

УДК 378:371.214.272:54

**INTERDISCIPLINARY CONNECTIONS OF CHEMICAL SUBJECTS
IN TEACHING LABORATORY DIAGNOSTICS
TO WOULD-BE BACHELORS**

I.N. Zablotska

Zhytomyr, Communal Higher Educational Institution "Zhytomyr nursing institute"

Research and application of interdisciplinary connections in the process of study is one of conditions of would-be specialists' professional competence formation.

The problem of interdisciplinary connections has been researched by: G.Berezhna, T.Kozhenovskaya, A. Lisnievskaya, M.Mozgovaya, M.Peshkova, K.Soliar, L.Teriayeva, A.Khutorskoy, S.Chechotina, T.Shigalugova and others.

In the opinion of scientists interdisciplinary connections appear to be "the most important component of the concept of interdisciplinary integration, which provides for the association of knowledge, persuasions and practical actions on all stages of specialists preparation" [3, s. 18]. The analysis of the content of researches done on the problem made it possible to determine such approaches to the classification of the interdisciplinary connections: in accordance with the basic components of the process of study (information, organization and methodology, operation) [1, 2]; due to the quantity of training disciplines (cyclic and intercycle) [1, 4]; according to the chronology of their study [1, 2, 4] and others.

In our study of the interdisciplinary connections of chemical disciplines in teaching laboratory diagnostics to future bachelors we adhered to the following classification:

- according to the concepts that are common for the disciplines;
- according to the common methods of research;
- due to the common practical habits, which are to be formed in the process of studying the disciplines;
- according to the depth of interaction between disciplines (essential, insignificant);
- due to the chronology of the study of disciplines (preceding, simultaneous, following).

In the process of the research it was planned to determine the number of disciplines, which contribute to the greatest degree to chemical knowledge and habits development, organization and implementation; to define the chronology of chemical and other disciplines study aimed at the further improvement of curriculum; to systematize chemical concepts that are prior for students' professional competence formation to compile the corresponding glossary.

The study of interdisciplinary connections was accomplished via analysis and comparison of the content of the curricula of disciplines, which are studied by the future bachelors of laboratory diagnostics. Among them there are two chemical disciplines – “Medical chemistry” (semesters I-II) and “Analytical chemistry” (semester III).

The conducted investigations showed that disciplines Medical chemistry and Analytical chemistry were bound with close interdisciplinary connections between themselves and other disciplines. According to the key chemical concepts that are necessary for bachelors' of laboratory diagnostics training, four clear interdisciplinary connections with the courses Medical and biological physics, Physiology, Pharmacology and medical receipts, The technique of laboratory works, Clinical laboratory diagnostics, Hygiene and the hygienic examination, Biological and clinical chemistry have been outlined. However, there is a need for the systematization of these chemical concepts in the form of the special professionally oriented glossary.

To the general methods of research, which are used by chemical and other disciplines, refer the following ones: the methods of solution preparation and finding out their composition by density, the measurements of pH of solutions by indicator and potentiometer methods, the methods of qualitative analysis, the methods of titration, photometry, spectrometry and others, the method of algorithmization of task solving; the method of data visualization (construction of tables and calibration curves).

While studying the majority of disciplines students develop the same practical habits – to prepare solutions, to determine qualitative and quantitative composition of model solution, to follow safety regulations in laboratory and etc.

Studying interdisciplinary connections due to the chronological approach a disagreement in the sequence of disciplines Medical chemistry and Pharmacology and medical receipts was revealed. The second discipline is studied in the 2nd semester and must be based on the knowledge of the composition and the structure of predominantly bio-organic connections. However, these substances are examined in medical chemistry in the 2nd semester. Based on this, students obtain complete information about the structure, classifications and the medical value of bio-organic connections only in the end of academic year. Thus, the knowledge of chemical nature

of the majority of the medicines, studied by discipline Pharmacology and medical receipts, is not complete. Therefore it would be expedient to transfer the study of this discipline to the 3rd semester.

According to the results of the conducted investigation it was established that the most essential interdisciplinary connections unite chemical disciplines with: Biological and clinical chemistry, Clinical laboratory diagnostics and Hygiene with the hygienic examination. The first two of them lay the basis for further professional activity of graduates in the diagnostic laboratories, which accomplish analytical studies of the biological fluids of man. The study of medical and analytical chemistry precedes them. It must be noted, that between the teaching of chemical disciplines and the courses mentioned above, for example – Biological and clinical chemistry, there is a significant break (IV- V semesters), which reduces the volume of the necessary professionally significant chemical knowledge and practical habits of students to the level of residual.

Hygiene with the hygienic examination as a discipline is the priority for the graduates, who plan to work in the laboratories of sanitary-epidemiological stations. However, its study is not based on the knowledge of the chemical composition of objects of environment, since this material is absent in the curricula of Medical chemistry and Analytical chemistry courses. Thus we propose to introduce a special course of Chemistry (professionally oriented) into the curriculum of training the bachelors of laboratory diagnostics in the fourth or the fifth semesters to study the material, which is absent in the curriculum of chemical disciplines, and also for systematization and generalization of the professionally significant chemical information.

List of literature

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