



## IMPROVEMENT OF TEACHING METHODOLOGY OF CLINICAL PHARMACOLOGY ON THE BASIS OF CREDIT MODULE SYSTEM (IN THE EXAMPLE OF THE DIRECTION OF TREATMENT)

No'monova G.D.

Independent researcher

Samatov D.T.

Scientific supervisor,

doctor of pedagogic sciences, associate professor

<https://doi.org/10.5281/zenodo.14848224>

### ARTICLE INFO

Received: 05<sup>th</sup> February 2025

Accepted: 10<sup>th</sup> February 2025

Online: 11<sup>st</sup> February 2025

### KEYWORDS

*Clinical pharmacology, credit module system, teaching methodology, treatment direction, innovative approach.*

### ABSTRACT

*This article focuses on improving the teaching methodology of clinical pharmacology based on the credit module system. It highlights the importance of enhancing the efficiency of the educational process, developing students' independent learning skills, and implementing practice-oriented teaching methods. The study analyzes innovative teaching methods using the example of the treatment direction in medicine.*

The credit-module system is a process of organizing education, a set of modular technologies of teaching and an assessment model based on credit measurement, and the credit-module system is a system widely used in the educational system of advanced countries of the world. Its implementation as a whole is a multifaceted and complex systematic process, and the credit-module principle emphasizes two main issues: ensuring independent work of students and assessing student knowledge based on ratings. Credit was first introduced in US universities in the 18th and 19th centuries and was created to liberalize educational processes and determine the student's weekly academic workload. Studying and mastering curricula with the credit system allowed students to independently plan the educational process, control its quality, and improve educational technologies. In particular, the accession of the Republic of Uzbekistan to the Bologna Declaration, signed in June 1999 in Bologna, Italy, by 29 countries of the world, which has now become a party to 48 countries of the world, and the start of work on introducing a credit-module system into the education system are a vivid example of modern changes in the country's higher education system. In addition, the "Concept for the Development of the Higher Education System of the Republic of Uzbekistan until 2030", approved by the Decree of the President of the Republic of Uzbekistan No. PF-5847 dated October 8, 2019, also sets out specific tasks to introduce digital technologies and modern teaching methods into higher education processes, widely involve young people in scientific activities, combat corruption, increase the share of students studying in engineering and technical education, medical specialties, introduce a credit-module system, and increase the share of practical training in specialized disciplines aimed at improving practical skills in curricula. Clinical pharmacology is one of the most necessary subjects for medical students to study and apply knowledge in practice. Because this subject is directly related to drugs and affects the main stage of treatment of the patient's life. We know



that in addition to making a correct diagnosis, it is necessary to choose the right pharmacotherapy for the patient. Of course, this is also one of the decisive situations in human life. Therefore, Clinical Pharmacology is a science that consists of selecting an effective drug for a patient in a specific disease or syndrome based on the clinical and pharmacological characteristics of the drug, recommending an effective and safe combination of drugs, and monitoring the effectiveness and safety of the ongoing pharmacotherapy. Its tasks are: 1) Improving the quality of pharmacotherapy by developing effective and safe ways to use drugs; 2) Clinical testing of new drugs (pharmacodynamics, pharmacokinetics and adverse effects of drugs); 3) Collecting world data on the effects of drugs on the human body and teaching them to students. and medical students (regardless of their specialization) are to provide in-depth training, explanation, and facilitate the application of their knowledge in practice, and to develop skills. The module program is based on the State Educational Standard of the Republic of Uzbekistan and the qualification requirements of the undergraduate education program. The clinical pharmacology module provides students of higher medical institutions with the opportunity to acquire the knowledge necessary to apply the knowledge gained in pharmacodynamics, pharmacokinetics, side effects and interactions of drugs to patients for the most effective and safe therapy, that is, rational pharmacotherapy, and creates a foundation for clinical thinking in future doctors. At the end of the program, the student will clinically integrate the knowledge and practical skills acquired in horizontal and vertical integration processes, becoming a mature, competitive, independent-thinking doctor, and new methodologies are being developed and implemented for teaching clinical pharmacology. For example, interactive methods for consolidating student knowledge, analyzing clinical cases, and determining the effectiveness and safety of drugs: "Case study", "Role play", "Role exchange", "time play", "Three questions" have been developed and implemented. These methods ensure that the student receives both high-quality knowledge and does not get bored with the lesson. In the credit module system, if students in the treatment direction of clinical pharmacology are theoretically analyzed according to the above methodologies, the results will be as expected. In this process, students prepare for the lesson themselves, and the teacher listens to their opinions and makes additions. If the teaching methodology of subjects, especially clinical pharmacology, is improved in this process, the quality of student learning and participation in the lesson process will further increase. The credit-module system is an innovative educational system that is widely used in higher education institutions around the world today. This system is aimed at the student's independent work, the formation of the ability to apply knowledge in practice, and achieving high efficiency in the learning process. The discipline of clinical pharmacology provides for the provision of in-depth theoretical and practical knowledge of medical drugs and the mechanisms of their action on the body to students in the treatment direction.

When teaching based on the credit-module system, the content of the discipline is divided into different modules, and in each module, separate topics are studied in depth. A student who successfully completes each module is given credit. Students choose courses based on their needs and interests. At the end of each module, current assessments and final exams are held.



Encouragement of independent learning: Students are actively involved in acquiring knowledge.

The share of laboratory and practical exercises in clinical pharmacology classes should be increased. Through simulation exercises, students can develop skills in the effects of various drugs on the body and their use.

Discussions on clinical cases, group assignments, and the case study method serve to develop students' analytical skills. It is important to teach students to make independent decisions to solve problems related to drugs.

The use of animations, virtual laboratories, and electronic resources to explain pharmacological processes increases the effectiveness of the lesson.

The content of the modules should be revised in accordance with the requirements of modern medicine. It is necessary to introduce innovations in new types of drugs, their pharmacodynamics, and pharmacokinetics into the educational process.

When assessing student knowledge, practical skills should be taken into account along with theoretical knowledge. Assessment through test questions, written work, and practical projects gives effective results.

Improving the methodology for teaching clinical pharmacology based on the credit-module system is important for training personnel who meet the requirements of modern medicine. This approach develops not only theoretical knowledge but also practical skills of students, teaching them to think independently and creatively. At the same time, this methodology serves to achieve high efficiency in training specialists in the field of treatment.

Improving the methodology of teaching clinical pharmacology based on the credit-module system is of great importance in the effective organization of the modern educational process. This system allows developing students' independent learning skills, effectively organizing practical exercises, and introducing innovative methods into the teaching process. Teaching clinical pharmacology based on interactive approaches deepens students' knowledge and improves their professional competence. In the future, it is possible to achieve a more effective educational process by updating the content of the modules and ensuring the harmony of practice and theory.

## References:

1. Brown, M. J., & Sharma, S. (2020). *Clinical Pharmacology and Therapeutics*. Elsevier Health Sciences.
2. Harden, R. M. (2002). Developments in outcome-based education. *Medical Teacher*, 24(2), 117-120.
3. Biggs, J., & Tang, C. (2011). *Teaching for Quality Learning at University*. McGraw-Hill Education.
4. Dabbagh, N., & Kitsantas, A. (2012). Personal learning environments and self-regulated learning: An integrated approach to enhancing learning in higher education. *The Internet and Higher Education*, 15(1), 3-8.
5. Oliy va o'rta maxsus ta'lim vazirligi (2023). Oliy ta'limda kredit-modul tizimini joriy etish bo'yicha metodik tavsiyalar.