

APPLICATION OF INTERACTIVE METHODS OF TRAINING AT THE ORGANIZATION OF OUT-OF-CLASS WORK ON BIOLOGY

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In modern education, interactive methods of learning are gaining popularity, with the most effective combination of the material and the ability of students to make use of the knowledge gained in practice afterwards. In this regard, this research was carried out to test the effectiveness of interactive teaching methods in organizing out-of-class work.

Keywords: out-of-class work, interactive methods, environmental education

Out-of-class work is an important tool for the formation of the schoolchildren's environmental competencies. Out-of-class work makes volunteer-based, purposeful classes of students, that take place in their free time, under the supervision of the teacher, to excite and display their cognitive interest and creative initiative in expanding and supplementing the school curriculum on biology. Forms and methods of conducting out-of-class work are various.

Interactive learning offers the logic of the educational process that differs from the ordinary one: not from theory to practice, but from the formation of new experience to its theoretical comprehension through application. Interactive forms and methods of teaching are among the innovative and conducive to the activation of cognitive activity of students, independent comprehension of educational material. Interactive methods give the teacher an excellent opportunity to change pedagogical interaction, present it as a compulsory circumstance for optimal development of participants in the pedagogical process.

Formation of the schoolchildren's environmental competencies in the sphere of environmental protection through the use of interactive teaching methods will effectively solve the issues of sustainable development of the Republic of Belarus.

Out-of-class work was carried out on the basis of the Ostrovskaya secondary school among pupils of 8–11 forms,. Before and after the activities with the students, a questionnaire was given to determine the level of the students' ecological culture in order to make a conclusion about the effectiveness of interactive teaching methods. Based on the questionnaire data, two extra-curricular activities were developed. One extracurricular event included brainstorming and the composing of a sinquane and was conducted with a group of students of 8 and 9 forms (27 students). The second extracurricular activity included the construction of a cluster and the composing of a sinquane and was carried out with a group of pupils of the 10th and 11th forms (23 students).

As a result of the research, it was found that the use of interactive teaching methods is effective in organizing out-of-class work in biology (the percentage of interested students in environmental activities grew from 36 % to 96 %). The most effective method for mastering new material is the cluster construction method (85,1 % of students coped with the task). These interactive methods are also effective in mastering the material and motivation for students, they help to keep the students interested and attract their attention to a particular environmental problems.

THE EXPERIENCE OF APPLICATION OF INNOVATIVE PEDAGOGICAL TECHNOLOGIES OF STUDENT-ECOLOGISTS TRAINING

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The work evaluates the use of innovative technologies during the process of training on the "Human Anatomy" discipline.

Keywords: innovative technologies, computer technologies, method of discussion.

Educational technology - is a special set of forms, methods, ways, techniques and tools of teaching systematically used in the educational process on the basis of the declared psychological and pedagogical attitudes, which

always leads to the achievement of a predictable educational result with an acceptable rate of rejection. The relevance of the work due to the need of introducing in the learning process of modern practice-oriented methods of teaching in order to identify the most productive methods of teaching.

Innovative teaching methods were used during the learning of the discipline "Human anatomy" by the students of 1 course of Ecological Medicine Department of educational establishment "International Sakharov Environmental Institute of Belarusian State University". 114 students of the specialties of the Medico-biological affair and Medical ecology were involved into the research.

During the classes we used the following methods: the method of computer technology and the method of discussions. The introduction of computer technologies in the learning process creates the prerequisites for the intensification of the educational process. Computer technologies make it possible to use in practice psychological and pedagogical developments that ensure the transition from the mechanical assimilation of knowledge to mastering the ability to acquire new knowledge independently. Discussion methods are the group of methods of active socially-psychological training, based on communication or organizational communication participants in the process of solving their educational and professional goals. The control group classes were conducted according to the traditional methods of teaching.

As a result of the analysis of students' tests checking the level of students knowledge obtained during the lesson on the chosen methodology, it was established that the discussion method is more effective and cognitive than the method of computer technologies. The computer method of training was the least effective in this discipline and has low indicators of the results of testing due to the specificity of the discipline of human anatomy. Thus, this method of teaching is undesirable for use in this discipline and requires further development in the technique of its conduct.

The most effective and successful method in terms of the results obtained was the classical method of teaching in the control group. This is due to the fact that a classical lesson is the most common form of education for students of these specialties and the most convenient for teaching the discipline "Human anatomy".

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PROBABILITY OF HUMANLIKE COMMUNICATION AMONG VIRTUAL ASSISTANTS – CHAT-BOTS

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Chat-bots are programs that can simulate a user's communication with one or several companions. As a rule, they are created on the basis of applications such as Telegram, Facebook, Skype, Viber, etc. The main idea of using chat bots is to automate repetitive processes and interact with the user.

Keywords: chat-bot, Telegram, communication, artificial neural networks, automation.

One of the important features of the chat-bot is its dialogue with the user. Such dialogues can be divided into two types: rigidly constructed answers and simulating a dialogue based on an artificial neural network (ANN).

The problem of a dialogue built on unchanging answers is that the end user can't get the information he needs. If a question is not correctly formulated, the chat-bot will respond with the stub in it – "I don't understand you. Put the question differently".

The solution to the problem of understanding the user and the virtual assistant is the use of ANN. An artificial neural network is a mathematical model, as well as its software or hardware implementation, built on the principle of the organization and functioning of biological neural networks – nerve cell networks of a living organism. This concept arose when studying the processes occurring in the brain, and when trying to simulate these processes.

For the simulation of human-like communication, recurrent neural networks are used – the kind of neural networks in which feedback is available. The presence of feedbacks allows one to memorize and reproduce entire sequences of reactions. The relationship of the RNN is shown in picture 1.