Research Article

MODERN METHODS AND TENDENCIES IN TEACHING INFORMATION TECHNOLOGY

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ABSTRACT

This article deals with the need of using active and interactive methods and forms of education in the preparation of specialists and bachelors at the university, as well as it is given examples, technologies and recommendations of implementing these methods in teaching information.

KEYWORDS

Information, technology, tendency, method, `modern, educational, standards, implementation, interactive, active

INTRODUCTION

In accordance with state educational standards, the implementation of the educational process should provide for conducting classes in interactive and active forms.

The number of classes conducted in interactive forms for most undergraduate programs should be at least 20 percent of the classroom, and for the specialist's programs should be at least 30 percent of the classroom.

The introduction of interactive forms of education is one of the most important areas for improving the preparation of students in a modern university. Evidence from many studies confirms that the use of

active approaches is the most effective way to promote student learning.

THE MAIN RESULTS AND FINDINGS

In the learning process, it is necessary to pay attention, first of all, to those methods in which students identify themselves with the educational materials which are included in the situation being studied and also which are encouraged to take active actions, experience a state of success and, accordingly, motivate their behavior. All these requirements are best met by interactive teaching methods [1].

The active method is a form of interaction between students and the teacher, in which they interact with each other during the lesson and the students here are not passive listeners, but active participants, students and the teacher are on an equal footing.

Interactive methods can be considered as the most modern form of active methods. Compared to other methods, interactive ones are focused on a wider interaction of students not only with the teacher, but also with each other and on the dominance of student activity in the learning process [1].

The activity of the teacher gives way to the activity of students, and the task of the teacher becomes the creation of conditions for their initiative.

Thus, active and interactive methods include only those that are based on psychological mechanisms of strengthening the influence of the group on the process of mastering the experience of interaction and mutual learning by each participant. Such methods are innovative educational technologies [2].

Interactive teaching methods can be divided into gaming and non-gaming. Game interactive teaching methods: business training game, role-playing game,

psychological training. Non-game interactive teaching methods: case-study analysis, group discussions, brainstorming, cooperative learning methods.

In addition, the teacher can use not only the currently existing interactive forms, but also develop new ones depending on the purpose of the lesson, combine several teaching methods to solve the problem [2].

In the process of studying various disciplines such as "Computer Science" and "Information Technology", active and interactive methods and forms have found their place and application.

Among these teaching methods is the interactive lecture, which combines aspects of the traditional lecture and the training game. It makes sense to use this lecture format in cases where you (or another subject expert) are the carrier of unique information and when the resource of time and other information sources is limited [2].

The massive transition in education from a specialist to a bachelor's degree leads to a reduction in the number of hours for classroom work and an increase in the role and number of hours for independent work. However, the amount of material does not change, on the contrary, the requirements for knowledge, skills and knowledge of the student only increase. This is especially true for the ability to apply the acquired knowledge in solving professional problems and in official activities.

This leads to the fact that classroom activities, especially lectures, include a large number of educational questions, problem situations, various tasks that you need to continue to work with then on your own.

For example, when studying the discipline "Informatics and Information Technologies in Professional

Activities" (specialty "Law Enforcement"), the introductory lecture "Introduction to Informatics and Information Technologies. Subject, objectives, structure and content of the course" may include the following educational issues: information, informatics, information technology; types and properties of information; units of measurement of information; information encoding; the need for informatization of law enforcement agencies; the role and place of information support in the activities of law enforcement agencies.

The problems of limited time and a large amount of material can be solved by using an interactive lecture and independent extracurricular work after it. The lecture session is built according to the plan: actualization and generalization of knowledge; deepening knowledge on the topic of the lesson; express audience survey; summarizing.

The interactive form of teaching in a lecture session implies, first of all, the use of multimedia tools, as well as a dialogue with the audience, since the lecture material is based on knowledge of the school computer science course. It is advisable to involve students in the discussion when solving problems for measuring the amount of information.

Information technologies make it possible to use multimedia tools (presentations, videos, animation) in interactive lectures and turn it into a visualization lecture. Its application is connected, on the one hand, with the implementation of the problematic principle, and on the other hand, with the development of the visibility principle. In a visualization lecture, the transmission of audio information is accompanied by the display of various drawings, structural and logical diagrams, reference notes, diagrams (slides, filmstrips, videos, films, etc.).

Such visibility compensates for the lack of entertainment of the educational process. The main emphasis in this lecture is on a more active inclusion of visual images in the process of thinking, that is, the development of visual thinking. Relying on visual thinking can significantly increase the efficiency of presentation, perception, understanding and assimilation of information, its transformation into knowledge. However, it is necessary to take into account the possibility of negative consequences in case of excessive overload of the visual perception channel [2].

In information technology workshops, cooperative learning methods can be used: for example, learning technology in small groups.

To cooperate within the framework of the educational process means to work together, combining their efforts to solve a common problem, while each "cooperating" performs its specific part of the work. Subsequently, students should exchange their knowledge. The essence of this method:

"Everyone achieves their learning goals only if the other members of the group achieve theirs."

The scheme of cooperative learning, in principle, is quite simple. After receiving assignments and instructions from the teacher, the student group is divided into several small groups. Then each small group works independently on the task until all its members understand it and successfully complete it. The result of cooperative efforts is a common benefit, since success in completing tasks is determined by the nature of the activities of each member of the group. The social significance of such a learning model is also obvious: the role of each student in the implementation of a common task is emphasized,

group consciousness, positive interdependence, and communication skills are formed [2].

When teaching computer science and information technology in practical classes, you can use work in small groups or pairs, which is convenient to implement when working at a computer. Students in a group receive a common task, which is divided into parts, performed by each independently; the result is joint work. Interaction with each other in the process of work will provide not only an increase in knowledge, skills, methods of activity and communication, but also the disclosure of new opportunities for students, will be a necessary condition for the formation and improvement of competencies through the inclusion of participants in the educational process in a meaningful experience of individual and collective activities for accumulation experience, awareness and acceptance of values [3].

R. Trebor Scholz noted the widespread use of information technologies (i.e. computer and telecommunication means) in interactive learning - as a means of interaction between students, a teacher or training programs. [4].

CONCLUSION

The following main components are required for the implementation of information technologies for teaching at a university: hardware and software, a qualified teacher and electronic educational resources.

Thus, active and interactive teaching methods allow creative application of knowledge in solving practical problems and change not only the experience and attitudes of the participants, but also the surrounding reality.

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