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НАУКОВІ ПІДХОДИ ВДОСКОНАЛЕННЯ ПРОФЕСІЙНОЇ ПІДГОТОВКИ МАЙБУТНІХ ФАРМАЦЕВТІВ У КОНТЕКСТІ ІНТЕГРАЦІЙНИХ ПРОЦЕСІВ

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У статті здійснено аналіз сучасних наукових підходів до вдосконалення професійної підготовки майбутніх фармацевтів у контексті інтеграційних процесів, що відбуваються в освіті та фармацевтичній галузі на глобальному рівні. Обґрунтовано необхідність оновлення змісту фармацевтичної освіти відповідно до сучасних міжнародних стандартів, вимог ринку праці та принципів міждисциплінарної взаємодії.

Розглянуто компетентісний, інтегративний, інформаційний та особистісно-орієнтований підходи як методологічну основу підготовки фахівців. Визначено роль інтеграції теоретичної та практичної складових навчання, цифрових технологій, стимуляційного навчання та клініко-фармацевтичної практики у формуванні професійної компетентності майбутніх фармацевтів. Особливу увагу приділяється впровадженню інноваційних педагогічних методів і технологій, таких як інтерактивне навчання, цифрові ресурси, а також розвитку науково-практичних компетенцій через участь студентів у дослідженнях та стажуваннях на підприємствах фармацевтичної галузі.

Акцентовано увагу на розвитку критичного мислення, комунікативних навичок, етичної відповідальності та готовності до безперервного професійного розвитку. Доведено, що впровадження інтегрованих освітніх моделей сприяє підвищенню якості підготовки фахівців фармацевтичної галузі та їх конкурентоспроможності в умовах євроінтеграції.

Стаття підкреслює, що інтеграція сучасних технологій та наукових підходів у процесі професійної підготовки фармацевтів забезпечує високий рівень компетентності та готовності фахівців до роботи у майбутній професійній діяльності.

Ключові слова: професійна підготовка, майбутні фармацевти, інтеграція, компетентісний підхід, фармацевтична освіта, освітні технології, професійна компетентність.

Oksana Shtrimaitis, Alina Deyneka, Vira Chornous. Scientific approaches to improving the professional training of future pharmacists in the context of integration processes

The article analyzes modern scientific approaches to improving the professional training of future pharmacists in the context of integration processes taking place in education and the pharmaceutical industry at the global level. The need to update the content of pharmaceutical education in accordance with modern international standards, labor, market requirements and principles of interdisciplinary interaction is substantiated.

The competency-based, integrative, informational and personality-oriented approaches are considered as the methodological basis for training specialists. The role of integrating theoretical and practical components of education, digital technologies, simulation-based learning and clinical-pharmaceutical practice in the formation of professional competence of future pharmacists is defined. Special attention is paid to the implementation of innovative pedagogical methods and technologies, such as interactive learning and digital resources, as well as to the development of research and practical competencies through students' participation in research activities and internships at enterprises of the pharmaceutical industry.

Emphasis is placed on the development of critical thinking, communication skills, ethical responsibility and readiness for continuous professional development. It is proven that the implementation of integrated educational models contributes

to improving the quality of training of pharmaceutical specialists and their competitiveness in the context of European integration.

The article emphasizes that the integration of modern technologies and scientific approaches in the process of professional training of pharmacists ensures a high level of competence and readiness of specialist to work in their future professional activities.

Key words: professional training, future pharmacists, integration, competency based approach, pharmaceutical education, educational technologies, professional competence.

Introduction. The modern healthcare system requires highly qualified pharmacists who are able to work in the conditions of rapid development of pharmaceutical science, digitalization and integration of international standards. In the context of international reform in Ukraine and orientation toward European requirements, particular importance is attached to improving the professional training of future pharmacists in the pharmaceutical field. Scientific approaches to the modernization of the educational process are based on the competency-based paradigm, integration of theory and practice, innovative learning technologies and the principles of continuous professional development.

The professional training of future pharmacists is a key element in ensuring the effective functioning of the pharmaceutical system, which includes the provision of high-quality medical care and the development of pharmaceutical science. The changes taking place in modern society require pharmacists not only to possess technical knowledge but also to have the ability to adapt quickly, the use of new technologies and the integration of interdisciplinary knowledge. In this context, scientific approaches to improving professional training are gaining particular importance.

Professional training of future specialists in the specialty 226 “Pharmacy, Industrial Pharmacy” should be organized in such way that students acquire comprehensive integrative knowledge during their continuous education, develop practical skills for creatively solving professional tasks in the pharmaceutical field, gain practical work experience and also cultivate important personal qualities such as humanity, empathy, readiness for future professional activities and responsibility for the results of their work.

Currently, due to the increasing demands for the quality of specialist training, the issue of the alignment of the educational process with the professional requirements of employer arises. This creates an urgent need to improve the organizational and methodological aspects of professional training in medical institutions that prepare pharmacists through a balanced approach to the implementation of scientific approaches.

Analysis of recent research and publications. New challenges facing the modern system of pro-

fessional training of future masters of pharmacy within the system of contemporary pharmaceutical education in Ukraine are associated with complex approaches to reforming this field throughout the entire period of formation and development of our state’s independence. A significant contribution to the study of theoretical and applied aspects of preserving public health and training future specialists for the implementation of health-preserving technologies in the field of education belongs to V. Bobrytska [1; 2]. Theoretical significance for our research is also found in scientific works devoted to the development of various aspects of pharmaceutical education, carried out by I. Bulakh, I. Zupanets, A. Kotvitska, Z. Mnushko, I. Nizhenkovska, T. Reva, V. Chernykh and others.

The issue of professional training of specialists is examined in detail in the works of such scholars as A. Alekseyuk, S. Artemieva, A. Boiko, S. Honcharenko, V. Hrynova, I. Isaeva, L. Kaidalova, P. Luzan, I. Melnychuk, N. Nytsalo, O. Pekhota, S. Sysoieva and others. Many studies are devoted to specific aspects of training junior specialists, highlighting such issues as the formation of competencies and professional qualities of future medical workers (M. Demianchuk, S. Klymenko, O. Ruda), the development of their cognitive activity (T. Temerivska), the education of students in medical colleges (O. Andriichuk, O. Demianchuk, K. Mazepa, I. Tymoshuk and others), as well as issues of ethical and deontological training of future junior specialists (V. Volkova, E. Volkova, A. Grando, M. Mudrova, N. Semashko, P. Overby, D. Self and others).

Identification of previously unresolved parts of the general problem. Despite numerous and diverse studies, the problem of professional training of future pharmacists in the context of integration processes and information and communication technologies remains insufficiently researched under modern conditions. The analysis of scientific sources indicates that the level of pharmacists’ training in Ukraine does not meet the European standards of this profession. At the same time, in European countries an active movement is developing aimed at training a “new type” pharmacist – an autonomous and qualified specialist whose role consists not only in supporting other medical professionals, but also providing care

to patients and their relatives. Many scholars believe that the introduction of computer technologies into educational process significantly expands the theory and methodology of education through the use of new didactic tools.

The purpose of study is the theoretical substantiation and development of scientific and methodological approaches to improving the professional training of future pharmacists on the basis of the competence-based paradigm of education, taking into account the modern requirements of the healthcare system.

Objectives of the study:

- to analyze the current state of professional training of future pharmacists in higher education institutions;

- to determine the theoretical and methodological foundations for improving pharmaceutical education;

- to characterize scientific approaches in the context of pharmacists' training;

- to identify the main professional competencies necessary for effective pharmaceutical practice;

- to substantiate the feasibility of introducing innovative and digital technologies into the process of professional training;

- to develop methodological recommendations for improving the educational process of training future pharmacists.

Materials and methods. To achieve the set goal of the study, a set of theoretical methods was used – analysis of scientific and methodological, psychological and pedagogical literature, study of regulatory and program documentation on the topic of the study.

Research results. The professional training of future pharmacists is an essential part of the healthcare system and pharmaceutical activities. In the modern world, where integration processes cover various spheres of life, there is a need to improve the preparation of pharmacists in accordance with new requirements and trends. This include not only the development of their professional knowledge and skills but also integration of the latest information and communication technologies, interdisciplinary approaches and the improvement of teaching methods.

The current state of healthcare system and the level of training for mid-level medical staff no longer meet the needs of society. There is a serious contradiction between the demand for qualified and competent pharmacists, capable of independent and effective work and the actual situation in the preparation of students in higher medical educational institutions [3, p. 9]. The use of advanced technologies in medicine sets new requirements for pharmacists, who must be independent link in providing timely

medical assistance and consultations, as their work directly influence the treatment outcomes of patients. Therefore, finding ways to improve the training of pharmacists and optimizing the process of education future pharmacists is one of the most urgent issues of today.

Researchers emphasize that the modern development of vocational education is driven by overcoming key contradictions: between the progressive development of information technologies and the ability to assimilate new knowledge; between the state and social demands for the preparation of highly qualified, competitive specialists and the needs, interests and capabilities of the individual; between focused specialization of a specialist's professional activity and the comprehensive, harmonious development of the individual [4, p. 6].

The analysis of the "Concept of development of the pharmaceutical sector of the Healthcare industry of Ukraine" created a scientific basis for understanding the promising directions and tasks of the pharmaceutical industry of Ukraine identified in the document, namely: 1) development of a regulatory framework regulating pharmaceutical activities; 2) formation of a national policy in the pharmaceutical sector; 3) determination of social priorities in providing the population with medicine; 4) introduction of effective and high quality pharmacotherapy and prevention of diseases among citizens [5].

Integration processes in education mean the combination of different knowledge, disciplines and technologies to create a single learning space. In pharmaceutical education this means the combination of different branches of science, pharmacy, medicine, chemistry, biology and others, which allows future specialists to obtain comprehensive knowledge and skills for effective work. This also includes integration with other countries and international standards, which contribute to raising the level of education and adapting to global requirements. Thanks to this integrative approach, future pharmacists gain knowledge about the latest advances in medicine and pharmacy, as well as develop the ability to work in multidisciplinary team, which is an important aspect of modern pharmaceutical practice.

One of the leading directions of modernization of pharmaceutical education is the competency based approach. Its essence lies in the formation not only of a system of knowledge, but also of professional, communicative, ethical and research competencies. The future pharmacist must possess:

- deep knowledge of pharmacology, pharmaceutical chemistry, drug technology;

- pharmaceutical care skills;
- ability to professional interaction;
- critical thinking and the ability to make decisions.

Competence in the professional training of a pharmacist can be realized the future specialist has personal competencies, which will determine his ability to perform certain professional functions regarding the qualified provision of medicine to the population. An important role is played by the personal component which is formed on the basis of the future pharmacist's motivation and need to work, personal abilities and tasks, interest in in-depth study of professional disciplines; the desire for creativity in professional activity, objectivity, self-criticism in assessing the achieved level of development of one's own professional competence [6].

According to O. Savchenko "the formation of professional competence in higher medical education should be viewed as a process of acquiring stable, integrated and systematized knowledge in natural sciences, humanities, fundamental and clinical disciplines; the ability to apply them in new, non-standard situations, the development of personal qualities and professionally important traits which will ensure the personal development of the future doctor" [7].

One of the important aspects of integration processes is the introduction of information and communication technologies into the educational process. Modern ICT makes it possible to create innovative teaching methods, use online courses, electronic textbooks and simulation programs for practicing practical skills, as well as integrate pharmaceutical education into the global information space. The use of ICT allows students not only to acquire theoretical knowledge but also apply it in practice in condition close to a real professional environment. This significantly improves the training of future pharmacists, as it enables the prompt updating of educational materials and ensures access to relevant data.

The main areas of ICT application in the educational process include: the development of methodological and didactic materials (presentations, images, animations, videos); management of the educational process, search for educational information on the Internet; conducting experiments using computer models; mathematical processing of experimental results; organization of students' intellectual leisure activities; development of educational web resources (distance learning, online courses); development and implementation of pedagogical software tools [8, p. 121].

S. Sharov notes that the introduction of information and communication technologies into the educational process contributes to a more comprehensive mastery of the system of knowledge and skills, develops the creative orientation of students' cognitive activity, ensures objective self-control and self-assessment of acquired knowledge, facilitates the formation of relevant professional competencies and personal qualities, and makes it possible to provide a differentiated approach [9, p. 60].

Information and communication technologies have great potential for increasing the effectiveness of seminar and practical classes, as they promote students' individual work with electronic educational materials. In this context, methods that use the Internet are useful, as they provide significant advantages in organizing the educational process of medical college students. This includes the opportunity for independent search of necessary information from a wide range of electronic sources, the use of the MOODLE system for storing educational materials, ensuring communication between students and teachers, various forms of monitoring students' academic achievements, as well as conducting webinars and other forms of educational and scientific activities.

In the modern world a pharmacist must have knowledge not only in the narrow field of pharmacy but also in related disciplines such as medicine, chemistry, biology, economics and law. An interdisciplinary approach requires the creation of educational programs that allow students to master a wide range of knowledge and apply it in various areas of professional activity. This approach enables future pharmacists to interact more effectively with other medical professionals and work in multidisciplinary teams, which is necessary to ensure high quality treatment and patient care.

The integrative approach makes it possible to:

- combine theoretical knowledge with practical skills;
- model real professional situations;
- form a systematic understanding of the processes of creation, quality control and distribution of medicines.

The integrative approach involves synthesis, integration of knowledge and the ability to reproduce, generalize and apply the knowledge acquired during the study of various chemical disciplines as well as different subjects to solve specific professional tasks, awareness and practical orientation of knowledge, understanding the information application and the ability to accumulate and highlight the knowledge necessary to solve certain professional tasks [10].

The integrative approach in the formation of professional competence of future pharmacy specialists contributes to the creation of internal motivation for students to engage in meaningful educational activities and personal professional development. Thus, in the context of professional training for future workers in the pharmacy field, the integrative approach is implemented through the following ways: establishing connections between general education, humanities, chemistry and pharmaceutical disciplines studied in educational process; introducing interdisciplinary activities into the educational process, creating integrated educational programs, manuals, integrated courses in the curricula.

The training of a future pharmacist involves the formation of professional ethics, social responsibility and humanistic values. The person-centered approach promotes the development of motivation for learning, self-reflection and professional self-improvement. This includes responsibility for the results of professional activity; adherence to ethical norms, focus on patient needs; readiness for continuous professional development.

S. Yatsenko defines the structure of personality-oriented learning, taking into account the components of the psychological structure of activity, in particular: motivational (need, ideals, motives, interests); oriental (goal setting, planning and forecasting an activity); operational (abilities, skills, talent, giftedness, skills, mastery); energetic (attention, will, emotions), evaluative (determining the level of achievement of activity results); subject relationships and interactions in the organization of the educational process (dialogical integrity between the personality of the learner and the teacher) [11].

Personally oriented technologies are characterized by humanistic and psychological focus. They involve not only the accumulation of knowledge, the development of skills, competencies and abilities, but also the formation of principles for self-development and self-realization of the future specialist, as well as the development of their cognitive abilities. These technologies easily integrate into the traditional edu-

cation system under the following conditions: a shift in the approach to learning, with learner becoming in the central figure; the application of acquired knowledge rather than memorization and reproduction of ready-made knowledge; communication based on respect than teaching and mentorship; development of personality (physical, spiritual, ethical) [12].

Thus, the improvement of professional training for future pharmacists requires the comprehensive implementation of scientific approaches: competency-based, integrative, innovative and personally-oriented. The combination of modern pedagogical technologies with the requirements of international standards will contribute to the formation of a competitive specialist capable of working effectively in the context of globalization and development of pharmaceutical industry.

Conclusion. In the current conditions of globalization and integration processes higher education in Ukraine needs to be adapted to international standards, particularly in the field of pharmacy. The professional training of future pharmacists should be based on innovative scientific approaches that include the integration of theoretical knowledge and practical skills. An important role is played by interdisciplinary learning, which allows students to adapt to the constantly changing pharmaceutical environment. In addition, the emphasis on international cooperation and the use of advanced teaching technologies significantly enhances the effectiveness of the learning process.

Introduction of the integration processes into the educational process allows for the preparation of pharmacists capable of high level professional activity that meets the demands of not only the national but also the international labor market. Strengthening the connection between educational institutions, research organizations and pharmaceutical companies create conditions for the development of innovative approaches, enabling future pharmacists to not only acquire the necessary knowledge but also confidently adapt to professional approaches and challenges of the modern world.

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