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APPLICATION OF MODERN "INTERVIEW", "WORD GAME", "BASIC PHRASES" METHODS IN TEACHING THE TOPIC OF THE MAIN TYPES OF NUCLEAR REACTORS

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Abstract
This article analyzes the relevance and scientific-theoretical basis of the problem of educational methods, presents the content and essence of the classification, theoretical and practical bases of educational methods in teaching teachers, and also uses modern methods in teaching the topic of the main types of nuclear reactors. advantages are listed. In the lectures and practical training, it is recommended to conduct classes based on modern methods and use them.

Keywords: Nuclear reactors, body, water, temperature, pressure, energy, interactive method, teacher, method, case-study, interview, word game, base phrases, cluster.

Introduction

Continuity of education means that a person has the opportunity to receive education from birth to the end of his life. Such a system is reflected in the Law "On Education" of our country. Higher education is an independent type of continuous education system that prepares highly qualified specialists. It is implemented in higher education institutions. Higher education provides training for highly qualified specialists. It is possible to use the results of scientific research on the pedagogical activity of a number of scientists of modern pedagogic theory to study the activity of a teacher of special subjects, but a number of problems related to his characteristics arise here. These characteristics are multifaceted and characteristic of different aspects of activity, but they can be conditionally divided into three large groups, each of which reveals the uniqueness of a separate aspect.

The Main Part

A teacher of a special subject has a set of general professional and technical-technological knowledge and skills based on his structure, structure and form of presentation, which is fundamentally different from the special knowledge of a teacher of a particular subject.

Only teachers of special subjects ensure the development of such people who are creatively sought after in finding their place in personal and social life in professional activity. In some studies, the following are the typical activities of a special subject teacher and their corresponding functions: educational, educational, developmental, methodical (methodological), production-technical, organizational, diagnostic, and in others: educational, educational, organizational-management, production-technological, research organizations are distinguished. Among the characteristics of the professional thinking of teachers of special subjects, there are specific aspects that are determined by the fact that the effectiveness of the field and socio-pedagogical thinking has not been fully studied at the moment. When studying the uniqueness of the activity of a special subject teacher, the process of perception (colour, sound, time, smell, etc.), attention (observation of biological, natural and social, technical-technological processes, etc.), speech-professional or the terminology of vulnerability etc. is of great importance [1].

Research Methodology

The article discusses modern interactive methods to increase the effectiveness of quality education in the educational process and describes the main structural factors and parts. Modern "Interview", "Word Game", and "Basic Phrases" methods for evaluating the quality of education were studied. Oynisa Musurmonova, doctor of pedagogy, professor, among the foreign and domestic scientists who contributed to the development of modern pedagogy. Norboy Ortiqov, doctor of pedagogy, professor, Abduqadirov Abduqahhor, I.P.Podlasi, professor, O.D.Raximov, O.M.Turg‘unov, Q.O.Mustafaev, H.J.Ro‘ziev and Azizxo‘jayeva N.N, Azarenkov N.A., Bozorov Erkin Haydarovich, Bulavin L.A., Zalyubovskiy I.I., Krichenko V.G., V. Vlasenko, V.N. Myasishev, L.M. Fridman's role and contributions are incomparable.

Results

Today, it is appropriate to consider the organization of globalization on the basis of compliance with the principles of science as the main factor for eliminating such problems. The unique possibilities of education are now connected not only with arming the human mind with new rapid possibilities but also with the reconstruction of its consciousness. A new stage in the development of human civilization changes a person's ideas about the formation process, personal qualities, life goals and values. For the young generation, the educational system sets new requirements in terms of quality. The improvement of the educational system, in turn, largely depends on the consistent introduction of new, modern, advanced pedagogical technologies in this field. Taking into account that the effectiveness of education is determined by the extent to which the student actively participates in this process, new teaching methods and forms provide students with an opportunity for independent thinking and a creative approach.

The use of modern teaching methods leads to high efficiency in the teaching process. It is appropriate to choose these methods based on the didactic task of each lesson. While preserving the traditional form of the lesson, enriching it with various methods that activate the activity of educators will lead to an increase in the level of mastery of educators. Interactive educational methods are currently the most common and widely used methods in all types of educational institutions. For this purpose, the lesson process should be organized rationally, the teacher should increase the interest of the students and constantly encourage their activity in the educational process, divide the educational material into small parts, brainstorm, small it is required to use methods such as group work, debate, problem situation, reference text, project, role-play and encourage learners to do practical exercises independently. When choosing interactive methods of teaching, the educational goal, the number and capabilities of learners, the educational and material conditions of the educational institution, the duration of education, the pedagogical skills of the teacher, etc. are taken into account. Interactive methods mean methods that activate learners and encourage them to think independently, with the learner at the centre of the educational process. When these methods are used, the teacher encourages the learner to actively participate.

The learner is involved throughout the process. Currently, the most popular interactive educational methods are: "Case-study" (or "Educational cases"), "Blist-survey", "Modeling", "Creative work", "Problematic education" and others. Interactive educational strategies. "Brainstorming", "Boomerang", "Gallery", "Zig-zag", "Zinamazina", "Muzyorar", "Rotastia", "Snowball" and others [2].

"Interview" method. The technological goal of the interview method: to get some information about the problem of each "Main type of nuclear reactors", to teach them to answer now, to strengthen the "Main types of nuclear reactors" topic. Just like the interview method, the interview method belongs to the question-and-answer method. Most of the time, the questions for the interview are made similar to sociological questionnaires, that is, to obtain many answers on the topic of the "Main types of nuclear reactors" that are being viewed. Such an approach to the interview method corresponds only to the first stage of research, to the stage of initial acquaintance with the problem. However, the questions created taking into account the knowledge and the structure of the studied mental characteristics can give very valuable results for the further determination of the structure and levels of the studied conditions. The procedure for conducting the technologist of the topic "Main types of nuclear reactors" of this method: the participants are divided into 3 groups and 1 expert, 3 journalists. Each group will make a presentation and a video clip on a pre-prepared topic. Then a journalist attached to the group comes to them, interviews and comments. The group is given 15 minutes to prepare. The most active participants in the group are determined by participating in a question-and-answer process on the topic "Main types of nuclear reactors".

The "word game" method is the technological goal of this method: it teaches listeners to think independently, express their thoughts freely, listen to others' opinions and draw conclusions. Game procedure: listeners are divided into small groups. Groups: For example, they think about the development of "Main types of nuclear reactors" and their role in the development of technology, and express their opinions in turn. In the "Word Game", groups choose cards, and from the information placed on them, information is given about the main types of nuclear reactors, principles of operation, and fields of application. The results are displayed on the board. After the teacher completes the "cluster" exercise on the paper with a word written on it, the teacher gives a task about the logical grouping of words. After the task is completed, feedback from the groups will be heard.

The "Basic Expressions" method The technological purpose of the "Basic Expressions" method is:

- increasing students' interest in science;
- to repeat all the topics covered;
- to test his real knowledge without using books and notebooks;
- to teach the student to concentrate and think quickly;
- involvement of all students in the group and evaluation of each student;

Training procedure

Divided into groups, students have distributed handouts with key terms covering the topic "Main Types of Nuclear Reactors". Students are given 2 minutes to introduce themselves. Then the teacher reads the scientific definition of the term "nuclear reactor" related to the topic, and the group of learners, after consulting with each other, increases the answers they think are correct after being given a command. (It is not possible to raise more than 1 answer, to raise an answer late.) In this way, all the definitions provided by the students are read, and the answers are marked on the board by the teacher. That is, the board is divided into 4, and a line is burned to the group that raised the correct answer. In the end, the answers are counted, 3 points are given to the group members who gave the most correct answers, 0.5 points to the group with average results, and 2 points to the students of the group with the lowest results. Expected results: All participants in the group are transformed from passive listeners to active participants. Encourages participants not only to know the scientific definition of terms but also to explain the tariff of this term in simple language. The participants will be able to master the topic "Main types of nuclear reactors" and will be taught to think quickly. A nuclear reactor produces energy by fissioning the nuclei of certain elements, and in nuclear power plants, the energy generated in the reactor is used as heat to produce steam and drive a steam turbine generator. It is known that the main goal of nuclear reactor research is to obtain neutrons produced in the reactor core and use them efficiently.

In all marine reactors, the steam engine directly drives the turbine. The components found in almost all nuclear reactor designs are listed below.

The fuel is typically uranium dioxide (UO2) pellets placed inside thin tubes known as fuel cells (FELs). The fuel rods are assembled into fuel assemblies (FA) that fill the reactor core. A moderator is a material that slows down neutrons produced in fission reactions to increase their chances of participating in subsequent fissions. It can be ordinary (light) water, heavy water or graphite. CPS rods (control and protection systems) contain a neutron absorber - cadmium, hafnium or boron. Their introduction or removal from the active zone allows them to control the intensity of the decomposition reactions and stop it. The IN additional or secondary reactor shutdown system uses the introduction of neutron absorbers into the cooling water, usually in liquid form (e.g., boric acid) [4-7]. A coolant is a liquid or gas that circulates through the reactor core to remove the heat generated in it. Reactor vessel or high-pressure channel piping. The casing is a tank made of strong steel, which contains fuel, a moderator and several other elements. In channel reactors, fuel assemblies are located inside channel pipes that serve to pass cooling water through them. A steam generator is part of a nuclear cooling system where heat from the reactor creates steam for the turbine. Shielding is a structure around the core or vessel of a reactor, which serves to protect it from external influences, as well as to protect the environment from radiation in the event of a reactor accident. It is usually a meter-thick concrete and steel structure. The design of nuclear reactor structures is based on three main principles.

The design of the reactor depends on the following parameters:

– the energy spectrum of the energies of neutrons that must be produced in its active zone (reactors in thermal or fast neutrons);

– configuration and structure of the core (homogeneous or heterogeneous arrangement of nuclear fuel, moderator, coolant);

– the purpose of using nuclear fuel (burning, conversion of raw materials - thorium-232 or uranium-238, re-production of secondary nuclear fuel).

In a homogeneous nuclear reactor, the fuel in the core can consist of molten metal, molten salt, aqueous or organic solution (liquid-salt reactors - ZhSR). In heterogeneous reactors, the fuel mainly consists of fissionable oxides or raw materials. Fuel material can be almost any combination of fissile and feedstock cores mixed or separated, as in the core (fissile material) - breeder zone (feedstock) concept. Currently, uranium is used as fuel: natural, containing 0.72% uranium-235, or usually enriched, the content of uranium-235 is increased to 2-4% in thermal neutron reactors (for example, VVER type - Fig. 1, 25, 26 -fig.) and enter up to 20% in fast neutron reactors. Currently, ceramic pellets made of UO2, PuO2 or their mixtures UO2 - PuO2 (MOX - fuel) are used as fuel in most nuclear power reactors. UC and BMT compounds without oxides are also tested.

Normal water H2O, heavy water D2O, beryllium, graphite or organic solutions are used as neutron moderators. The choice of materials for heat transfer fluids is wider. The following categories of materials are used as heat carriers:

– simple and heavy water (H_2O and D_2O);

– liquid metal refrigerants (K, Na, Zi, Bi, Pb, Hg, Ga, Sn), their compounds and alloys;

– gaseous heat carriers (gaseous CO_2, helium, water vapor, tetrameric oxide N_2O_4);

– organic refrigerants, mainly polyphenols (for example, diphenyl and diphenyl mixture "Dautherm" - 26.5% (S_6N_2)2 and 73% (S_6N_5)2O);

When choosing a cooling device, they are based on the type of reactor, construction materials and the possibility of obtaining the highest efficiency. reactor and economic indicators.

Conclusion

On the basis of interactive methods, students learn the essence of the lesson very well, and 80-90% efficiency is achieved. The principle of these methods is "Let me work and it will be mine for life". The high motivation and activity of students, as well as ensuring the organic relationship between the teacher and students, had a great impact on the improvement of the quality of education. Based on the use of these methods in education, it is possible to use them for technical subjects.

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