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INTERACTIVE METHODS ARE AN IMPORTANT FACTOR IN IMPROVING THE EFFECTIVENESS OF CHEMISTRY EDUCATION

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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.

Key words: Innovation, interactive methods, education, teaching chemistry, quality and results of education, pedagogical innovation, the leading role of pedagogical person in system, Work in small groups, Venn diagram method

INTRODUCTION

One of the urgent tasks is to achieve educational efficiency through the introduction of 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 in educational activity are multifaceted and complex processes consisting of the cooperation of the teacher and mentors and the students who are learning and being educated, or independent work, activity and creative thinking.

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, the rational and systematic 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 training 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 microgroups tries to contribute to the task. This situation forms a sense of community among students and increases their initiative.

There are many types of interactive training, which are selected and prepared according to the characteristics of the subject of the lesson and the intended goals. Specific requirements are placed on the students' readiness to participate in the interactive training, such as mastering the necessary knowledge for active participation in the training, readiness for communication, working in mutual cooperation, independent thinking, own opinion including free expression and advocacy skills and more.

Effective use of time in training is a necessary condition. For this, it is necessary to correctly select and prepare the necessary tools, as well as clearly define the training providers and their tasks. There are specific differences between interactive methods and traditional teaching methods, and each teacher should compare these differences, their advantages and disadvantages in relation to each other, when choosing lesson planning and delivery methods. must be taken into account.

In this case, the most suitable interactive for imparting new knowledge, forming skills, developing, strengthening, repeating knowledge, applying it in training, and taking into account the characteristics of the academic subject for training on each subject. or the correct choice of other methods is assumed.

The use of correctly selected methods ensures that training is interesting and effective.

Interactive methods are related to the theory of constructivism, and the following main conclusions of constructivism should be taken into account when using these methods in practice:

The student must learn by himself, otherwise no one can teach him anything;

The teacher organizes a process that helps students "discover" knowledge;

Knowledge is not a copy copied from existence, it is formed by a person.

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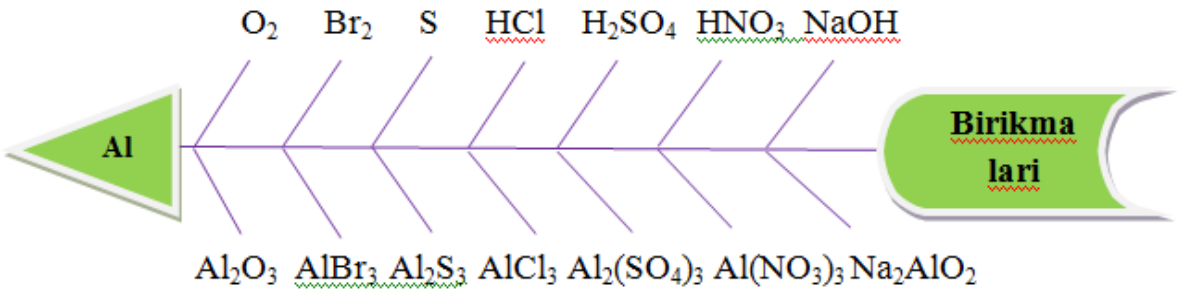
Interactive methods are related to the theory of constructivism, and the practical use of these methods is of constructivism

There are various effective methods, and some of them are used effectively in chemistry classes. For example, when teaching the topic of aluminum and its compounds from inorganic chemistry, the chemical properties of aluminum 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.



Work in small groups.

Students are divided into several groups and assigned to work on a specific issue or task related to the topic. They are given a certain amount of time, and after the allotted time, each group's decision and opinions on this topic are heard.

When training in the style of small groups, the following is achieved:

- active participation of each student is ensured and the possibility of monitoring and evaluating their activities increases;
- a quick solution to the problem is provided. Students will be creators of many new ideas in a short time;
- at any time of the lesson, the opportunity to increase the interest of students and to discuss in the whole large group is provided;
- some students hesitate to tell the teacher their personal thoughts on this topic, and in small groups they freely exchange ideas with their peers, that is, they are actively interested in the lesson.

For example, after the "Classification of oxides" topic, students are given cards with the formulas of oxides on the board. Pupils divide into 4 groups and write and name formulas related to them. Example: CuO, CO, CO_2, Al_2O_3, Fe_2O_3, Na_2O, BaO, BeO, SO_3, PO, SiO, SiO_2, ZnO, N_2O, CrO_3, MgO, K_2O, SO_2, NO, NO_2

Group 1: Basic oxides - CuO, Na_2O, BaO, MgO, K_2O

Group 2: Amphoteric oxides - Al_2O_3, FeO_3, BeO, ZnO, Cr_2O_3

Group 3: Acidic oxides- CO_2, SO_3, SiO_2, SO_2, NO_2

Group 4: Inert oxides - CO, PO, SiO, N_2O, NO

Then the work of the groups will be presented. Completed tasks are discussed and analyzed. Small groups are evaluated.

It can also be presented in the following form:

Basic oxides	Amphoteric oxides
CuO, Na_2O, BaO, MgO, K_2O	Al_2O_3, FeO_3, BeO, ZnO, Cr_2O_3
Oxides	
Acidic oxides	Inert oxides
CO_2, SO_3, SiO_2, SO_2, NO_2	CO, PO, SiO, N_2O, NO

Such an assignment can also be applied to topics such as bases, acids, salts, types of chemical reactions.

Also, in the teaching of the topic "General properties of halogens" from inorganic chemistry, learning through the "Step-by-step" method is carried out in the following way.

Handouts in A4 format will be distributed to small groups based on the "Step-by-step" method. The groups work out the task within the specified time and present their work on the board in a step-by-step manner.

Assignment to groups. Write down the general properties and compounds of the given halogen. Stairs by stairs

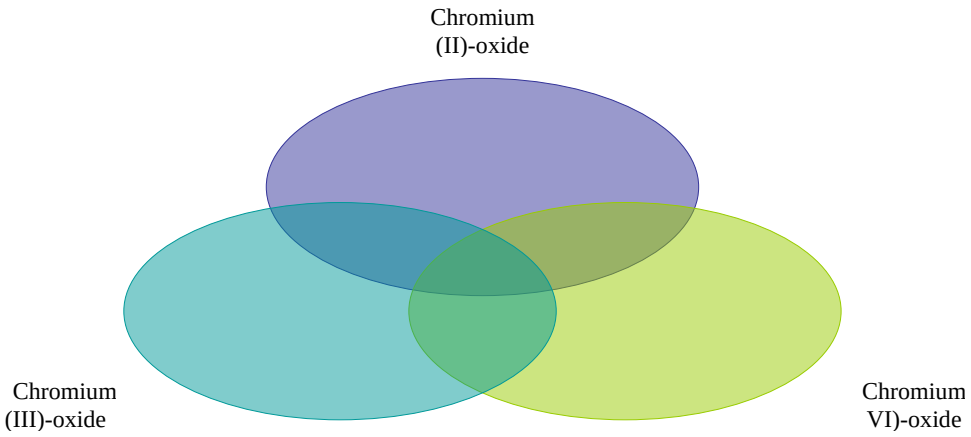
Topic	General properties of halogens
Fluoride	
Chlorine	
Bromine	
Iodine	

Venn diagram method

Venn diagram is in graphic form and is used in summarizing the obtained results and drawing a whole conclusion from them, comparing two or more subjects (view, fact, concept), analyzing and studying. A diagram is formed by the intersection of two or more circles.

Application of the Venn diagram method to the topic "2, 3, 6-valent compounds and properties of chromium" from inorganic chemistry

Assignment. State the similarities and differences between chromium oxides



The above-mentioned interactive methods are widely used in the process of teaching chemistry in the educational system and positive results are being achieved.

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, not limited to teaching based on innovative technologies, that is, interactive methods, is one of the main tasks of ensuring coherence and continuity in the educational system.

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