

could be reproduced. The basis for a consistent orientation of learning in this case is operational feedback, which permeates the entire learning process. The realization of didactic technology is carried out through the development and implementation of a training plan.

The teaching plan is a vivid example of the scientific organization of work and a didactic means of managing the individual work of students with a textbook and additional literature. Working in accordance with the plan, the teacher tells individually to each student (or group of students) a paragraph of the textbook (or additional literature) and points of the plan for which the material must be worked out depending on the results of the primary (diagnostic) control.

It is concluded that the problem of introducing didactic technologies into the educational process of general secondary schools has two interrelated aspects: special training of teachers for the implementation of teaching technologies; implementation of didactic technologies by the teacher directly in the educational process.

Keywords: didactic technology of teaching, technological process of teaching, technology of concentrated learning, technology of level differentiation, activity approach to teaching, educational process.

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TRENDS IN THE DEVELOPMENT OF THE ORGANIZATIONAL STRUCTURE AND CONTENT OF THE TRAINING OF MASTERS OF PHARMACY IN THE UNIVERSITIES OF COUNTRIES OF CENTRAL AND EASTERN EUROPE

The article analyzes the current stage of higher pharmaceutical education. Trends in the development of the organizational structure of the training of masters of pharmacy in the universities of Central and Eastern European countries have been revealed: the development of a mobile educational environment in the conditions of European integration for the exchange of experience in improving European higher pharmaceutical education, ensuring the academic mobility of students, scientific and pedagogical workers; harmonization of the normative and regulatory framework in the field of production and circulation of medicinal products and professional pharmaceutical activities for the integral formation of professional competence during the professional training of masters in universities; application of a complex of proper pharmaceutical practices in the industry and in the system of industry education; introduction of educational and industry innovations to the process of formation of professional competence of future masters of pharmacy.

It is proved that the revealed trends are influential factors of modernization changes in the organizational structure and content of the training of masters of pharmacy in the universities of Central and Eastern European countries. In the conditions of the integration of higher pharmaceutical education of Ukraine into the European educational space, they contribute to the effective use of the management of the educational process, the achievement of the maximum efficiency of professional training and the adaptation of masters of pharmacy to the requirements of the labor market.

Key words: universities of Central and Eastern Europe, masters of pharmacy, modern period of development, organizational structure, content of training, development trends, educational and industry innovations, pedagogical technologies.

(статтю подано мовою оригіналу)

The current state of higher pharmaceutical education in the universities of the European Union countries determines the promising directions of the preparation of masters of pharmacy in the universities of the Eastern European countries in the direction of European integration changes. Modernization changes in the content of Master Pharmacy training in universities of Western and Central European countries are based on the Bologna Agreement on the Harmonization of European Education, Exchange of Students and Staff, which was ratified by all EU countries and accepted by Eastern European countries that are in a state of European integration changes since the beginning of the 21st century carry out higher education reforms on the basis of common key values and recognition of higher education diplomas in the European educational space.

Analysis of research and publications. The oldest universities in Europe, which have a long history, traditions and a confirmed high level of professional training of masters, formed the European University Association – European University Association (EUA) [1].

Influential for European integration processes is the formation of the European Association of Universities (EUA), the initiated partnership educational and scientific cooperation and the exchange of experience in the effective organization of educational processes.

By conducting research and project development, the experts of the European University Association (EUA) analyze the current problems facing universities, as well as best practices for the benefit of all subjects of educational transformations. Focus groups, the matic networks, questionnaires for institutions, as well as visits are the main tools used by the Association to provide constant feedback to the participants of the change process. EUA carries out research on a wide range of issues of importance to its members, such as the quality of education, financing of higher education institutions, coordinated development of academic and research degrees, doctoral programs, training of young researchers, dissemination of knowledge and experience in university management and educational processes. The association is also the basis for informational work with political entities for the development of educational services of EUA member states. Independent higher education quality assurance agencies should have been more recommended in European networks. The report on the existing structures showed the extreme complexity and variety of training programs at the “Bachelor’s” and “Master’s” levels respectively in the system of university education in European countries [1].

The Sorbonne Declaration recommended that research be organized at the level of university students and graduates, but did not provide an indication of its duration. Discussions focused on the already existing European “model” with 3 main qualification levels requiring 3,5 or 8 years of study. Experimental research gives EUA the opportunity to play a key role in disseminating information about current reforms universities in Europe and beyond [2].

In particular, EUA is committed to supporting its Associate Members in understanding and responding to important developments in an increasingly

complex and competitive global environment. Since 1999, the European Association of Universities has been providing reports to the “Trends in European Higher Education” Project. This project accompanies the Bologna process from the moment of its inception and helps in the implementation of directions and features of the development of European higher education, which are rapidly changing [1; 2].

It should be noted that the implementation of the Project “Trends I” in the development of the structure of higher education (Trends in Learning Structures in Higher Education) from 1999 covers three main directions: a) data collection; b) comparative analysis; c) verification of the reliability of the results and review of the report, which for the first time highlighted the complexity and diversity of the existing structures of academic degrees and training programs in the systems of professional training in the universities of European countries. According to the Sorbonne Declaration, the division into university and post-university cycles was approved, but the duration of these cycles was not discussed. However, ways of stimulating the desired convergence and transparency in the European framework of qualifications were determined: 1) adoption of the European Credit Transfer System (hereinafter referred to as ECTS), which increased the flexibility of national/institutional systems and facilitated mobility both within the European Union and the European area of higher education (hereinafter – EPO), as well as outside its borders; 2) adoption of a common, but flexible basis for matching qualifications. An inflexible unified model was recognized as undesirable and impractical; 3) expansion of the European area of quality assurance, assessment and accreditation (compatible quality assurance systems, independent assessment, coordinated approaches to quality standards for transnational education); 4) providing assistance to European universities in realizing new opportunities [2; 3].

The humanization and communicative orientation of the process of higher medical and pharmaceutical education in the conditions of European integration within the framework of the implementation of the provisions of the Bologna Declaration and the Law of Ukraine “On Higher Education” determine the use of interactive methods and technologies during teaching the disciplines of natural and scientific training (DPNP) in university education, which ensures development in the process of professional training of the ability to think, independence and independence of thinking, as well as constant interest in what is happening in modern society. This contributes to the formation of professional personal qualities in future masters: it is easy to navigate in rapidly changing information flows; apply modern information technologies; make decisions and be responsible for them; adapt to any conditions in modern society; observe, generalize and draw conclusions [4, c. 252].

According to the results of the analysis, it was established that all interested persons (stakeholders) within the university, including students and staff, as well as such external stakeholders as employers and external partners of the institution, employers and other stakeholders participate in the process of regular revision and updating of master’s training programs. Characteristics of updated master’s programs are published on university websites. The procedure of evaluation,

monitoring and revision of educational programs is determined by the university independently, according to its needs [5].

In the system of higher pharmaceutical education, a significant influence on the modernization of the content of educational programs for the preparation of masters of pharmacy in universities of Central and Eastern Europe is determined by the modern Concept of the implementation of proper pharmaceutical practices (GxP – EU standards), as a single element of the system of ensuring the quality of pharmaceuticals from the stage of development to retail sale and use medicinal products is a significant factor influencing changes in the content of teaching special educational disciplines of professional training in the specialty 226 – “Pharmacy, industrial pharmacy” (organization and economy of pharmacy, management and marketing in pharmacy, industrial pharmacy, modern pharmaceutical technologies, clinical pharmacy and pharmaceutical care, clinical pharmacology, state quality assurance system) [6; 8-10].

The complex of proper pharmaceutical practices GxP is one of the main ones in filling the content of the professional training of masters of pharmacy, as it ensures its compliance with modern regulatory changes in the implementation of proper professional pharmaceutical activity. In Ukraine, Good Practices are implemented at the level of the standards of the Ministry of Health of Ukraine (Ministry of Health of Ukraine). Their development is based on the international practice of medical supply and pharmaceutical activity, which is regulated by EU and WHO directives [11-15].

The purpose of the study is to identify trends in the development of the organizational structure and content of the training of masters of pharmacy in the universities of Central and Eastern Europe.

To achieve the goal, it is necessary to solve the following tasks: to analyze the current stage of higher pharmaceutical education and to identify trends in the development of the organizational structure of the training of masters of pharmacy in the universities of Central and Eastern Europe.

Research methods. In order to carry out a systematic analysis of the modern stage of higher pharmaceutical education and to identify trends in the development of the organizational structure and content of the training of masters of pharmacy in the universities of Central and Eastern Europe, theoretical methods were used: the analysis of philosophical, medical, pharmaceutical and psychological-pedagogical scientific sources on the problems of training masters of pharmacy, a comparative analysis of the experience of organizing the training of masters of pharmacy in universities of Central and Eastern Europe.

Presentation of the main research material. The modern period of the development of higher pharmaceutical education in the countries of Central and Eastern Europe is characterized primarily by mobility and the exchange of advanced experience in the organization of the educational process in the European Association of Universities (organizational and didactic system of training masters of pharmacy), the wide implementation of innovations in the pharmaceutical industry, their introduction into the system of professional training of

masters of pharmacy in the universities of the countries of Central and Eastern Europe, namely: innovative technological achievements in molecular and cellular biology; the introduction of personalized medicine as a new trend in the development of targeted therapy; innovative social pharmacy, pharmaceutical care focused on patient needs; increasing the number of innovative pharmacotherapy drugs based on pharmaceutical production and the use of biotechnological products; innovative technology and digitalization of industrial pharmacy to ensure high quality and safety of medicinal products.

According to the results of a comparative analysis of the system of higher pharmaceutical education, the peculiarities of the organizational structure, content, and pedagogical technologies of the training of masters of pharmacy in the universities of Central and Eastern Europe were established. The organizational structure and content of Master of Pharmacy training in universities of Central and Eastern Europe is competence-oriented to ensure the implementation of systemic processes of formation of basic competences and professional competence, which ensures adaptation to the conditions of the labor market and effective implementation in the implementation of pharmaceutical activities, includes the specialties: "Pharmacy, Industrial pharmacy", "Clinical pharmacy" with specializations that are determined by the needs of employers of European regional labor markets.

The content of Master of Pharmacy training at the universities of Central and Eastern Europe combines the content of the educational disciplines of the normative and variable parts of the curricula in accordance with the educational program in the specialty, is constantly updated and improved, covers: the basics of designing, building and evaluating pharmaceutical quality systems, studying their content and functions in conditions of industrial production of pharmaceuticals throughout the life cycle, as this is the fundamental basis of high-quality medical provision of the population. Special educational disciplines, in the process of study of which professional qualitative characteristics of specialization are formed, are components of the variable part of the curricula in accordance with the educational program of training in specialties.

On the basis of the system analysis carried out, trends in the development of the organizational structure and content of the training of future masters of pharmacy in the universities of Central and Eastern Europe were revealed, namely: the development of a mobile educational environment in the conditions of European integration for the exchange of experience in improving European higher pharmaceutical education, ensuring the academic mobility of students, scientific teaching staff; harmonization of the normative and regulatory framework in the field of production and circulation of medicinal products and professional pharmaceutical activities for the integral formation of professional competence during the professional training of masters in universities; application of a complex of proper pharmaceutical practices in the industry and in the system of industry education; introduction of educational and industry innovations to the process of formation of professional competence of masters of pharmacy.

Based on the results of a comparative analysis of educational programs and curricula, it was proven that the identified trends are influential factors of modernization changes in the organizational structure and content of the training of masters of pharmacy in the universities of Central and Eastern Europe. In the conditions of the integration of higher pharmaceutical education of Ukraine into the European educational space, they contribute to the effective use of the management of the educational process, the achievement of the maximum efficiency of professional training and the adaptation of masters of pharmacy to the requirements of the labor market.

The Bologna agreement has a decisive influence on the development of higher pharmaceutical education in Europe, which stipulates the harmonization of European education courses, the exchange of students and scientific and pedagogical staff. Implementation of the best practices of higher education management of the European Association of Universities contributes to the improvement of the educational process in the universities of Central and Eastern Europe.

The revealed trends made it possible to reveal the possibilities of bringing Ukraine's higher pharmaceutical education closer to European requirements through their practical implementation, in particular in master's training programs for maximum compliance with the conditions of future professional activity, the use of elements of dual education in research master's practice programs, the creation of an adaptive educational environment with the aim of effective formation of professional competence and competitiveness on the European labor market.

The identified innovations and identified trends determine the application of pedagogical technologies for the preparation of masters of pharmacy in the universities of Central and Eastern Europe: modular and developmental learning, projective technology in combination with interactive methods and forms (lecture-discussion, problem seminar, "openings of creative projects", etc.), which contribute to the effective implementation of the educational process, activation of cognitive activity of students, purposefulness in systemic professional creative development. The implementation of innovative educational, pedagogical, industry pharmaceutical and information technologies in the training of masters of pharmacy in European university education is practically oriented and contributes to the formation of readiness for the implementation of professional competences and research competence in the pharmaceutical industry.

Conclusions. According to the results of the research, trends in the development of the organizational structure and content of the training of future masters of pharmacy in the universities of Central and Eastern Europe were revealed, namely: the development of a mobile educational environment in the conditions of European integration for the exchange of experience in improving European higher pharmaceutical education, ensuring the academic mobility of students, scientific and pedagogical employees; harmonization of the normative and regulatory framework in the field of production and circulation of medicinal products and professional pharmaceutical activities for the integral formation of professional

competence during the professional training of masters in universities; application of a complex of proper pharmaceutical practices in the industry and in the system of industry education; introduction of educational and industry innovations to the process of formation of professional competence of future masters of pharmacy.

It is proved that the revealed trends are influential factors of modernization changes in the organizational structure and content of the training of masters of pharmacy in the universities of Central and Eastern European countries. In the conditions of the integration of higher pharmaceutical education of Ukraine into the European educational space, they contribute to the effective use of the management of the educational process, the achievement of the maximum efficiency of professional training and the adaptation of masters of pharmacy to the requirements of the labor market.

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Довжук В. В. Тенденції розвитку організаційної структури та змісту підготовки магістрів фармації в університетах країн Центральної та Східної Європи.

У статті проаналізовано сучасний етап розвитку вищої фармацевтичної освіти. Виявлено тенденції розвитку організаційної структури підготовки магістрів фармації в університетах країн Центральної та Східної Європи, серед них виокремлено такі, як: розвиток мобільного освітнього середовища в умовах євроінтеграції для обміну досвідом удосконалення європейської вищої освіти; забезпечення академічної мобільності студентів, науково-педагогічних працівників; гармонізація нормативно-правової бази у сфері виробництва та обігу лікарських засобів та професійної фармацевтичної діяльності для цілісного формування професійної компетентності під час професійної підготовки магістрів у ЗВО; застосування комплексу відповідних фармацевтичних практик на виробництві та в системі галузевої освіти; впровадження освітніх та галузевих інновацій у процес формування професійної компетентності майбутніх магістрів фармації.

Доведено, що виявлені тенденції є важливими факторами модернізаційних змін організаційної структури та змісту підготовки магістрів фармації в університетах країн Центральної та Східної Європи. В умовах інтеграції вищої фармацевтичної освіти України в європейський освітній простір вони сприяють ефективному використанню менеджменту освітнього процесу, досягненню максимальної ефективності професійної підготовки та

адаптації магістрів фармації до вимоги ринку праці.

Ключові слова: університети Центральної та Східної Європи, магістри фармації, сучасний період розвитку, організаційна структура, зміст підготовки, тенденції розвитку, освітні та галузеві інновації, педагогічні технології.

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НАУКОВО-ТЕХНІЧНА ПІДГОТОВКА У ЗАКЛАДАХ ПОЗАШКІЛЬНОЇ ОСВІТИ

У статті представлено основні положення щодо науково-технічної підготовки у закладах позашкільної освіти. Важливість науково-технічної підготовки визначається тим, що вона забезпечує професійну основу майбутніх фахівців, дає систематизовані ґрунтовні знання про виробничі технології і техніку як про один із найважливіших факторів оточення людини.

Варто відзначити, що науково-технічна підготовка здійснюється у різних закладах освіти, серед яких важлива роль належить закладам позашкільної освіти, гурткам та іншим творчим об'єднанням науково-технічної творчості. Розглядається структурно-функціональна модель науково-технічної підготовки у закладах позашкільної освіти, яка включає три складові: змістову, процесуальну, управлінську.

Аналізується зміст науково-технічної підготовки у закладах позашкільної освіти та виділяються його складники: теорія технічної творчості; практикум з технічної творчості; проектування та конструювання технічних об'єктів; комп'ютерне проектування та моделювання; винахідництво та патентознавство.

Ключові слова: науково-технічна підготовка, заклади позашкільної освіти, технічна творчість, позашкільна освіта, учні.

У сучасних умовах науково-технічна підготовка є одним з важливих чинників розвитку технічного прогресу. Важливість науково-технічної підготовки визначається тим, що вона забезпечує професійну основу майбутніх фахівців, дає систематизовані ґрунтовні знання про виробничі технології і техніку як про один із найважливіших факторів оточення людини.

Варто відзначити, що науково-технічна підготовка здійснюється у різних закладах освіти, серед яких важлива роль належить закладам позашкільної освіти, гурткам та іншим творчим об'єднанням науково-технічної творчості.

Теоретичні основи позашкільної освіти, діяльності гуртків науково-технічного напрямку позашкільної освіти представили у своїх наукових працях О. Белошицький, О. Биковська, Я. Биковський, С. Доценко, О. Липецький, В. Мачуський, Ю. Пройдак, Т. Сорока, І. Сторож, А. Тарара та ін.

Аналізуючи питання науково-технічної підготовки у закладах позашкільної освіти, варто відзначити, що згідно Закону України "Про позашкільну освіту",