

Efficiency Of Using Modular Teaching Technology In Educational Process

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Abstract: the article is based on analyzing the effectiveness of implementing modular training technology in teaching process. As well as, author analyses the steps of its usage.

Key words: module, individual, independent, Self-assessment, disciplines, abilities, learning system.

At the present stage of economic development, when in most countries there is a transition from the industrial to the information era, which is characterized by the use of software-controlled equipment, computers and other technical communications, high demands are placed on the training of workers and specialists. The main indicator of the level of qualification of a modern specialist is professional competence, which includes substantive and procedural components, which are a connecting chain of knowledge, skills and abilities. In contrast to the generalized “social order of society” for specialist training, professional competence expresses the real level of training, offers constant updating of knowledge, possession of new information to successfully solve professional problems in specific conditions. A specific specialist should know the essence of the problem, be able to solve it in practice, and have the flexibility of the method.

To implement these requirements, there is a continuous improvement of the training system. The most common subject-based learning system today is undergoing significant modernization aimed at integrating subjects into a new quality and the transition to a modular learning system.

The technology of modular training is one of the systems for organizing the educational process, which focuses on the development of the child, allows you to reduce the training course of disciplines without compromising the completeness of presentation and depth of the material.

Modular learning has emerged as an alternative to traditional learning. It is it that integrates in itself everything that is progressive that is accumulated in pedagogical theory and practice. So, the idea of student activity in the process of his clear actions in a certain logic, the constant reinforcement of his actions on the basis of self-control, the individualized pace of educational and cognitive activity is borrowed from programmed instruction. From the theory of the phased formation of mental actions, its main essence is used - the indicative basis of activity.

Self-assessment is used in module education, which teaches a child to objectively evaluate his abilities, the results of his work. The student maximally works independently, learns purposefully. This makes it possible to become aware of oneself in activity, teaches self-organization, self-assessment, allows each student to see the level of assimilation of knowledge.

Modular technology is built on the basis of developing learning: if a student fulfills a task with the help of a teacher and comrades, he is in the zone of his closest development. This approach contributes to the maturation of the functions of the psyche of the child: what he does with the help of others, tomorrow he will be able to, i.e. one cycle is completed, the student goes into the zone of active development, and the round is untwisted at a new stage. In modular training this is realized by differentiating the content and certain help to the student, as well as organizing activities in different forms - individual, group, in pairs of permanent and shift staff.

What is the teacher's system of preparation for the transition to modular education?

First of all, it is necessary to develop a modular program, consisting of a comprehensive didactic goal and individual modules, the quality of which depends on the effectiveness of training.

To create a modular program or a separate module, the teacher must first develop the module steps:

1. To highlight the core (main) ideas of the course.
2. A complex didactic goal is formed, which has two levels:
 - a) the level of assimilation of the educational content by the student;
 - b) the use of educational content in practice, as well as for the study of educational material in the future.
3. The allocation of integrating didactic goals.
4. The modules are formed, which together provide the achievement of a complex didactic goal.

Benefits of Modular Learning

1. Everyone works independently at his own pace.
2. There is an opportunity to get advice from a teacher, help from a friend.
3. Significantly deeper to realize the content, to control yourself all the time.
4. Each student is involved in an active cognitive activity.

What is interesting modular technology?

1. An individual approach to each student is carried out (you approach, you can immediately see if the student understood the topic or not).
2. A condition is created for the development of strong students (they do not wait for the rest, they themselves further understand the tasks).
3. Differentiation in training (independent work in the lesson).

The core of modular learning is a training module that includes: a complete block of information; target program of action of the student; recommendations (advice) of the teacher on its successful implementation.

The fundamental differences between modular learning and other learning systems are as follows:

1. The content of training is presented in complete independent complexes, the assimilation of which is carried out in accordance with the goal, which contains the volume of the studied content and the level of its assimilation, as well as the student receives advice from the teacher on how to rationally act.
2. The form of communication between the teacher and students is changing (individual communication between the governed and the governor).
3. The student works maximum time on his own.
4. The student learns to set goals, self-planning, self-organization and self-control.

Having carefully studied the theory of modular learning, we can formulate the main goal - this is to promote the development of students' independence, their ability to work, taking into account individual ways of working out educational material.

Scientific Ideas for Modular Learning

1. On the activity principle. Only then the educational content is consciously assimilated when it becomes the subject of the student's active actions, moreover, not episodic, but systemic. Therefore, when developing tasks, the teacher relies on the teaching structure, orientates schoolchildren on the goal of educational activity, motivates its adoption, and determines the system of student self-control and self-assessment, thus ensuring a self-guided reflective educational process.
2. Modular technology is built on the ideas of developing learning.
4. The intensive nature of the technology requires optimization of the learning process, ie achieving the best result with the least expenditure of effort, time and money.

The sequence of constructing the module itself

1. The construction of a module always begins with the formulation of an integrating goal.
2. Then the task is given for incoming control, the purpose of which is to establish the willingness of students to work.
3. All private didactic goals are determined and educational elements are created, which include the target setting, student action algorithms and a test task for controlling and assimilating knowledge and skills.
4. The last element of the resume module, which summarizes the tasks, is filled with content.
5. The tasks of the output control are compiled. Their meaning is to identify the degree of mastery of the content of the module.
6. Thought out the structural-logical schemes of generalization of the material of the module and possible errors in their construction.

The creation of training modules is subject to the system of requirements for tasks, to the activities of students and teachers. Consider the features of the tasks in modular training: 1 - tasks carry out the continuity of intra-subject and intersubject communications; 2 - differentiation in content and level of cognitive independence; 3 - problematic and focus on finding problems and their solutions; 4 - reflects the mechanism of assimilation of knowledge; 5 - includes the repetition of the studied (compilation of tables, diagrams, comparative characteristics, etc.); 6 - are integrated by the purpose of the module.

Thus, the transition to modular training will be done in the following sequence:

Stage I: The division of disciplines into macro modules.

Stage II: Establish the optimal sequence for learning science when the learning cycle is compressed.

Stage III: Ensure interdependence of the curriculum for macro module Sciences.

Stage IV: Formation of module modules.

Stage V: Development of training and demonstration material for the module

Stage VI: Design of teaching technology based on modular learning principles.

Stage VII: Develop a schedule of lessons, taking into account the optimal number of subjects studied at the same time.

The organization of the learning process can be viewed as an integral part of the modular learning system.

One of the features of the modular learning system is the acceleration of the learning process, which can be explained in two aspects.

“Compression” of educational information based on the principles of modular learning in the learning process;

Optimizing the training schedule and the timetable based on 'compression' of the learning period.

Form of effective organization of the educational process is weekly modular planning of lessons and rating of knowledge of students. That is, one module (2-3 lectures and their practical and laboratory work) should be scheduled for one week, which should be completed by assessing student knowledge through tests or other forms of control.

The following benefits can be obtained by the content of the module:

- ensuring continuity of learning between modules and interdisciplinary modules;
- establishment of methodological justifications for all types of training within each module and between them;
- flexibility of the module structure of science;
- regular and effective monitoring of students' knowledge (after each module);
- stratification according to the students' immediate abilities (after the initial modules, the teacher may recommend individual students to master the subject);

• Optimizing the hours allocated for lecture, practice (practice), individual and independent work as a result of "compression" of information, accelerating learning, effective use of classroom hours, and classroom content. As a result, the learner will have sufficient knowledge, skills and qualifications.

The modular learning technology based on scientific activity is implemented through pedagogical and technological maps developed for each module.

Thus, training of highly qualified specialists using module training is provided on the basis of:

- Continuity of teaching (which increases the effectiveness of learning subjects);
- Accelerated learning as a result, much of the information is absorbed through computer networks, both individually and independently;
- individualization of learning (the learner will have the opportunity to learn according to his abilities).
- Providing sequential mastering of modules designed for a particular subject, taking into account the activities of an expert is the essence of modular teaching technology based on a science approach. Optimization of this learning process allows adaptation and individualization of teaching.

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