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USE OF INTERACTIVE METHODS IN CHEMISTRY EDUCATION SYSTEM

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Annotation
In this article the recommendations on the use of interactive methods in educational system. As the main factors of modernization of education innovative approaches are enlightened.

Keywords: Innovation, interactive methods, education, teaching chemistry, methods of traditional and non-traditional teaching, pedagogical innovation

INTRODUCTION

As in all fields, one of the urgent tasks is to achieve educational efficiency by introducing innovative technologies into the educational system, to further improve the quality of educational work, to train competitive personnel, and to create creativity in future specialists.

All efforts related to education are the joint mental and physical work, cooperative or independent work, activity of students, in the example of educators, educators, disseminators of knowledge, other officials, in short, students who are learning, educated, in general, students with teachers and trainers and creative thinking are multifaceted and complex processes.

Issues of increasing the efficiency of lessons and extracurricular activities are inextricably linked with the establishment of the educational process on a scientific basis and the practical application of modern pedagogical technologies. The main goal of organizing innovative activities in educational institutions, introducing innovations and new approaches to educational processes is to ensure the consistency of cooperation between teachers and students and to establish it in a goal-oriented manner on the basis of a clear plan. In this work, a careful solution of pedagogic-psychological and organizational issues is required. It should be noted that the participants of the pedagogical innovation must thoroughly acquire methodological, psychological, pedagogical, technological knowledge about the occurrence, manifestation of innovations and the laws of their management process. Otherwise, pedagogical innovations will not produce effective results.

In our opinion, the effectiveness of the innovative processes to be introduced into the educational system and the responsibility for fulfilling the requirements of the "National Personnel Training Program" depend on the conditions for the development and implementation of pedagogical innovations, on the appropriate, rational and integrated use of traditional and modern methods of education. In some cases, there are cases of abandonment of traditional methods that are effective. It is perceived as putting innovations against the teaching methodology that has been tested in experience and has been giving positive results. Therefore, it would be better if the positive experiences of the traditional education system were combined with innovations.

Innovative technologies are innovations and changes in the activities of teachers and students in the pedagogical process, and require the use of interactive methods in its implementation.

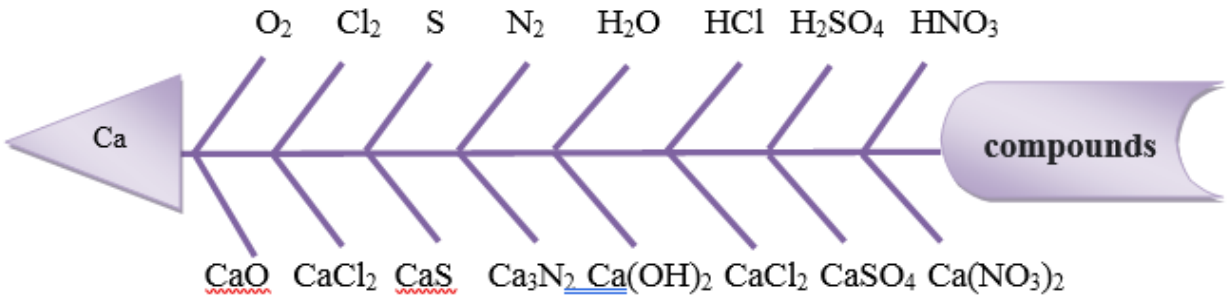
MATERIALS AND METHODS

Interactive methods are based on the activity of each student participating in the educational process, free and independent thinking. When using these methods, learning becomes an interesting activity for the student. When interactive methods are used, students acquire the skills and abilities to work independently with the help and cooperation of the teacher. Students acquire new knowledge on the basis of scientific research, research, experiments. The principle of gaining knowledge through science is followed. Participants of the educational process work in small groups. Assignments are not given to individual students, but to all members of a small group. Each member of micro groups tries to contribute to the task. This situation forms a sense of community among students and increases their initiative.

The main form of organizing the teaching process is the lesson. Currently, various non-traditional forms of lessons are introduced. Such classes serve to develop the student's creative ability, strengthen his intellectual potential, expand his scientific worldview, and develop the skills and abilities to quickly and fully accept every new thing. The use of innovative technologies in the course of the lesson arouses interest in scientific research in students, develops creativity and creativity. As a result, acquired knowledge, skills and abilities are applied in practical activities, the quality of learning increases. For this, the teacher should be skilled and properly plan the lesson depending on the content of the topics, and achieve active and conscious work of all students during the training.

For example, when teaching the topic of Calsium and its compounds, the chemical properties of calsium are studied using the "Fish skeleton" method in the following way.

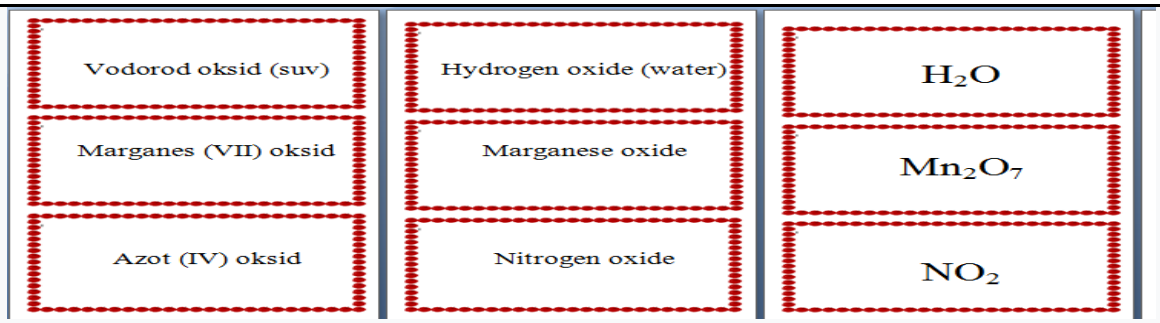
Handouts in A4 format will be distributed to small groups based on the "Fish skeleton" method. The groups work out the task within the specified time and present the group work.



Assignment to groups. Write the equation for the reaction of aluminum with the given substances and the formulas of the compounds formed on the bottom of the fish skeleton.

Pinboard (from English: pin- fixing, board - writing board) consists of adapting the methods of discussion or educational conversation with a practical method.

Students are divided into 3 groups. The teacher checks the homework with the students using the "Pinboard" method. For this purpose, cards with the name of oxide, base, acid, salt, formula and name in English are distributed to the groups. Students arrange the cards



The teacher shows the table with the correct answers. Groups check their work. The teacher summarizes the knowledge about the classification of complex substances.

Conceptual table It provides a comparison of two or more aspects of the phenomenon, concept, and ideas under study.

Develops the skills of systematic thinking, structuring and systematization of information

They get acquainted with the conceptual table of rules. They identify the comparable, distinguish the characteristics according to the comparisons.

They fill in the conceptual table individually or in small groups.

- Comparable in length (opinions, theories) are placed;
- Various descriptions are written for the bed comparison.

Presentation of work results

For example, when teaching the topic "Alkaline earth metals" in the course of inorganic chemistry, a new topic can be opened using the conceptual table method.

Alkaline earth metals	Meeting in nature	Taken	Physical properties	Chemical properties	Usage
Magnesium Mg					
Calcium Ca					

A modern teacher should pay special attention to the formation of students as well-rounded individuals. Therefore, it is one of the main problems to develop their oral speech, to ensure interdisciplinary communication, and to develop the ability to express their thoughts. The Cinquain method works well in solving this problem.

Cinquain is derived from French -cinquains, English -cinquain, and means 5 lines. Cinquain is a non-rhymed poem that helps to synthesize (bring together) information, in which information about the studied concept (phenomenon, event, topic) is collected and expressed by the reader's words in different versions and from different points of view. Syntax is an essential skill for expressing complex ideas, intuitions, and feelings in just a few words. The process of creating a cinquain helps to better understand the topic.

Rules for creating a cinquain:
Line 1: The topic is expressed in one word (usually a noun is chosen)
Line 2: The subject is expressed by two adjectives (2 adjectives are written)
Line 3: Three words describe the action within the topic. (write 3 verbs or adverbs)
Line 4: A four-word opinion is written that represents the attitude towards the topic (a sentence of 4 words is written)
Line 5: Write one word that repeats the essence of the topic and is close to it in meaning (write a synonym for the topic)
Examples of the following Cinquains on the subject of "Chlorine":

Chlorine – Cl_2
Yellow-green gas
It is poisonous, it dissolves, it catches.
It is used as a disinfectant.
Halogen

Chlorine – Cl_2
Oxidizing, reducing
It dissolves, poisons, evaporates.
Chlorine cannot be smelled.
Gas

Because the teacher is the main executor of the educational reform. In this case, it is important to train each teacher to learn, process and apply a large amount of information in a short period of time. The use of modern information technology, including computers, along with traditional methods of teaching, helps the teacher to solve it. The use of a computer in the lesson makes the teaching process interesting and allows an individual approach to each student.
First of all, it will be possible to convey a lot of knowledge, facts and information to students through the wide possibilities of information and communication technologies. Second, the full implementation of the teacher's innovative plans, ideas and thoughts is easy and efficient. Such processes are especially important in chemistry education.

RESULTS AND DISCUSSION

The interactive methods mentioned above are widely used in the process of teaching chemistry in the family education system and positive results are being achieved.
Interactive methods, which are the most important structural element of interactive learning, provide a certain level of efficiency in the implementation of educational goals. Most importantly, when choosing interactive methods, educators should pay attention to the topic, problem, or problem to be solved.

CONCLUSIONS

We believe that teaching students to successfully use interactive methods in their practical activities in the future is one of the main tasks of ensuring consistency and continuity in the higher education system.

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