

PRINCIPLES OF MODULAR TEACHING TECHNOLOGY

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ABSTRACT

The fundamental reforms implemented in the field of education in our republic ultimately provide for the training of competitive personnel with knowledge and skills at the level of world requirements. The system of knowledge and skills learned from the experience of developed countries finds its creative reflection in the State educational standards, curricula and programs developed for the purpose of implementing these tasks. In this system, professional skills also have an important place with their importance and scope.

Keywords. Principle, equality, quantification of activity, motivation

INTRODUCTION

The modular technology of teaching is developed and implemented in accordance with the accepted principles of teaching. The following principles form the basis of modular teaching technology:

1. **Principle of activity approach:** This principle means that the modules are formed according to the content of the specialist's activity.

According to this principle, modules can be built on the basis of a subject activity approach or a systematic activity approach. In the modular teaching technology, it is necessary to create modules as a result of the analysis of the curriculum and programs in the activity approach of science. In the approach of systematic activity, a block of modules is formed based on the professional activity analysis of a specialist.

2. **The principle of equality, equal rights.** This principle determines the nature of the subject-subject interaction between the teacher and the student. This shows that the technology of modular training belongs to the category of technology that is oriented towards the individual. That is, the modular teaching technology is adapted to the individual psychological characteristics of the person .

3. **The principle of systematic quantization.** This principle is based on the requirements of the approach of providing information, the concept of engineering knowledge, and the theories of enlarging didactic units.

In addition, this principle requires taking into account the following psychological and pedagogical laws:

- a large amount of educational material is remembered with difficulty and unwillingly;
- educational material given in abbreviated form in a certain system is easier to learn;
- the separation of basic parts in the educational material has a positive effect on the activity of remembering.

Along with this, it is necessary to form the basis of educational material scientific and fundamental.

The principle of systematic quantization is implemented by creating an appropriate structure of the training information in the module.

In general, the module can consist of the following elements:

- historical - to give brief information about the history of problems, theorems, issues, concepts;
- problematic - the formation of a problem;
- systematic - this is a systematic manifestation of the module content;
- activation - highlighting the basic phrases and methods of action necessary for mastering new educational material;
- theoretical - this is the main educational material, in which - didactic goals, statement of the problem, substantiation of the hypothesis (hypothesis), ways of solving the problem are revealed;
- experiential - describing experiential material (educational experience, work, etc.);
- generalization is a description of the solution to the problem and a summary of the content of the module;
- application is the development of new methods of actions and a system of problems for applying the learned material in practice;
- errors - to reveal one type of errors observed by the student in mastering the content of the module, to determine their cause and show ways to correct them;
- connection - showing the connection of the passed module with other modules, including related subjects;
- deepening - presentation of highly complex educational material for gifted students;
- testing - control and evaluation of the level of mastery of the module content by students with the help of tests.

The degree to which the practical importance of the module is revealed during training, the connection of the module content with other modules, and the analysis of the same mistakes of students in learning this module are important for the learning of the educational material.

4. The principle of motivation (awakening interest). The essence of this principle is to stimulate the student's learning activity . This is the basic rule. Arousing interest in the educational material of the module, encouraging learning, encouraging active creative thinking during training, are the tasks of the historical and problematic elements of the module.

In fact, many factors influence the formation of motivation, because learning is an individual process. It is done through personal motivation and self-interest. Motivation is understood as the reasons that lead to action, arouse interest. It is appropriate to divide these reasons into three groups:

A. The environment in society that forms the desire for education.

Modern society is a civil society based on knowledge. That is, information, knowledge, their constant updating, the necessary skills to implement this , are the main factors of the development of the society.

Related to basic needs .

According to the opinions of foreign psychologists is as follows:

- existence , i.e. the need for a person to satisfy the needs of hunger and thirst first.
- security - peace of mind, i.e. trying to satisfy needs such as building a house, building a family.
- social needs, that is, needs to belong to a certain section, club, public organization.

related to the teaching process .

In the process of teaching, motivation is achieved by taking into account the following factors: Nowadays, in the period of advanced scientific and technical development, the effectiveness of education depends on the level of use of human abilities . Realization of the ability directly depends on the extent to which human sensory organs are involved in receiving information. A person perceives the surrounding world through his five sense organs: eyes, ears, smell, touch, touch and sight. The more sensory organs are involved in learning, the more effective it will be. Visualization, i.e. the use of visual information and examples, helps to maintain motivation during training and to raise the quality of learning to a high level.

Effectiveness of teaching depends on the role of the student in the teaching process and the attitude of the pedagogue to the formation of motivation and its maintenance. The relationship between teacher and student is very important for the formation of motivation. It is desirable that these relations correspond to the principles of person-oriented teaching technologies .

Optimism leads to strengthening of confidence and will. Ultimately, motivation increases and the planned learning outcomes are achieved. And the reprimand method (warning, reprimand, warning about negative results, punishment) leads to the formation of a situation like pessimism. As a result, confidence and will decrease sharply, motivation is lost, planned educational goals are not achieved. To some extent , the student as a person experiences a moral crisis.

Formation of motivation necessarily depends on the student's personal situation. First of all, the student's "attention" and "fatigue". characteristics are taken into account. The time for careful study of the results obtained by foreign scientists is 20 minutes at most. Sufficient attention is kept for 45 minutes in theoretical classes. After about 60 minutes, attention falls to the lowest level (decrease 3-4 times). It is especially noteworthy that it is taken into account today. The use of new pedagogical and modern information technologies leads to the acceleration of the teaching process. That is , it is possible to present many new educational materials several times at the same time.

The use of problem-based learning technology effectively helps to form motivation at a high level. In addition, the student learns the formation of a problem and ways to find its solution. It is inevitable that the use of interesting information from historical situations, interesting events, instructive phrases, articles and similar information in the process of explaining new educational materials will have an effective effect on motivation.

During the teaching process, the behavior of the pedagogue, the ability to manage the audience, the speech culture, the attitude to the new educational material, the manifestation of inquisitiveness and curiosity, and the impressive actions of the teacher certainly do not leave the students indifferent, increase their activity and motivation.

5. The principle of modularity . This principle serves as the basis of individualization of teaching.

First, the dynamic structure of the module provides an opportunity to present the subject content in three different ways:

- full
- abbreviated
- deepened.

The choice of one or another type of teaching is left to the student.

modularity is manifested in the mastering of module content, in the variety of methods and forms. It can be activated forms and methods of teaching (dialogue, independent reading, educational and simulation games, etc.), as well as problem lectures, seminars, consultations. Thirdly, modularity is provided in the step-by-step mastering of new material, that is, teaching in each subject and each module is oriented from simple to complex.

Fourth, due to the adaptability of the educational elements included in the module, the possibility of regularly updating the educational material is provided.

6. Problem principle. This principle makes it possible to increase the effectiveness of learning material due to practical orientation of problem situations and exercises. During the training, a hypothesis (hypothesis) is put forward, its validity is shown, and a solution to this problem is given. In most cases, our teachers only present evidence in the lessons (even if they are new), but for example, in the USA, the teacher teaches the method of studying the problem, the ways of solving the problem, the nature of the experience, shows and explains its results. That is, he appears as a researcher .

First of all, this is what interests the student, creates creative thinking and activity in him.

7. Cognitive visibility (observable by eye) principle. This principle is derived from psychological and pedagogical laws, according to which exhibitions in teaching increase the productivity of learning only if they perform not only the image task, but also the cognitive task.

That is why cognitive graphics is a new problem area of the theory of artificial intelligence, in which complex objects are represented in the form of computer pictures. The structural structure of the module is made up of colorful, cognitive-graphic educational elements (block of pictures). That's why pictures are the main element of the module. And this:

First, it develops the student's ability to see and think spatially, that is, the rich possibilities of the visual right hemisphere of the brain are added to the learning process.

Secondly, a photo (picture) that clearly shows the contents of the educational material , helps the student to form systematic knowledge.

Thirdly, colorful pictures increase the effect of learning informational material acceptance and recall, and serve as a means of aesthetic education of students.

A person's learning is like thinking using two mechanisms: one of them is symbolic (conventional), and the other is geometric (algebraic).

The main task of cognitive graphics is to create integrated models of the learning process, including symbolic and geometric (algebraic) mechanisms of activating thinking.

Graphic (visual) information activates the capabilities of the right hemisphere of the brain, develops visual thinking ability, intuition (inner feeling), necessary for a highly educated specialist. As the great scientist A. Einstein said, "Intuition is the greatest wealth in reality. I am convinced that our thinking is mainly through symbols without us even realizing it . In reality, it is difficult to imagine the formation and development of science without a hypothesis (hypothesis), and the creation of a hypothesis without intuition.

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