

**IMPROVING OF THE METHODOLOGY  
OF THE DISCIPLINE «PHYSICAL AND COLOID CHEMISTRY» STUDY  
BY DISTANCE EDUCATION**

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**Introduction.** Distance learning is one of the forms of learning that has been introduced into the scientific process of NUPh based on the virtual learning environment of Moodle, and provides interactive interaction between the tutor, on the one hand, and higher education students (HES), on the other hand, in a format that is convenient to both sides. Every year, there is a tendency to increase the number of HES that choose this kind of training option. Therefore, now it is a very important problem to optimize the process of distance teaching of the discipline «Physical and colloid chemistry».

**Aim.** Theoretically to justify and practically to verify the methodology of «Physical and colloid chemistry» discipline teaching by means of distance learning.

**Materials and methods.** According to the aim, a set of research methods was used: theoretical – general scientific (for justifying of initial theoretical positions), concrete-scientific: structural and problem-thematic; empirical – content-analysis and questionnaires.

**Results and discussion.** The «Physical and colloid chemistry» distance course is divided into 2 modules that allow to master all subjects of the discipline. «Module 1: Physical Chemistry» consists of 5 sections and 11 topics, «Module 2: Colloid chemistry» consists of 3 sections and 8 topics respectively. A number of hours have been allocated for conducting on-line lectures, and the tutor has the opportunity to choose the most relevant topic according to the work program. The advantages of this form of presentation of the material is that the HES, which could not be present at the on-line broadcast of the lecture, can view the provided material online. Also, after each video broadcast in the forum, discussing topics with HES, the tutor can assess the relevance of the material provided and, if it is necessary, correct the theme of the next lecture according to the need to provide certain information. In addition, in each module, according to the work program of discipline in the distance part made certain practical works, the implementation of which is facilitated by the availability of relevant video materials, instructions and examples of their implementation. In order to help HES in each module of «Physical and colloid chemistry» discipline a «Forum of consultations of the teacher» was created, and also an appropriate forum for each discipline section to discuss the issues appearing for the HES. In the process of developing and preparing a distance course, an optimal number of control points was selected: two modules are planned for each module after studying a certain topic block. Each control consists of a control test, limited by the spending time and the number of attempts, and the task that is represented the calculation tasks of each discipline topic of different levels of difficulty.

**Conclusions.** The «Physical and colloid chemistry» discipline is one of the disciplines passed for the KROK-1 exam, so all the elements of the distance course provide a convenient narrative for optimal perception of information and its acquisition by higher education students. The developed distance course is proposed for use in the educational process of NUPh.

**PROBLEM-BASED TRAINING OF MASTERS  
FOR MEDICAL AND PHARMACEUTICAL SPECIALTIES**

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**Introduction.** The problem of improving the quality of education in medical and pharmaceutical institutions of higher education for the sake of erudition, competitiveness and development of clinical thinking among education recipients is topical nowadays. The requirements made towards the health care

professionals include the ability to take guidance in non-standard situations, to analyze problem situations, to develop a plan of actions, readiness to implement such plan and responsibility for implementation thereof. One of the promising areas for forming the aforesaid qualities is the problem-based training, which is based on creation of active cognitive activity of future professionals and search for and solving comprehensive clinical problems that require updating of knowledge, skills and abilities.

**Purpose of the research** is the examination of efficiency of the problem-based training of masters for medical and pharmaceutical specialties.

**Research method**, theoretical: analysis of scientific literature for determining the status of the problem under examination.

**Obtained results.** The problem-based training is understood as a set of actions such as arrangement of problem situations, formulation of problems, providing the education recipients with the required assistance in solving problems, checking such decisions and managing the process of systematization and consolidation of knowledge.

The major criterion of the problem-based training consists in availability of the problem situation, the psychological state of intellectual difficulty, which arises in the event where a person cannot explain a new fact with the current knowledge or cannot perform the well-known action in the usual way or find another solution.

The following several stages are used for mastering knowledge in problem-based training:

- creation of a problem situation. The teacher's objective is to inform about the accomplished scientific conclusions, not showing the ways to solve them. This activity intensifies the cognitive activity of education recipients, but at the same time they do not develop their skills to overcome the problem, as they carry out no independent activities.

- analysis and formation of a problem. The teacher provides the students with the materials for analysis, comparison and opposition, exposing the logic of solving the problem in the history of science. The teacher shows how other scholars gained knowledge in a particular area, penetrated into the essence of phenomena and made conclusions.

- hypothesizing. The teacher forms conditions for self-formulating the problem and looking for its solution through hypothesizing. In such training, the education recipients are looking for the options to prove the above hypotheses and checking accuracy thereof. Such activity develops the cognitive activity of future professionals.

Identification of problems, formulation and solution thereof and verification of solutions are the main chains of the problem-based training. Depending on abilities of the future health care specialist, and above all, on the level of his/her practice of the problem-based method, his/her participation in the above chains can be different. It is possible to speak about complete independence, when he/she is in a position to put forward and formulate a new problem independently, to solve it reasonably and to evaluate the respective solution. The situation where the problem is set by the teacher and the education recipient solves it and verifies the solution contains a less degree of independence.

The problem-based training ensures development of thinking and abilities of students for master's degree; development of creative skills; mastering of knowledge and skills acquired in the course of active search and independent solution of problems, whereupon such knowledge becomes stronger than the one gained through the traditional training; education of an active creative person, who is able to see, set and solve non-standard problems; development of professional problem-based thinking.

**Conclusions.** The problem-based training develops attention, observation, ignites thinking and cognitive activities of students for master's degree, responsibility, criticism and self-criticism, initiative, unconventional thinking, determination and watchfulness. In addition, the fact that the problem-based training ensures density of the gained knowledge as the knowledge is extracted through one's own activities is also essential.