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The Significance Of The Computer Simulation Method In Medical Education

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Abstract. Today's task of education is to teach students to be able to work independently in the information-educational conditions that are improving day by day, to use the flow of information wisely. Comprehensive reforms in the structure of the educational system will be strengthened by teachers by mastering advanced pedagogical technologies and using them in the educational process. For this, pedagogues are required to learn and apply the technological approach to the educational process. With the wide development of advanced technologies, in recent years, new pedagogical clinical work-game technologies have been effectively used to optimize education in medical universities.
Keywords. Pedagogical technologies, computer, simulation education, new pedagogical technology

The use of interactive forms of training in the educational process helps students to develop professional and general cultural competencies. The educational process, based on the use of interactive methods in the teaching process, is organized on the basis of involving all students of the group in mastering the educational material. Joint activity means that during this exercise, each student shares his knowledge, ways of working, makes his individual contribution to solving the situation.

Teaching is organized individually, in pairs and in groups, it is carried out through role-playing games, project work, documents and working with various databases. Interactive methods are based on mutual joint action, student activity, group work experience, concrete, reconnection, in which the communication environment of education is formed, that is, openness, mutual integrity of participants, their equality, characterized by mutual summation of knowledge, evaluability and control.

Computer simulation is a type of interactive form of teaching.

Simulation involves involving students in a "fictitious, real-life" situation for learning or assessment, rather this teaching method refers to the process in action or ongoing.

Educational simulation is a completely redesigned system of rules, tasks and strategies for a specific purpose, the formation of special competence, that is, direct application to real life. is a script structure created for use.

The trend of modern development of medical education requires the use of simulation techniques that allow to achieve maximum realism in the simulation of various clinical scenarios. It also allows you to master some diagnostic and treatment manipulative technical skills.

In the first stage of the training, the situation is assessed, the existing equipment, the object and the goal are determined, and the instruction is given in the form of a small lecture.

The second stage is the process of simulation training, in which the team members directly perform patient care and carry out the necessary resuscitation actions. Required: all members of the team should feel the reality of the situation as much as possible.

The third stage is conclusion, analysis of results. In this case, it should not be forgotten that the simulation reflects only real life, and there will be no personal mistakes, but general mistakes of the team. At the end of the practical session, the teacher and students discuss the results of the practice, the students' level of knowledge is assessed, and the success of the session is recorded.

Computer simulation means modeling the learning process and step-by-step implementation of its solution on a computer. Simulation reflects some parts of the environment, which are used in cases where it is possible to study the existence in other ways: from the point of view of ethics, from the point of view of security, material and technical. Simulation helps visualize abstract concepts. Students understand the purpose of the studied situation, its parameters with the help of manipulation possibilities.

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Computer simulation is an interactive form of teaching and has a wide range of possibilities:

- creates an image of a real attribute of the activity;
- the virtual analogue appears as in reality;
- creates an environment to exchange social or professional skills for real performance;
- is a form of control of the effect of professional education;

The following main components are distinguished in computer simulation:

- a working model or organizational-structure diagram of the professional environment, i.e., some aspects of human interaction and behavior are reflected;
- scenario (plot) of the simulation process, aimed at applying knowledge, developing intuition, searching for alternative non-standard ways of solving problems;

One of the strong advantages of computer simulations is that they can accurately estimate the concrete behavior of the hitters.

Computer modeling in medical education is divided into the following criteria:

- computer text simulators;
- computer graphic simulators;
- simulators using dummies;
- virtual reality simulators.

Let's look at each category separately:

Text simulators explain the situation with words, that is, the user chooses the correct one from pre-prepared answers. Depending on the answer, the computer will display the next situation. Based on the student's behavior, the program creates the next page with more choices.

Graphical simulators display the situation on the screen, they are often used to explain the processes related to pharmacokinetics and pharmacodynamics when taking drugs. Such a simulation helps to understand and master the learning materials, but does not develop practical skills in the student. Such simulators are suitable for modeling physiological and pharmacological processes.

With the use of mannequins, simulators vary in level of perfection and realism, mainly because they are expensive criteria for simulators. Modern options for automatic generation of mannequins' responses use a perfect computer model of human physiology and pharmacology. As opposed to text-based and graphical simulations, mannequin simulators help students develop practical skills that can be applied later in the clinic.

Virtual reality simulators have been widely used recently.

It should be noted that in order to improve the quality of teaching, time for students is strictly limited in computer simulation. When students were given unlimited time, it was found that the rate of mastering the learning material was low.

Computer simulation is rapidly used in pharmacology, for example, it is possible to theoretically assess and quantitatively measure the toxic effect of a drug on organs and tissues through this simulation. Computer modeling allows direct calculation of the physiological parameters of the drug's effect. In some cases, based on real data, as a result of a computer experiment, it is possible to predict the side effects of the drug that may be encountered in the future.

Nevertheless, the situation is considered virtual, training is carried out on the basis of real experience, bringing it closer to maximum practice in dynamics. Training like this is the most effective.

The advantages of simulation in the organization of the experiment are as follows:

1. The best teaching results can be achieved when it is based on an appropriate script. But it is impossible to achieve the expected goal by waiting for the life situation. Simulation quickly solves this problem.

2. Another advantage of simulation lies in the psychological state. During the simulation, the student feels twofold. On the one hand, it is safe, because the virtual character does not consider himself guilty of mistakes. On the other hand, he accepts all the achievements as his own.

This feature of simulation differs from role-playing, a common teaching method. Some students prefer simulated learning to role-playing, but both teaching methods have the same learning objective. A virtual

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simulation is a conditional environment. In this environment, the student's self-confidence increases, he considers himself freer than in the real situation.

The widespread popularity of simulation is connected with the rapid development of modern computer technologies. In addition, the graphics in HD mode create excellent special effects and the display of various colorful motions on the monitor screen gives the user aesthetic pleasure. Practice has shown that the simulation makes it easier for students to master the assigned competencies and then apply them to real life.

Summary. In order to develop simulation medical education, it is necessary to widely introduce simulation training in the continuous medical education system.

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