
TEACHING ORGANIC CHEMISTRY IN GENERAL SECONDARY SCHOOLS USING MODULE TECHNOLOGY

<https://doi.org/10.5281/zenodo.7879065>

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USING MODULAR TECHNOLOGY IN TEACHING ORGANIC CHEMISTRY IN SECONDARY SCHOOLS

This article discusses modular education, its content and essence, and also highlights the features of teaching individual topics in modules and its elements using the LMS-Moodle system in organic chemistry in secondary schools.

Key words.

learning, quality, system, educational technologies, modular technologies, modular elements, LMS-Moodle software system, educational resources, stage.

Modern pedagogical technologies. Today, the introduction of new information technologies into the educational process is accelerating, and it is evident that it has an effect on the higher quality organization of the educational process. That is why introducing modern pedagogical technologies into the educational process, increasing the effectiveness of education relentless search for has become the need of the day. Especially focused on the individual the effectiveness of using technologies in the educational process is proven in practice. Such education one of the technologies is modular education technology. Modular educational technology is a person-oriented educational technology. It is the purpose of education optimization of the educational process, knowledge and educational areas of students

Development, management of learning activities, as well as wide opportunities for self-management have aimed at ensuring the integrity of the educational process. This is another advantage of technology. The fact is that it is integrated, in which the content of education and the technology of its teaching are closely connected to a process, which is implemented through a set of technologies: algorithmic problem, programmed, step-by-step formation of mental activity, complete mastery, etc. The content of the electronic educational-methodical module

of organic chemistry is based on the State Education Standard acquisition of knowledge through science in accordance with the established science program, full mastery and orientation to the individual is significant with based on the technologies, principles and requirements of developmental and independent learning developed and applied to the process. In this case, before studying each section, with the students a prospective plan for mastering the material will be discussed. Sequence of subjects, each subject the number of lessons, the forms of lessons will be determined.

Technological map of teaching for each department at the initial stage of module preparation is made. For example, organic chemistry in the 1st term of general secondary schools 18 hours were allocated for the introduction, history and section of alkanes, cycloalkanes, alkenes. This section when switching to modular technology, special attention should be paid to the following components:

- Stages and time distribution of educational activities;
- Setting the educational goal clearly;
- Teaching methods and technologies that can be used in the lesson;
- Tools are necessary for the educational process.

It is important to properly divide the lesson time and the content of the subject studied in it. This section is divided according to time standards as follows:

I stage

1. History of organic chemistry. Specific properties of organic compounds (1 hour).
2. Structural theory of organic compounds (1 hour).
3. The concept of isomerism. Types (1 hour).
4. Classification of organic compounds. Types of reactions specific to organic compounds (1 hour).
5. Alkanes. Homologous series. nomenclature and isomerism.
6. Preparation and physical properties of alkanes.
7. Chemical properties of alkanes. Usage. The subject of cycloalkanes and alkenes will be planned in the same order. 2 hours according to the program laboratory work should also be done.

II stage.

Texts of lectures, test assignments, handouts for individual work materials are prepared. This information will be posted on the website. From the module system, this process is used. Selection of short or perfect (complete) information in the modules according to educational goals possible



III stage. Lecture materials, test assignments for students, as well as on the same topic relevant multimedia will be provided. The form and content of the lesson will be explained. Tasks for independent solution is given.

IV stage. The teacher informs them about the educational material that the students should master directly, when students have difficulties in mastering or when mistakes are made will help. Ability to go to the next page after completing the task assigned to the student is created. They check their knowledge through tests placed in the Moodle system. And the teacher encourages and evaluates students' independent learning abilities during the lesson.

V stage. Each lesson is organized on the basis of innovative technologies. Test at the end of the lesson students' knowledge through the results of assignments, exercises and problems given for independent solving will be reinforced and evaluated

Quality organization of lessons in organic chemistry using several modules in the same way, possible connections and differences between topics when using the module program are explained. These concepts ensure that the subject is kept in the memory of students for a long time. On the basis of the module program, students study the topics independently using textbooks they study in detail. When a problem arises, they turn to the teacher. Reinforcement of the material is done by using control work. This work is done in pairs and groups to make it interesting, it will be appropriate if used. The advantage of teaching in the module system is that it is for regular and effective monitoring of students' knowledge by forming independent reading skills.



Knowledge of information and communication technologies (ICT) and their use in the educational process, that students experiences have high knowledge and intellectual potential and advanced skills provides. Continuing education for the development of ICT-based training of chemistry teachers electronic textbooks aims at improving the system, increasing the effectiveness of education, lessons developments, animation and virtual laboratory methods, system of didactic tasks, based on topics the development of test assignments, educational manuals and recommendations which are the most relevant today's problems. With subject through a set of didactic tasks and tests prepared from science, it is possible to get complete information. Also, the teacher has a modular education must have special training in order to organize it on the basis of technology. Because every lesson before passing, they should pass on the basis of lesson plans, divided into modules. The purpose of its development is the cooperative activity of the teacher and students in the course of the lesson. It consists of planning, clarifying the content of the lesson and thereby achieving educational efficiency.

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