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STAGES OF DEVELOPMENT OF HIGHER PHARMACEUTICAL EDUCATION IN UKRAINE (END OF XX - FIRST QUARTER OF XXI CENTURY)

Abstract. The relevance of this study lies in identifying the patterns and factors of the transformation of higher pharmaceutical education in Ukraine at the turn of the 20th and 21st centuries in the context of European integration, digitalization, and increasing standards of pharmacist training. The author substantiates that the effectiveness of the pharmaceutical education system determines not only the quality of medical care but also the development of national human capital, innovative potential, and the competitiveness of the state's pharmaceutical sector. Defining the stages and main trends of system modernization has important theoretical and practical significance for improving the professional training of future specialists.

The aim of the article is to conduct a comprehensive historical and pedagogical analysis of the stages in the development of higher pharmaceutical education in Ukraine from the late 20th to the first quarter of the 21st century, and to determine the main factors of change in accordance with the criterial approach.

The study applies historical-pedagogical and legal approaches, which involve the analysis of current legislative acts, educational standards, works of leading scholars, and empirical data on the activities of Ukrainian institutions of higher pharmaceutical education. It was established that the development of higher pharmaceutical education in Ukraine was carried out in stages: the stage of national formation (1991–2001), the stage of European integration and expansion of pharmaceutical faculties in medical universities (2002–2015), and the modernization-innovation stage (2016–2024). Each of these periods was characterized by its own regulatory framework, strategic priorities, and educational innovations.

Special attention is paid to the implementation of the competence-based approach, modern pedagogical technologies, simulation and interactive learning, the development of digital educational infrastructure, enhanced practical training, and international cooperation. The article substantiates the influence of regulatory and organizational factors on the formation of the modern model of professional pharmacist training.

The conclusions emphasize that the evolution of higher pharmaceutical education in Ukraine is a dynamic process that combines tradition, innovation, and integration into the European educational space. This ensures the competitiveness of domestic graduates, contributes to the formation of professional culture, and enhances the role of the pharmacist in modern society.

Keywords: higher education, pharmaceutical education, stages of development, higher pharmaceutical education, medical education in Ukraine, modernization, competence-based approach, simulation technologies, digitalization, Bologna Process.

ЕТАПИ РОЗВИТКУ ВИЩОЇ ФАРМАЦЕВТИЧНОЇ ОСВІТИ В УКРАЇНІ (КІНЕЦЬ ХХ – ПЕРША ЧВЕРТЬ ХХІ СТ.)

Анотація. Актуальність дослідження полягає у виявленні закономірностей і чинників трансформації вищої фармацевтичної освіти України на зламі ХХ–ХХІ століття у контексті європейської інтеграції, цифровізації та підвищення стандартів підготовки провізорів. Автор доводить, що від ефективності функціонування системи фармацевтичної освіти залежить не лише якість медичної допомоги, а й розвиток національного людського капіталу, інноваційного потенціалу та конкурентоспроможності фармацевтичної галузі держави. Визначення етапів і основних тенденцій модернізації системи має важливе теоретичне і практичне значення для вдосконалення професійної підготовки майбутніх фахівців.

Мета статті – комплексний історико-педагогічний аналіз етапів розвитку вищої фармацевтичної освіти в Україні впродовж кінця ХХ – першої чверті ХХІ ст., визначення основних чинників змін відповідно до критеріального підходу.

У дослідженні застосовано історико-педагогічний, правовий підходи, що передбачають аналіз чинних законодавчих актів, освітніх стандартів, праць провідних науковців та емпіричних даних щодо діяльності вітчизняних ЗВО фармацевтичного профілю. Встановлено, що розвиток вищої фармацевтичної освіти України здійснювався поетапно: етап національного становлення (1991–2001 рр.), 2002 – 2015 рр. – етап європейської інтеграції – розширення



мережі фармацевтичних факультетів у медичних ЗВО; модернізаційно-інноваційний етап (2016–2024 рр.). Кожен з них характеризувався власною нормативною базою, стратегічними пріоритетами та освітніми інноваціями.

Наголошено, що еволюція вищої фармацевтичної освіти в Україні є динамічним процесом, що поєднує традиції, інновації та інтеграцію до європейського простору. Це забезпечує конкурентоздатність вітчизняних випускників, сприяє формуванню професійної культури та зростанню ролі фармацеввта в сучасному суспільстві.

Ключові слова: вища освіта, фармацевтична освіта, етапи розвитку вищої фармацевтичної освіти, медична освіта України, модернізація, компетентнісний підхід, симуляційні технології, цифровізація, Болонський процес.

INTRODUCTION

The problem formulation. The contemporary development of higher education in Ukraine is marked by dynamic transformations, driven by integration processes within the European educational space, reforms in legislative and organizational frameworks, digitalization, and the updating of approaches to professional training. Of particular importance in this context is higher pharmaceutical education, which serves as a strategic link in shaping the country's human capital, ensuring the quality of medical care, and the sustainable development of the national pharmaceutical sector.

At the turn of the 20th and 21st centuries, the system of pharmacist training in Ukraine underwent significant changes: from the establishment of a national education model-aimed at overcoming the Soviet legacy-to the introduction of modern European standards, modernization of content, technologies, and learning formats. These processes were driven both by internal sectoral needs (quality enhancement, adaptation to labor market requirements) and by external challenges—globalization, increased international cooperation, the transition to a competency-based paradigm, the influence of the Bologna Process, and the development of digital infrastructure.

The relevance of the research is defined by the need for a scientific understanding of the regularities and factors underlying the transformation of pharmaceutical education in the context of European integration, ensuring innovative capacity and competitiveness of Ukrainian professionals, and strengthening the role of humanistic and ethical values in the professional formation of pharmacists. A thorough analysis of developmental stages, regulatory frameworks, didactic innovations, and the experience of leading educational institutions is the foundation for an effective model of pharmaceutical personnel training.

The purpose of the research his to provide a comprehensive historical and pedagogical analysis of the stages of development of higher pharmaceutical education in Ukraine from the late 20th to the first quarter of the 21st century, clarifying the main factors of modernization and identifying didactic-oriented trends in the formation of a modern educational model for future pharmacists.

Analysis of recent research and publications. In recent decades, the issue of developing higher pharmaceutical education in Ukraine has become particularly relevant due to the transformation of the higher education system, the harmonization of national standards with European requirements, the shift to a competence-based model, and the digitalization of educational processes.

V. Slypchuk conducted a comprehensive historical and pedagogical analysis, proposing a well-argued periodization of professional pharmaceutical education in Ukraine, accounting for regulatory changes, organizational innovations, and European integration trends (Slypchuk, 2017). Her dissertation analyzes changes in the organization of the educational process, the impact of the Bologna Process, the development of new standards, and the implementation of modern educational technologies.

Historical and methodological approaches to the study of the transformation of pharmaceutical education, the issue of the relationship between traditions and innovations are revealed in the works of T. Prokopenko, A. Kotvitska, V. Horbanev and others, who studied the evolution of the content and structure of pharmacists' professional training in Ukraine in the context of European trends. The author draws attention to the peculiarities of the formation of national educational policy, the development of a network of educational institutions, the establishment of a system of quality control of training (Prokopenko, Kotvitska, & Gorbanyov, 2015).

Research by I. Boychuk (Boychuk, 2011) supplements these findings with analysis of the establishment of educational centers, changes in the content and forms of professional education, and the continuity of educational processes.

The article by J. Bates et al. (2022) provides a global comparative analysis of needs, challenges, and innovations in pharmaceutical education, focusing on program compliance with international requirements, simulation technologies, digitalization, and the integration of clinical and industrial training.

National analytical reviews (National Pharmaceutical University, 2022) highlight current conditions, educational network innovations, and the role of international projects (Erasmus+, Bologna Process), as well as program accreditation according to Good Pharmacy Practice standards. Ukrainian publications underscore the importance of academic mobility, dual education models, independent quality evaluation, and lifelong learning (Gorbanyov, 2017).

Didactic-oriented studies focus on the introduction of competence-based education, simulation, problem-based and interactive methods, quality of practical training, and assessment of professional competencies for graduates (Mishchenko, Medvedeva, Tolochko).

THE PURPOSE OF THE RESEARCH

In summary, the transformation of pharmaceutical education in Ukraine is a multidimensional process influenced by regulatory, organizational, didactic, and humanistic factors, with key challenges remaining in further European integration, quality assurance, human capital development, and the preservation of national identity and values.

RESEARCH METHODS



A set of complementary research methods was used to ensure a systematic and comprehensive analysis of the problem of developing higher pharmaceutical education in Ukraine at the turn of the 20th and 21st centuries: historical-pedagogical method for the study of the genesis, stages, and features of the formation of the higher pharmaceutical education system, analysis of educational reforms, and the impact of sociopolitical and economic factors on sector development, regulatory and legal analysis for the study of legislative acts, decrees, standards, and concepts that governed the reform and modernization of the pharmaceutical education system; comparative-pedagogical method for comparing Ukrainian approaches and models with European and global practices, identifying common trends and unique development features. Structural-functional analysis for clarifying the organizational structure and roles of key system elements during different stages. Analysis of scientific literature, monographs, dissertations, and empirical studies to generalize the current state of the problem, determine major trends, innovations, and prospects for development. Generalization and systematization methods for formulating conclusions, identifying regularities, and outlining directions for further modernization. The application of these methods provided for an in-depth and multifaceted disclosure of the subject, identifying key stages, factors, and didactic features of the development of pharmaceutical education in Ukraine.

RESULTS OF THE RESEARCH

The analysis of scientific literature shows that each scientist used their own criteria to distinguish the periods of development of higher pharmaceutical education, which led to the emergence of different options for periodization of medical and pharmaceutical education. These aspects were an important basis for the development of higher pharmaceutical education in Ukraine. They contributed to the impetus and creation of new aspects of pharmacy development in higher education institutions of Ukraine.

The proposed periodization is based on the results of research by leading Ukrainian scientists in the field of pharmaceutical education. In particular, the most thorough periodization of professional training of pharmaceutical specialists in Ukraine was developed by V.L. Slipchuk in her dissertation research «Trends in Professional Training of Pharmaceutical Specialists in Ukraine (XX - Early XXI Century)». The researcher proposed a six-period periodization, which covers the time period from the end of the XVI century to 2017.

1921–1941 - formation of the system of (secondary and higher) pharmaceutical education as a separate branch; 1941–1945 – curtailment of the development of the system of professional training of pharmaceutical specialists, 1945 – first half of the 1960s – restoration and expansion of the system of professional training of pharmaceutical specialists; 1960s – 1991 – modernization and ideologization of professional training of pharmaceutical specialists; 1991 – 2017 – formation of nationally oriented professional training. (Slipchuk, 2017.).

T. Prokopenko, A. Kotvitska, V. Horbanov and others, studying the historical aspects of the formation of pharmaceutical education, analyzed in detail the historical pre-revolutionary (before 1917) stage of development of pharmaceutical education in Ukraine, stating the high level of professional training of pharmacists in the second half of the nineteenth century - early twentieth century, success in the development of pharmaceutical education at Kharkiv University (Prokopenko, Kotvitska, & Gorbanyov. (2015).

The study of S. Riznychok highlights the evolution of the content of pharmaceutical education in the period 1939-1990 (Riznychok, 2013), which allows us to trace the continuity in the development of the educational system. I.D. Boychuk analyzes the prerequisites for the emergence and formation of the pharmacist training system in Ukraine in a monographic study (Boychuk, 2011) He reveals the methodological basis for understanding the current processes in the pharmacy. The historiographical analysis of V. Horbanov provides a holistic picture of the formation and development of pharmaceutical education during different historical periods (Horbanov, 2017).

The periodization we have developed is based on a criteria-based approach and a comprehensive analysis of the regulatory framework governing pharmaceutical education, including higher pharmaceutical education in Ukraine. The boundaries of each stage are characterized by specific documents that reflect the evolution of the educational system in accordance with socio-political transformations and integration processes. Given the lack of research on this issue, we considered it necessary to develop our own periodization of the development of higher pharmaceutical education. A thorough analysis of scientific research, regulatory and legal acts, and historical and educational sources allows us to identify the criteria for periodization. We have identified the following main criteria for our own periodization: legal - involves an analysis of the regulatory and legal framework for the development of higher pharmaceutical education in Ukraine; historical and analytical, the essence of which lies in analyzing the evolution of higher pharmaceutical education in Ukraine under the influence of socio-political, economic, and medical-organizational factors; and didactic-oriented criterion, which involves analyzing the content, operational, activity-based, and other aspects of the development of higher pharmaceutical education during the period under study. In this publication, we will analyze the first two criteria. It is important to note that each historical stage of the period under study was characterized by specific documents that reflected the evolution of the development of higher pharmaceutical education in particular, and the educational system in general, in accordance with socio-political transformations and integration processes. This criteria-based approach made it possible to divide the period under study into specific stages, each of which was characterized by theoretical, legal, and applied didactic-oriented aspects.

The first stage (1991-1999) – formation of the national system of higher pharmaceutical education in Ukraine. The development of higher pharmaceutical education in the first stage was characterized by a clear focus on legislative and legal aspects. This reflected the gradual transformation of the educational system from the post-Soviet model to a European-oriented structure for the development of higher pharmaceutical education in Ukraine. The legal criterion is linked to the beginning of the formation of the national system of medical pharmaceutical education on May 23, 1991,



when the Law of Ukraine «On Education» No. 1060-XII was adopted, which laid down the fundamental principles of the state's independent education policy and created the legal basis for the transition from the centralized Soviet model of education to a nationally oriented education system. The law established the basic principles for organizing the educational process, including the right of educational institutions to independently determine the content of education within the framework of state standards. Its most characteristic aspects were the change in the regulatory framework and the creation of a unified approach to the development of higher pharmaceutical education. The development of pharmaceutical education at this stage was governed by the Concept of Multi-Stage Continuous Education, approved by the Ministry of Health of Ukraine in February 1991. (Ministry of Health of Ukraine. (1991).

According to V. Slipchuk, a key milestone in the development of national pharmaceutical education was the Resolution of the Cabinet of Ministers of Ukraine No. 571 of October 8, 1992, «On the Establishment of the Ukrainian Pharmaceutical Academy,» which established the first national pharmaceutical university on the basis of the Kharkiv Pharmaceutical Institute. We agree with V. Slipchuk that this decision «marked the beginning of a qualitatively new stage in the development of pharmaceutical education, focused on national needs and international standards»[6]. As for the historical and analytical criteria for assessing this stage, the development of higher pharmaceutical education during the period under review was characterized by radical socio-political changes after Ukraine gained independence, which contributed to the formation of a new educational policy, particularly in the pharmaceutical sector. The rejection of the Soviet centralized education system led to a transition to a nationally oriented model of education. Ukraine's transition to independence required the development of an autonomous education system capable of training personnel for the needs of healthcare in accordance with the new conditions of the state's development.

The impetus for the development of higher pharmaceutical education was the creation of the European Association of Faculties of Pharmacy (EAFP) in 1992. With the aim of coordinating and unifying approaches to pharmaceutical education, it brought together pharmaceutical education institutions in Ukraine and European countries. (European Association of Faculties of Pharmacy, 2025.)

The documentary chronology of higher pharmaceutical education in Ukraine was based on an analysis of regulatory and legal acts that defined the key milestones in the development of the industry and provided the legal basis for systemic changes in pharmaceutical education. The Regulations on the Organization of the Educational Process (1993) and the state program «Ukrainian Education in the 21st Century» (1992) were also important, as they defined the regulatory framework for the autonomization and qualitative renewal of the education sector in accordance with the Order of the Ministry of Education dated June 2, 1993, No. 161 «Regulations on the Organization of the Educational Process in Higher Education Institutions» (Ministry of Education of Ukraine, 1993)

At this stage, the development of pharmaceutical education progressed through the expansion of pharmaceutical specialties. According to the Order of the Ministry of Education and Science of Ukraine dated July 24, 2003, «On the approval of the list of areas of specialist training in higher education institutions», the field of training 1102 «Pharmacy» was expanded with new specialties: «Technology of Pharmaceutical Preparations».

A significant impetus to the development of pharmaceutical education was provided by the Concept for the Development of the Pharmaceutical Sector of the Health Care System (Ministry of Health of Ukraine, 2007) and subsequent documents on the development of pharmaceutical education in Ukraine.

From a historical-analytical criterion, the second, conventionally defined stage marked Ukraine's active integration into the European educational space. The signing of the Bologna Declaration by Ukraine on May 19–20, 2005, in Bergen, Norway [8][9], launched systematic reforms aimed at harmonizing the Ukrainian educational system with European standards. Preparatory work for European integration processes began earlier: Order of the Ministry of Education and Science of Ukraine No. 49 dated January 23, 2004 approved the «Action Program for the Implementation of the Provisions of the Bologna Declaration in the System of Higher Education and Science of Ukraine for 2004–2005» (Ministry of Education and Science of Ukraine, 2004).

The implementation of the Bologna Process in pharmaceutical education entailed fundamental changes in the organization of the educational process. The credit-module system was introduced, which increased the mobility of students and teachers and enabled the recognition of Ukrainian diplomas in European countries (Ministry of Health of Ukraine, 2007).

As researchers note, «the transition to a credit-module system contributed to the individualization of the educational process and the strengthening of the role of independent student work» ((Ministry of Health of Ukraine, 2008).

The implementation of the Bologna Process in pharmaceutical education entailed profound changes in the organization of the educational process. The credit-module system was introduced, which enhanced the mobility of students and faculty and enabled the recognition of Ukrainian diplomas in European countries (Ministry of Education and Science of Ukraine, 2003). As noted by researchers, «the transition to a credit-module system contributed to the individualization of the educational process and the strengthening of the role of independent student work» (Slypchuk, 2017).

The beginning of the third stage (2016–2024)—modernization and standardization of pharmaceutical education—was marked by the adoption of the Resolution of the Cabinet of Ministers of Ukraine No. 929 of November 30, 2016 «On Approval of Licensing Conditions for Educational Activities in the Field of Pharmacy» (Cabinet of Ministers of Ukraine, 2016). This document increased the requirements for the quality of education and professional activity of pharmacists, setting new licensing standards for educational activities in pharmacy. The lower chronological limit of the current research is defined by the Order of the Ministry of Education and Science of Ukraine No. 1540 of October 29, 2024, and the Concept for the Development of Pharmaceutical Education (2024–2025), which establish new strategic directions for the sector.



This period was one of qualitative changes in both the regulatory framework and practical aspects of pharmacist training. From a legal criterion, this stage saw the adoption of new licensing conditions for educational activities (Cabinet of Ministers of Ukraine, 2016), the introduction of the National Qualifications Framework (2011), the Unified State Qualification Exam (Cabinet of Ministers of Ukraine, 2018), and updates to the legislative base, particularly the Law of Ukraine «On Education» (2017). These documents introduced new licensing conditions and standards, ensuring their harmonization with EU requirements.

From a historical-analytical perspective, the development of higher pharmaceutical education during this period was driven by the need to enhance international cooperation and competitiveness, with a focus on the high quality of education and licensing. Under the influence of globalization and the aspiration to meet international requirements for professional training, pharmaceutical education experienced considerable standardization and strengthened ties with international organizations. The challenges of globalization, the COVID-19 pandemic, and the war in Ukraine accelerated the introduction of digitalization and innovative educational technologies in the training of pharmacists.

Therefore, the identified stages in the development of higher pharmaceutical education in Ukraine demonstrate the evolution of the system in accordance with major social, political, and economic transformations, enabling the tracking of trends and regularities in its further development.

CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

The documentary chronology of the development of higher pharmaceutical education in Ukraine for the period 1991–2022 demonstrates the stepwise transformation of the sector from national reform to European integration and innovative advancement. Each of the defined stages is characterized by specific legal acts reflecting the evolution of the education system in response to sociopolitical changes and international trends.

The analysis of the documentary base attests to the consistency of reforms aimed at improving the quality of pharmacist training and ensuring compliance with European standards. The current stage is marked by increased attention to workforce forecasting, the implementation of innovative learning technologies, and the assurance of academic integrity, laying the foundation for the further development of pharmaceutical education in Ukraine in the face of 21st-century challenges and postwar recovery needs.

Promising directions for further research include the analysis of the development of higher pharmaceutical education in Ukraine according to didactic criteria.

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