently in class or according to the attached instructions, because they are easy to do, but at the same time they have a strong impact on the students' emotions. makes a secret. These include, first of all, the recognition of metal salts, determination of the ability of metals to react when interacting with solutions of diluted acids, salts and alkalis, and other experimental tasks. Students observe, analyze the obtained data, explain them theoretically and draw conclusions during the experiment, which is carried out on the basis of a certain plan.

Experimental tasks are a continuation of laboratory experiments performed in the classroom. Pupils are invited to expand the range of studied phenomena or

Volume 1| Issue 9
ISSN: 2181-3639

demonstrate their own small inventions (find out the composition of drugs in a home first aid kit, the composition of various metal ions in them, determine the presence of water in gasoline or oil) and participate in project activities directs [4].

Practical work is a combination of elements of generalization and control of knowledge at the same time. During such activities, students deeply study the essence of experiments, think about their results and try to answer the questions that inevitably arise in the process of their formation. It is important that the experiment does not acquire an interesting character, the purpose of the experiments should be clear to the students from the beginning: to prove the truth of the theoretical position, to confirm or reject the working hypothesis[5].

In order to expand the volume of experimental information, qualitatively and completely generalize the material, the content of the experiment in practical work is slightly different from the visual experiment used in the study of new material. In my opinion, this additionally allows for a higher level of knowledge acquisition: students can apply their knowledge not only in a standard situation, but also in a similar, familiar situation, and some students are more advanced can reach the level of creative application of knowledge to solve problems, only in educational situations [6].

The main part of the problem-solving and research experiment is the optional activities for extracurricular activities. . A problematic experience can be both collective and individual. But in both cases, students acquire research skills: independently put forward hypotheses, draw up a research plan, process the obtained results and draw conclusions. These skills allow students to participate in project activities within the school's scientific community. With the concentric structure of the studied material, students first get a simplified idea of some chemical phenomena. Transferring these simplified images to more complex objects leads to errors (interaction of metals with nitric acid and concentrated sulfuric acid, interaction of active metals with salt solutions, etc.) [7]. Misunderstandings in the

Volume 1| Issue 9
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selection can be eliminated. Educational activities and elective topics are interrelated, they are distinguished only by the level of complexity of the material, which allows the use of problematic experiments (first of all, the content of experiments is related to phenomena and laws known to students should be based on a possible problematic situation, that is, the student should be in the zone of immediate development, secondly, other experiences that lead to an understanding of the problem based on the existing knowledge before these experiences should be shown; thirdly, experiences in which the problem is posed. interest arousal, arousing interest.) is continued in students' design work [8].

Through the science of "Chemistry", it is possible to create conditions for students' actions to be initiated, knowledge to be significantly increased, to be concretized, clarified, and systematized. This is confirmed by the achievements of students in examinations, intellectual and creative competitions, and the results of educational activities. Thus, it is possible to satisfy their cognitive needs and develop individual interests, which helps to increase professional competence in general[9].

As an example, let's evaluate the skills diagnosed when performing a contextual task on the topic "Nitrogen". Nitrogen. One of the most common elements on Earth. The main component of air (78.09% of the volume), its separation produces industrial nitrogen (more than %) goes to the synthesis of ammonia. Nitrogen is one of the main biogenic elements that make up proteins and nucleic acids. Nitrogen is produced industrially by fractional distillation of liquid air.

Nitrogen can be obtained by decomposing metal azides according to the following scheme: NaN3^ Na + N2|. This salt is used in airbags, the purpose of which is to slow the passenger forward for a very short time.

Liquid nitrogen is used as a refrigerant and for cryotherapy.

Industrial use of nitrogen gas depends on its inert properties. Gaseous nitrogen is resistant to fire and explosion, prevents oxidation, decomposition.

Volume 1| Issue 9
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Because of the strength of the triple bond in the molecule, nitrogen is chemically very inert, but reacts with lithium at room temperature. In an electric discharge, it reacts with oxygen and forms nitrogen oxide (II).

An important field of nitrogen application is its use for further synthesis of various nitrogen-containing compounds, such as ammonia, nitrogen fertilizers, explosives, paints, etc.[10,11].

RESULTS AND DISCUSSION

One liter of liquid nitrogen is vaporized and heated to 20°C, producing approximately 700 liters of gas. The principle of extinguishing fire with liquid nitrogen is based on this fact. When it evaporates, the nitrogen displaces the oxygen needed for combustion and the fire stops.

Formulation of tasks The nature of the diagnosed skills

1. Write the molecular formula of nitrogen. 2. Create a scheme for the formation of a nitrogen molecule. 3. Write the structural formula of nitrogen. 4. Show the type of chemical bond and the valence of atoms in the nitrogen molecule. Subject results: make formulas of substances; drawing up chemical bond formation schemes; creating structural formulas; determine the type of chemical bond and valency of atoms. Metatopic Results: Use character modeling

5. What is the reason for the chemical inertness of nitrogen? Subject results: description of chemical properties of substances.

Meta-topic results: use different sources for information, semantic reading

6. Is the method of obtaining nitrogen in industry chemical or physical? Justify your answer. Results of the subject: description of methods of obtaining substances, differentiation of physical and chemical phenomena. Meta-Theme Outcomes: The ability to establish cause-and-effect relationships, reason logically, and draw conclusions.

7. Why nitrogen gas is protected from fire and explosion. Subject results: the ability to analyze and objectively evaluate life situations related to chemistry. Meta-Theme

Volume 1| Issue 9
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Outcomes: The ability to establish cause-and-effect relationships, reason logically, and draw conclusions

8. Justify the statement that nitrogen fire extinguishing is the most effective fire extinguishing mechanism from the point of view of the safety of valuables. Subject results: assessment of the possibility of chemical interaction of substances. Metatopic results: - semantic reading; the ability to draw logical conclusions and draw conclusions; using science knowledge to solve real-life problems based on situational assessment.

9. Under normal conditions, nitrogen reacts with what substance? Write the reaction equation. Nitrogen in this process (oxidizing or reducing) Topic results: write equations for chemical reactions, identify oxidizing and reducing agents. Meta-theme results: semantic reading.

10. Write the reaction equation that represents the largest use of nitrogen in the chemical industry. Give the characteristics of classification of this reaction on the basis of "number and composition of starting substances and reaction products", "heat effect", "presence of catalyst", "change in oxidation states of atoms". Results of the subject: creation of equations of chemical reactions; classifies chemical reactions according to the number and composition of starting substances and reaction products, according to the heat effect, according to the presence of a catalyst, according to the change in the oxidation state of atoms. Meta-Topic Results: Use a variety of sources to obtain chemical information.

11. Write the equation for the reaction of nitrogen with oxygen. This reaction is "number and composition of starting substances and reaction products", "heat effect", "presence of a catalyst", Topic results: draw up the equations of chemical reactions, identify the oxidizing agent and the reducing agent. Metatopic results: character modeling, classification.

12. 112 L (N.O.) airbag deploys in one hundredth of a second. Calculate the mass of sodium azide needed to fill the pillow. Results of the subject: perform the simplest

Volume 1| Issue 9
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calculations on the equations of chemical reactions. Results of the subject: perform the simplest calculations on the equations of chemical reactions. Meta-subject results: modeling of signs, choosing the most effective methods of solving problems depending on specific conditions, establishing cause-and-effect relationships, building a chain of logical thinking.

13. Make one question about the text. Topic results: describe the composition, structure, properties and use of substances. Meta-theme outcomes: semantic reading, question formulation, learning task

14. Create a "Azof" cluster. Topic results: describe the composition, structure, properties and use of substances. Meta-topic results: personal attitude to the topic, following certain rules when creating a cluster, creating written messages, forming a personal opinion

CONCLUSION

Thus, contextual tasks help to form the ability to solve real practical problems and functional skills, open wide opportunities for evaluating the level of creative development and the potential of the individual.

REFERENCES

1. Stupnitskaya M.A. O'quv loyihasi nima? / M .: Birinchi sentyabr, 20.

2. Federal davlat ta'lim standartlari kontseptsiyasi umumiy ta'lim: loyiha / RAO; ed. A. M. Kondakova, A. A.

3.Kuznetsova. - M.: Ma'rifat, 2008. - (Ikkinchi avlod standartlari). Z. Surin Yu.V. Muammoli tajriba kimyoviy shakllardan biri sifatida tajriba // Maktabda kimyo.№9, 2007.

4. Verbitskiy A.A. Oliy ta'limda faol ta'lim: kontekstual yondashuv: l - Usul. nafaqa.- M.: Oliy maktab, 1991.- 207 b..

5. Dvulichanskaya N.N. Shakllanishning didaktik tizimi o'rta ta'lim muassasalari o'quvchilarining kasbiy kompetensiyasi tabiiy fanlar jarayonida kasbiy ta'lim tayyorlash: Dis. ... pedagogika fanlari doktori. - M., 20 N.

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6. Kurbanova A. Dj., Badalova, S. I. Case Technology in Chemistry Lessons// Academic Research in Educational Science. 2020, №1, Page. 262-265.

7. Kurbanova A. Dj. Case-study method for teaching general and inorganic chemistry// Academic Research in Educational Science. 2021, №6, Psge. 436-443.

8. Ёдгоров Б.О., Курбанова А.Дж. Применение ИКТ для совершенствования общего химического образования// Общество и инновации. 2021, №4/S, С. - 257-261.

9. Kurbanova A. Dj. Integration of chemistry and english in the teaching of chemistry// Academic research in educational sciences. 2021, №9, Page. 40-43.

10. Kurbanova A.Dj. Umumiy va anorganik kimyoni oqitish jarayonida talabalarni intellectual qobiliyatini shakllantirish// Academic Research in Educational Science. 2021, №4, 73-78 betlar.

11. Рустамова Х. Н., Курбанова А.Дж. Роль информационно-комуникационных технологий в преподавании общей и неорганической химии// Экономика и социум. 2021, № 5 (84), С.-1047-1057.