



Characteristics of Pedagogical Technologies. Modular Technology

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ABSTRACT

Modular training is a method of structuring the educational process based on the presentation of educational information in a block-modular manner. Modular learning has a long history as an educational tool. The article describes its history, structures, differentiation from other techniques, ways to develop a training module and all its aspects.

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The core of modular training is that the student completes specific educational and cognitive exercises totally independently (or with a bit assistance) while working with the module. A module is a target functional unit that combines instructional content and mastery technology into a high-level-of-integrity system.

Thus, the module functions as a modular learning tool, as it includes:

- target action plan,
- bank of information,
- methodical guidance for achieving didactic goals.

It is a module that may be used as a training program, with material, teaching techniques, independence levels, and the tempo of the student's educational and cognitive activities all being customized.

In the essential characteristics of modular training, it differs from other training systems.

First, the content of training is presented in complete self-contained complexes (information blocks), the assimilation of which is carried out in accordance with the goal. The didactic aim is formulated for the learner and includes not only the volume of the subject being studied, but also the level of assimilation.

Secondly, the form of communication between the teacher and the student is changing. It is carried out through modules and personal, individual communication. It is the modules that make it possible to transfer training to the subject of a subjective basis.

Thirdly, the student works as much time as possible on his own, learns to plan his activities, self-organization, self-control and self-esteem. The teacher also manages the educational and cognitive activity of students through modules and directly, but this is a purely purposeful management.

Fourthly, the presence of modules with a printed basis allows the teacher to individualize the work with individual students.

The general algorithm for developing a training module is as follows:

1. The purpose of the module.
2. Module name. Short, precise, understandable. In case of difficulty, the use of subheadings is allowed.
3. Brief summary of the content of the module, written in a heuristic manner. Sample vocabulary: In this module you will get acquainted with ... In order to ... You will find answers to these questions on such and such pages. Self-control assignments will allow you to assess your knowledge level and quality. The right answers can be found on the following pages.
4. Module plan. About three to eight points. With short explanations to them.
5. Presentation of educational material (in small portions, parts). The approximate size of each portion is 1-3 pages. The material is presented in simple, understandable language, so that the help of a teacher is not required to understand the text. All concepts are precisely defined, brought into the system.
6. Tasks in test form for each portion of the module.
7. Developing and creative tasks.
8. Test control over the entire material of the module. As a criterion for the complete assimilation of a module and the transition to the study of another module, the border of 90 or 100 percent of assimilation is taken, depending on the pedagogical attitudes.

With modular technology, it is recommended to use several rules:

1. Before each module, conduct an entrance control of the knowledge and skills of students in order to have information about the level of readiness to work on the new module.
2. If gaps in the knowledge of students are found, it is necessary to make an appropriate correction.
3. It is obligatory to carry out current and intermediate control at the end of each educational element (more often it is soft control: self-control, mutual control, verification with a sample, etc.). Current

and intermediate control is aimed at identifying gaps in the assimilation to eliminate them directly in the course of work.

4. After completing work with the module, the output control is carried out; it should show the level of the module's assimilation.
5. If the final control showed a low level of assimilation of the material, it is necessary to refine it.

The integration of modules into the educational process should be performed in a stable way. The entire system of methods, techniques and forms of organizing educational and cognitive activities of students fits well into the modular system of training: individual work, in pairs, in groups.

The modular design of the course provides a number of significant advantages and is one of the effective ways to intensify the educational process, especially in the context of targeted intensive training of specialists.

The advantages of this teaching method include:

- providing methodologically grounded coordination of all types of the educational process within each module and between them;
- system approach to building a course and determining its content;
- flexibility of the structure of the modular building of the course;
- effective control over the assimilation of knowledge by students;
- identification of promising areas of scientific and methodological work of the teacher;
- fast differentiation of students: there are different "average" groups of excellent students, successful and weak students, instead of which appear the first, second, tenth, hundredth, etc. course students;
- with a significant reduction in the time of lectures and the search for new forms of classes, the teacher manages to give students the necessary knowledge, skills and abilities in their subject area.

For the transition to modular training, it is necessary to create certain conditions. The first condition is related to the motivation of teachers.

The second condition is associated with the readiness of students to perform independent educational and cognitive activities: the formation of a minimum of knowledge and general educational skills.

The third condition is the material capabilities of the college in the reproduction of modules, because they will only play their role when each student is provided with this program of actions.

The term "module" - came to pedagogy from informatics, where they designate a design applied to various information systems and structures and providing their flexibility, restructuring. The term "module" is international. The UNESCO thesaurus has several derivatives from it: modular method, modular preparation, modular schedule, modular approach. The modular approach is usually interpreted as the design of educational material and procedures in the form of complete units, considering the attributive characteristics. Modular learning first appeared in the late 1960s and soon spread throughout English-speaking countries. Its essential was that the student could work with the individual curriculum supplied to him, which included a target lesson plan, a bank of material, and methodological direction for accomplishing the defined didactic goals, almost independently or totally independently. The teacher's functions varied from informational control to consultative and coordinating.

What is meant by the word "module" in the theory of modular learning? Proceeding from the fact that a module is a relatively independent part of some system that carries a certain functional load, in the theory of learning it is a certain "dose of information or action", sufficient to form certain professional

knowledge or skills of a future specialist. Considering the above, we can give the following definition of a module.

A training module is a rationally completed form of a part of the content of an academic discipline that includes cognitive and professional aspects, and whose assimilation requires a relevant form of control of knowledge, skills, and abilities developed as a result of students mastering this module. The module contains cognitive and professional characteristics, in connection with which we can talk about the cognitive (informational) and educational-professional (activity) parts of the module. The first task is the formation of theoretical knowledge, the second function is the formation of professional skills and abilities based on the acquired knowledge. Both whole disciplines and some sections of disciplines, special courses, electives can be taken as information modules. The activity module can involve laboratory workshops and laboratory work, special workshops, term papers and theses.

The final part of the module is control. This part is designed to test and evaluate the knowledge, skills, and abilities formed in the process of students' cognitive activity. Self-control, mutual control, teacher control is more often used. Research assignments can be issued in the form of abstracts, messages, reports.

The module must be accompanied by methodological assistance, which includes:

- a list of information sources (main and additional) that can be used to study, intensify, and enlarge the main content of the information block;
- an indication of the educational and cognitive activities that are best suited to the study of specific content and that ensure the reproductive and cognitive relationships;
- a system of tasks of varied degrees of complexity;
- alternative organizational structures for educational work in the classroom and at home;
- self-control tasks for learning activities.

Each learning element's performance is evaluated via modular technology. The grades are added together in the statement, which is used to determine the final grade for the module's work.

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