ПРАКТИКО-ОРИЕНТИРОВАННЫЕ ТЕХНОЛОГИИ В ВЫСШЕМ ОБРАЗОВАНИИ КАК ФАКТОР АДАПТАЦИИ СТУДЕНТОВ ПЕРВОГО КУРСА (НА ПРИМЕРЕ ПРЕПОДАВАНИЯ БИООРГАНИЧЕСКОЙ ХИМИИ В МЕДИЦИНСКОМ ВУЗЕ)

PRACTICE-ORIENTED TECHNOLOGIES IN HIGHER EDUCATION AS A FACTOR OF
ADAPTATION OF FIRST-YEAR STUDENTS (ON THE EXAMPLE OF TEACHING BIO-
ORGANIC CHEMISTRY AT MEDICAL UNIVERSITY)

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Аннотация:

Статья посвящена обсуждению проблем, возникающих в процессе адаптации первокурсников медицинского вуза. Перечислены основные трудности студентов, начинающих свое обучение в вузе, а именно, непривычная организация учебного процесса, включающего лекционные и практические занятия, сложные вузовские учебники, большой объем информации, отсутствие навыков самостоятельной работы. Особый акцент ставится на проблеме социализации первокурсника в вузе. Показаны способы управления процессом профессиональной и социально-психологической адаптации первокурсников. Отмечена перспективность использования тьюторства и кураторства как методов воспитательной работы для облегчения адаптации и обсуждается успешность использования практико-ориентированных технологий образования в учебно-методической работе со студен-

Abstract:

The article is devoted to a discussion of the problems that arise in the process of adapting freshmen to a medical university. The main difficulties of students starting their studies at the university are listed, namely, the unusual organization of the educational process, including lecture and practical classes, complex university textbooks, a large amount of information, lack of independent work skills. Particular emphasis is placed on the problem of socialization of a freshman at a university. Shown are ways to manage the process of professional and socio-psychological adaptation of freshmen. The prospects of using tutoring and supervision as methods of educational work to facilitate adaptation are noted, and the success of using practice-oriented education technologies in educational and methodical work with students is discussed, namely, the organization of subject Olympiads, scientific circles, and student work practices. On the example of

тами, а именно, организация предметных олимпиад, научных кружков, производственных практик студентов. На примере проведения лабораторно-практических занятий по биоорганической химии подробно рассмотрена реализация некоторых практико-ориентированных технологий обучения. Выполнен анализ роли интерактивных технологий (круглого стола, мозгового штурма, деловой и ролевой игры) в активизации коллективной работы студентов с использованием лекционного материала, в усвоении больших объемов информации и в эффективном использовании вузовских учебников и показано значение применения метода проектов для выработки навыков самостоятельной работы у первокурсников. Отмечается, что применение информационно-коммуникационных технологий помогает студенту представить результаты своего проекта-исследования в более доступном и наглядном формате. Обсуждается необходимость чтения лекций с сопровождением компьютерных презентаций для облегчения восприятия химических формул и реакций. Отдельно рассматривается важность использования вышеперечисленных практико-ориентированных технологий для быстрой социализации первокурсников в студенческой группе и на курсе и обосновывается эффективность их использования для облегчения профессиональной и социально-психологической адаптации студентов.

Ключевые слова:

профессиональная адаптация, социально-психологическая адаптация, медицинский ВУЗ, биоорганическая химия, практико-ориентированные технологии.

laboratory and practical classes in bioorganic chemistry, the implementation of some practice-oriented teaching technologies is considered in details. The analysis of the role of interactive technologies (round table, brainstorming, business and role-playing games) in enhancing students' collective work using lecture material, in assimilating large amounts of information and in the effective use of university textbooks is carried out, and the importance of using the project method to develop independent work skills in freshmen. It is noted that the use of information and communication technologies helps the student to present the results of his research project in a more accessible and visual format. The need for lectures accompanied by computer presentations to facilitate the perception of chemical formulas and reactions is discussed. Separately, the importance of using the above practice-oriented technologies for the rapid socialization of freshmen in the student group and on the course is examined and the effectiveness of their use to facilitate the professional and socio-psychological adaptation of students is justified.

Keywords:

professional adaptation, socio-psychological adaptation, medical college, bioorganic chemistry, practice-oriented technologies.

Relevance

Upon entering a medical university, yesterday's schoolchild is immersed in a

new learning environment for himself, which requires a change in the whole system of his usual values. The period of training in the first year coincides with the period of social maturity, the informed choice of a profession and is complicated by the lack of parental control, and for non-resident students and social problems.

The first-year student is faced with a significant difference in the systems of instruction at school and the university due to the organization of the educational process in the form of lectures, practical exercises and a large amount of independent work. Of particular difficulty for first-year students is working with university textbooks that are difficult to read, often written in an academic language. In preparing for classes, the student has to understand and remember a significant amount of information. Lack of self-study skills can cause stress, leading to disappointment in the choice of university and future profession. In addition, the beginning of studies at the university is accompanied by the formation of a new way of life, social status and social circle. From the socio-psychological atmosphere in the student group and the comfort of staying in it depends on the success and effectiveness of student learning at the medical university.

The problem of habituation of freshmen to the university is considered to be a problem of adaptation. Professional adaptation of a student is the process of adapting it to the conditions and organization of the educational process at the university, developing skills for independent work. Socio-psychological adaptation involves the process of adapting a freshman to completely new conditions of communication and interaction with other students and teachers [1,2]. Therefore, an important task of the university is helping a first-year student to adapt to new methods and forms of education, new social relations.

Aim of the study

The study of conditions for professional and social-psychological adaptation of freshmen.

Materials and methods

To facilitate adaptation, the university manages this process in various ways, conducting purposeful educational work and improving educational and methodical work with students. For example, at present, the “tutoring” direction is actively developing at universities, and the role of tutors (mentors) is played by senior students, to whom the student can turn on any question of interest. Also a prerequisite for adaptation is the accompaniment of a student group by a curator – a teacher of the university.

The introduction of practice-oriented education technologies in educational and methodical work opens up a number of prospects [3]. An important method of organizing practice-oriented learning is subject Olympiads conducted with first-year

students. The atmosphere of competition stimulates the student to master the maximum amount of knowledge and skills, put them into practice, instills an interest in independent work.

Each department has a student research group. Students, learning the basics of scientific work, conduct an experiment and acquire the first manual skills.

Students from the medical university, starting from the first year, undergo practical training every year in different statuses depending on the direction of training. Field trips immerse the student in a professional medical environment.

Participation in subject olympiads, in the work of the student's scientific circle, practical training promote successful professional and socio-psychological adaptation [4].

In this article, we want to discuss the use of practice-oriented educational technologies in laboratory and practical classes in Bioorganic chemistry. The Department of General and Pharmaceutical Chemistry for students of the 1st course of the medical faculty successfully implements interactive learning technologies, problem-based learning technologies, design technologies and information and communication technologies that facilitate the process of professional and socio-psychological adaptation [5-7].

Results and Discussion

Round tables (discussions), brainstorming, business and role-playing games are among the most common interactive technologies. All of these listed methods involve the collective work of students in a group, often with the participation of a teacher, they require in-depth study of theoretical material, the attraction of additional information, the formation of arguments and conclusions.

When implementing the round table method in the practical exercises of the Amino Acids, Peptides, Proteins module, students list and discuss the chemical properties of amino acids, peptides and mixed biopolymers, and then consider, with the participation of a teacher, possible variations in the chemical behavior of these compounds in the human body. This allows students to correctly use the theoretical material of lectures in practical classes, effectively fill the gaps in knowledge, learn to build logical connections [8].

The method of business games on practical classes in Bioorganic chemistry is used in the study of the module "Heterofunctional compounds", difficult to master. This business game allows the student to learn how to work with a large amount of information. The teacher, having already formed his own opinion about the level of knowledge and abilities of the students in the group, distributes the roles between the participants of the game and organizes their performances, and the student group listens to the messages. The student needs to keep in mind a significant amount of knowledge about the properties of individual classes of monofunctional compounds

in order to predict the properties of heterofunctional organic compounds, taking into account the mutual influence of atoms.

Brainstorming can be implemented in the classroom at various levels of complexity. The teacher formulates a problem for the students and asks to propose solutions for it in the shortest possible time using a basic textbook on bioorganic chemistry and textbooks of electronic library systems. For example, when studying the topic of Lipids, the teacher asks students to explain the reason for the difference in the melting points of saturated and unsaturated triacylglycerols. Students study the basic information, offer their solutions, and the teacher helps them choose the right answer and argue it. The method of brainstorming teaches the student to navigate in difficult for him, as a freshman, university textbooks.

Using the technology of problem-based learning and the method of projects is advisable to familiarize the student audience with the material for self-study [9]. A significant part of the course on Bioorganic Chemistry was given in hours for self-study, therefore, lectures on these topics are not provided. This causes great difficulties for first-year students, as they have to independently master new material, which is not considered in the school course, even in specialized chemical classes.

For example, the topic of polysaccharides in the course of bioorganic chemistry is important for successor disciplines such as biological chemistry, pharmacology and physiology. It involves the study of the structure and properties of homo- and heteropolysaccharides. The topic Homopolysaccharides does not cause difficulties for students who have basic school knowledge, in contrast to the topic Heteropolysaccharides submitted for independent study. In addition, the training material on heteropolysaccharides contains many cumbersome chemical formulas that are difficult to memorize. It seems appropriate to give an opportunity to one of the students of the group to realize this topic as a project and defend it in a practical group lesson. Such a construction of classes on difficult to understand topics helps the student to master a new material with less time, which contributes to its successful professional adaptation.

The above practice-oriented learning technologies are impossible without the introduction of information and communication technologies [10,11]. Lectures on bioorganic chemistry at the department are read using multimedia equipment and computer presentations, which facilitates visual perception of chemical formulas at the expense of clarity. Project security also involves the use of a computer presentation. All first-year students at the beginning of their studies have access to the internal library system and to the electronic catalog, as well as to the external electronic library system Student Consultant.

The process of socio-psychological adaptation is impossible without the successful socialization of a first-year student in a new environment. Socialization is necessary, since the beginning of training is accompanied by the restructuring of the

entire value system of the former student and requires the formation of new forms of interpersonal relations. The emergence of new personal contacts in the student environment and the formation of friendly relations in the student group contributes to the ease of adaptation. The implementation of practice-oriented learning technologies is impossible without mutual assistance, since they are built on the close interaction of students in a group. Methods of a round table, brainstorming, business games, design technologies involve active communication of students in preparation for the lesson and directly in the lesson. This contributes to their rapid socialization in the student group, on the stream and on the course, as well as in relations with the teacher.

A university teacher, using the technology of practice-oriented learning, changes the approach to the learning process and to the attitude towards the student. The teacher perceives the student as a central figure of the educational process, actively helps him, providing conditions for the realization of active cognitive activity. This position facilitates the adaptation of students, motivating them to the educational process.

Conclusions

Practice-oriented technologies of teaching Bio-Organic Chemistry help the student to adapt to the new organization of the educational process in the form of lectures and laboratory-practical classes and to a large amount of information, facilitate independent work with the use of university textbooks. They are based on the active interaction of students in a group, which leads to their socialization. Thus, the use of practice-oriented technologies contributes to the rapid and successful professional and socio-psychological adaptation of first-year medical students.

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