ПРОФЕСІЙНА ОСВІТА

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COMPARATIVE RESEARCH OF HIGHER MEDICAL EDUCATION IN UKRAINE AND GERMANY

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The article conducts a comparative study of higher medical education in Ukraine and Germany in the context of state-building processes based on reformist assets; the institutional processes in the system of higher education are analyzed and the conformity of the modernization of the higher medical school of Ukraine with the requirements of the practical sphere of public health protection, taking into account the integration of the state into the European space, is considered. The adaptation of the education system of Ukraine to the needs of the community was analyzed; considered educational principles and trends from the point of view of social, economic and political prerequisites of each country and the orientation of higher medical education of Ukraine to a competency-based approach, increasing the amount of independent work of the student, expanding opportunities for individualization of the educational process. The principles of the construction of the content of medical education in Germany, its orientation towards practice and the strengthening of aspects of primary medical care during all studies planned at universities are investigated. Applying the provisions of comparative analysis, the author considers key educational institutes, the implementation of which in the Ukrainian educational environment will increase the quality of professional training of health care specialists, will ensure the implementation of competitive educational and scientific developments in institutions of higher medical education; will facilitate the transition to innovative education and improve the system of continuous professional development of specialists. It was determined that with a similar general orientation of the content of higher medical education in Ukraine and Germany, there is a certain difference regarding the level of fundamental and clinical training of doctors, according to modern international standards.

Key words: *medical education, comparative analysis, medical education of Germany, medical education of Ukraine.*

Лілія Батюк. Компаративне дослідження вищої медичної освіти в Україні та Німеччині

У статті проведено компаративне дослідження вищої медичної освіти в Україні та Німеччині у контексті державотворчих процесів на основі реформаторських надбань; аналізуються інституційні процеси у системі вищої освіти та розглядається відповідність модернізації вищої медичної школи України вимогам практичної сфери охорони здоров'я населення з урахуванням інтеграції держави у європейський простір. Проаналізовано адаптацію системи освіти України до потреб громади; розглянуті виховні принципи і тенденції з точки зору соціальних, економічних і політичних передумов кожної країни та орієнтації вищої медичної освіти України на компетентнісний підхід, збільшення обсягу самостійної роботи здобувачів вищої освіти, розширення можливостей для індивідуалізації навчального процесу. Досліджуються принципи побудови змісту медичної освіти в Німеччині, її орієнтації до практики та посилення аспектів первинної медичної допомоги протягом усіх досліджень, що плануються в університетах. Застосовуючи положення компаративного аналізу, автор розглядає ключові освітні інститути, імплементація яких у українське освітнє середовище підвищить якість професійної підготовки фахівців сфери охорони здоров'я, забезпечить виконання конкурентоспроможних навчальних і наукових розробок у закладах вищої медичної освіти; полегшить перехід до інноваційної освіти та вдосконалить системи безперервного професійного розвитку фахівців. Визначено, що зі схожою загальною спрямованістю змісту вищої медичної освіти в Україні та Німеччині є певна відмінність, що стосується рівня фундаментальної та клінічної підготовки лікарів, згідно із сучасними міжнародними стандартами.

Ключові слова: *медична освіта, компаративний аналіз, медична освіта Німеччини, медична освіта України.*

Introduction. Global pandemics, such as the recent outbreak of COVID-19, wars, or natural and technological disasters create a chain of challenges for the national level of higher education systems in different countries around the world. The European Union has a long and relatively rich history of supporting member states and cooperation between them in the field of education. The general and specific experience gained is an essential basis for the development and implementation of future training programs in which, ideally, the social and professional skills of future health care workers are integrated into the medical education of the training program throughout the course of study. The need for a theoretical approach to conducting comparative pedagogical research in higher medical education is determined by the current state of the theory and practice of pedagogical comparativistics – an interdisciplinary field of scientific knowledge that investigates interdisciplinary knowledge. The relevance of comparative studies, given the demands of the national system of professional training of future specialists in the field of health care, is an indisputable fact, because comparative studies in this field are positioned as a tool for the Ukrainian educational system to achieve international standards of professional education quality. Scientific research of this nature is based on a thorough analysis of foreign experience, and makes it possible to create effective programs and projects for the development of education both in the short-term and in the long-term perspective. The European choice of Ukraine necessitates the study, generalization, critical reflection and practical application of the experience of the European community in this area. In view of this, the experience of the Federal Republic of Germany (FRG) acquires special significance for Ukraine, because Germany has gone through a difficult path of building an effective system for monitoring the quality of education. A comparative study of the higher education system applied in several countries, in particular medical education in institutions of higher medical education, allows medical education institutions in Ukraine to take the best of the national systems of undergraduate training of future specialists of other countries, which depends, to a certain extent, on the future purpose of the system, taking into account the effect of the processes of globalization, European integration and digitalization of society on the development of higher education.

The purpose of the article. The integration of Ukraine into the world educational space, the need to study and implement European experience in the field of higher medical education, the search for an effective mechanism for the comparative characterization of individual pedagogical phenomena and the development of a functional model of professional training of specialists in health care institutions determined the purpose of this study, which consists in the study and comparative researches of higher medical education in Ukraine and Germany.

Research methods. In this study, a comparative vector of research searches and a comparativist approach are used. The article uses theoretical methods of research (analysis), empirical (description) and general logic (generalization, comparison).

Presentation of the main material. Today's problems, digitization and globalization of education, require significant strategic and procedural reforms of the higher education system of Ukraine, which will result in the modernization of long-term strategies and methods that meet the needs of today [1; 2]. The impact of global processes is multidimensional and has significant social, economic and political implications. The mass spread of education and western-oriented learning norms at all levels are an integral part of the globalization process [3]. Globalization has become the main subject of study, especially in the field of comparative pedagogy, which applies historiographical and social scientific theories and methods to solving international problems of education. Numerous works of Ukrainian scientists-researchers, namely A. Sbruyeva [4], O. Sukhomlynska [5], O. Lokshina [6], N. Nychkalo [7], O. Pukhovska [8], A. Maksimenko [9] and others, are devoted to the problems of comparative research. The comparative (comparative) approach used in the research was used by K. Landman [10], R. Owens [11] in the theoretical justification of modern approaches to the content of educational programs; such researchers as L. Darling-Hammond [12], M. Dies [13], M. Bray [14], D. Wilson [15] were engaged in the study of the quality of professional training of teachers, the study of "university-school" cooperation; J. Edwards, M. Robler [16] and others were engaged in research on the implementation of information and communication technologies in professional education.

The basis of the classification of scientific approaches to conducting comparative studies of the problems of higher medical education was the degree of completeness of knowledge of the compared systems of graduate education of Ukraine and Germany, which allow to determine the strategies for solving the problems of comparative pedagogical research: historical-comparative, systemic-historical, synergistic, hermeneutic, historiographic, axiological,

narrative, thesaurus. Comparative research is characterized by epistemological integrity and constant methodological reflection. This means that in it, the study of objects, the discovery of their specificity, properties and connections is always to one degree or another accompanied by an awareness of the research procedures themselves, that is, the specificity of comparative studies in comparison with other fields investigating international education [17].

The structure of higher medical education in Ukraine is based on the education systems of leading countries in the world in accordance with the recommendations of the EU, UNESCO, the UN and other international organizations. Being an integral part of the Ukrainian educational system, higher medical education in Ukraine is regulated by the law "On higher education" [18], the regulation "On specialization (internship)" [19], the order "On approval of the specifics of training clinical residents for the needs of the Ministry of Defense of Ukraine" [20], etc. [21; 22]. The four-level system of educational institutions provides high-quality education with subsequent assignment of such qualification levels as Junior Specialist (2–3 years), Bachelor (3–4 years), Specialist (6 years) and Master (1–2 years). Higher education can be obtained at higher educational institutions of a certain level of accreditation. Applicants must have completed secondary education or an associate/bachelor's qualification in order to be eligible for higher medical education. To obtain postgraduate education, the candidate must have a document confirming the qualification of a specialist or master.

The direction of training of future doctors is determined by the standards of higher education. The content of higher education in the medical direction is implemented in unified approaches to educational and qualification characteristics and educational and professional programs at the stages of undergraduate and postgraduate training of specialists, developed in accordance with the orders of the Ministry of Education and Science of Ukraine.

The educational and qualification characteristics of a graduate of a higher educational institution reflect the goals of educational and professional training, determine the specialist's place in the structure of the health care system, and form his professional competencies. The educational component of the professional-oriented program defines the normative term of study, the normative part of the content of the study in the form of a system of blocks of meaningful modules, their information volume and level of assimilation in accordance with the requirements of the educational and qualification level. The educational and professional program establishes requirements for the content, scope, and level of the specialist's educational and professional training. Thus, the educational and professional training program for a specialist in the specialty "medicine" determines the ratio of normative and variable parts of the content – 80% and 20% [23]. The content of education includes mandatory medical and biological disciplines, behavioral and social sciences, medical ethics, and clinical disciplines. Educational programs are focused on the principles of evidence-based medicine, on the development of analytical and critical thinking of students of higher education [24]. Programs of clinical disciplines involve contact with the patient, responsibility for clinical observations, preventive medicine.

The main principle of building the content of medical education in Ukraine is orientation towards the final goals and obtaining the basics of professional competence, the realization of which is facilitated by the credit-module system, increasing the amount of independent work of students of higher education, expanding opportunities for individualization of the educational process, etc. The undergraduate stage of medical education in Ukraine, as well as in Germany, ends with state certification (state approbation) of graduates in order to determine the compliance of the quality indicators of higher medical education with the requirements of state standards of higher education after completion of studies in the relevant educational and professional programs. In contrast to the content of the German system of higher medical education, there is a certain overload in the Ukrainian system, which is caused by socio-economic disciplines that are absent from the curricula of medical schools in Germany, which involves the study of such subjects as "Physics", "Fundamentals of economic theories", "Philosophy" and others. Overloading the content of medical education logically leads to an average weekly classroom load of 5–10 hours per student.

A significant shortcoming of higher medical education in Ukraine is the insufficient clinical and practical training of future doctors, for which, according to the curriculum of the training plan for specialists in the field of medicine, half as many ECTS credits are allocated as in a German university. Currently, the optimal reform of the system of higher medical education in Ukraine stands in the way of such obstacles as: political, socio-economic realities of wartime; shortage of budgetary funds for education. The main areas of implementation of the problematic issues of the development of higher medical education are the creation of legal, economic and organizational con-

ditions for improving the quality of higher medical education by bringing its standards to the needs of the health care industry and international requirements [25]. This includes improvements to the legal framework; creation of an end-to-end training program for graduates of the higher medical world for perfect mastery of practical skills and methods; preparation of national textbooks and manuals for educational disciplines that meet modern state educational standards; further development of the network of university clinics and university hospitals; integration of the educational process with the scientific and medical activities of higher educational institutions and the work of university clinics; modernization of the material and technical base, etc.

The multi-level structure of higher medical education means that after completing a certain level of study, students can continue their studies. Ukrainian medical graduates are required to complete an internship, as well as a master's degree or a clinical residency upon request, while foreigners who have obtained a specialist qualification have the right to complete a master's degree or a clinical residency only. An important place in the context of professional-oriented reforms was the introduction of professional education standards. Their main functions are: selection of candidates for admission to educational institutions; assessment of students' educational achievements; quality assessment and accreditation of education programs; certification of teachers certifying professional level; determination of criteria for teachers' reporting for constantly performed professional duties; periodic licensing and remuneration of teachers at different stages of their career growth; evaluation of the activity of teachers seeking to improve their professional status; direction orientation and quality assessment of teachers' professional development; focusing the attention of the educational system on the problems of the quality of teaching, on the issues of accreditation of educational programs and professional development of the teacher; informing the general public about the quality of the educational system, etc. The processes of implementation of standards in the professional and educational sphere are at the stage of formation, not completed in any of the European countries, so the assessment of their impact on the effectiveness of the educational system is quite controversial and depends on the ideological positions of educational experts.

A feature of modern educational systems in Germany is the presence of new generation standards. The master plan for medical education in Germany, namely the "Masterplan Medizinstudium" [26], which was adopted in 2020, determined that the German government, together with the federal states, intends to develop measures to ensure a more targeted involvement in the training of applicants, to increase orientation to practice and to strengthen the aspects of primary care during all studies planned at universities. The master plan defines the tasks for the next generation of doctors and sets the course of their training. The course has great practical relevance; more attention is paid to communication and social skills to strengthen the relationship between the doctor and the patient, which is especially important for the success of the treatment. On the other hand, general medicine is expanding. At the same time, during training, special attention is paid to systematic training in safe handling of scientific concepts and methods. According to Federal Minister of Health Hermann Gröhe and Federal Minister of Research Professor Johanna Wanka, as well as representatives of conferences of health and education ministers of the federal states and coalition factions of the Bundestag, this is the only way doctors can always provide their patients with the latest medical research. The master plan envisages changes in the structure of education and the content of education. The goal is to familiarize future doctors with everyday diseases in outpatient and inpatient practice.

There are no entrance exams for studying at a medical institution in Germany. Enrollment in the first year is based on the average score of the certificate. The minimum passing threshold is 4.5 points, which is similar to the German 1–1.4. The duration of schooling in Germany must be at least 13 years, so most often medical education in Germany becomes available after a specialized Studienkolleg at a higher educational institution, since the final grades after studying at this institution are also counted.

Also, a positive passing of the "Test für Medizinische Studiengänge" (TMS) allows to increase the chances of obtaining a profession, since its results prevail over the average score of the certificate. Pragmatic German education believes that the knowledge of mathematics, biology, and chemistry shown on the test are among the necessary skills for future specialists in health care institutions. The more targeted selection of applicants is linked to the final school assessment (Abitur) and the medical studies exam "Test für Medizinische Studiengänge", which makes it possible to hope that the student has a burning desire to become a doctor in six or more years. The validity of existing selection procedures can only be determined using surrogate parame-

ters. TMS makes it possible to distinguish between potentially successful and less successful students based on specific grades in the Abitur exam [27]. The Abitur score itself correlates with the success of studies, but not with the completion of studies during a certain period of study at an institution of higher medical education [28].

In most universities, the beginning of studies in the field of medicine is possible only from the winter semester, that is, from the month of October. The term of study, as a rule, is 6 years and 3 months, but in some cases it can be longer. After all, in this case, it is not speed that is especially important, but quality. The entire period of study can be conditionally divided into 3 periods:

1. Pre-clinical period lasting 4 semesters (2 years). It involves obtaining basic knowledge in the field of humanitarian, medical and natural sciences. Students already at the beginning of their studies receive practical skills in caring for patients and providing first aid.

2. Clinical period with a total duration of 6 semesters (3 years). The clinical period of study includes the study of natural-scientific and clinical disciplines of general pathology and methods of laboratory and medical examination. The main goal of the clinical period is to acquire knowledge in the field of clinical disciplines, principles and algorithm of diagnosis, as well as development of a treatment plan.

3. Practice (1 year). The practice period involves working out the knowledge, skills and abilities acquired during the entire period of study. Under the guidance of their supervising physician, students are involved in activities with the aim of further deepening their knowledge in the field of medicine, and can also take part in clinical discussions (conferences).

The first and third stages end with a mandatory state exam. After graduating from the medical school, the graduate receives the first professional title, namely that of a practicing doctor. A young specialist must work for 1.5 years as a practicing physician and gain experience and positive recommendations. After that, he moves to the next step and can work as a doctor's assistant. And only after a few years, the assistant doctor becomes a specialist doctor, that is, he receives a license for practical activity.

Various proposals for the improvement of medical education can already be found on the Internet by organizations such as the Medical Faculty Association (MFT), the German Medical Students' Association (bvmd), the German Medical Association, the German Physicians' Union (Marburger Bund, Hartmannbund), as well as some societies in the Association of German Medical Scientific Societies (AWMF) (Medical Faculty Association (MFT) and others. One of them is the provision that academic success (especially if we understand mainly cognitive requirements in the sense of knowledge-based exams) reflects only part of the competencies and personality traits that future doctors will receive. Other selection criteria used by German universities, in addition to individual scores from the Abitur exam, are subject-based ability tests, as a type of professional training, the Multiple-Mini-Interview (MMI) [29]. The Catalog of Learning Objectives for Undergraduate Medical Educaion (NKLM) was developed based on the definition of the national competence of German doctors [30], which was adopted in 2015 at the regular meeting of the Association of the Faculty of Medicine in Kiel (of the Medical Faculty Association in Kiel) and currently serves as the basis for determining measures to increase the practice-oriented learning of students of medical education institutions [31], which made it possible to move away from the historical distribution of hours and make them convenient and necessary for medical education [32].

But the "Masterplan Medizinstudium" reform caused significant additional costs for the faculties of higher medical education institutions, and their added value was not reliably proven. On the other hand, the master plan "Masterplan Medizinstudium" was adopted without any financial commitment. In addition, the reform measures of the "Masterplan Medizinstudium" are narrowed to the shortage of general practitioners in rural areas and general medicine, while the faculties see themselves in the role of training the widest possible spectrum. The new content of basic medical education in Ukraine also provides for the training of a doctor of a broad profile and the absence of undergraduate specialization of doctors, which is also typical for German-speaking countries.

Also, one of the main problems of higher education in Germany has become the problem of the growth of digitalization and the need to train doctors for the care structures of tomorrow.

The political structures of power in Germany also stood in the way of this reform. Politicians seek greater centralization of medical education. The system of teaching freedom, different profiles and competition between faculties is denied.

A widespread myth is the idea of a well-founded educational motivation of German youth, which is necessary for obtaining professional competence [33]. In fact, there is no special self-discipline. In fact, a fourth part of students, like students in Ukraine,

also do not attend classes. The main institutional difference compared to the academic independence of German students is that German students choose most subjects themselves depending on career plans and/or agreements with potential employers. The freer choice of study programs for German students is connected not only with the historical traditions of university autonomy, but also with the fact that the structure of social expectations in German society is not as strongly structured as in Ukraine [34]. Another institutional defect is the strengthening of institutions of external control, with weakness and insufficient attention to self-motivation. The minimization of educational efforts of higher education seekers, along with the spread of "commercial" dissertations, is the result of the democratization of society and the general institutional degradation of the social space [35]. Trying to minimize efforts to achieve the maximum result, students, acting as social agents, often switch their energy to the search for additional paid employment; participate in the activities of informal youth groups, etc. Despite all the inequality of starting conditions, cultural and economic features of Ukraine and Germany, similar problems and tasks are being solved in the field of higher medical education, which is determined by global development trends and established world and European standards.

The considered institutional features of the educational system of Germany are not deterministic. It is not necessary to borrow all German institutions. However, if one or two elements are selectively "extracted" from Western systems of higher education (such as the three-level bachelor-specialist-master's system) and use them as a basis for other institutional transformations, the result can be considered satisfactory.

Conclusions. So, as evidenced by the analysis of the professional training of future doctors, comparative research shows a wide range of methodological approaches, which are characterized by expediency and adequacy, are determined by a high degree of consistency, which is a significant factor that affects the results of research work, and allow obtaining the most complete and objective information about the subject of research. The content of medical education in Ukraine and Germany ranges from an information-accumulating to a competency-based, person-oriented model, which reflects a system of professional knowledge, abilities and skills, personal and behavioral qualities, combined with a humane attitude towards the patient. The medical profession is one of the most prestigious, most respected and highest paid professions. However, those who have chosen the path of medicine must be ready for responsible painstaking work, constant development and improvement. It is this profession that requires special responsibility, self-discipline and does not allow the right to make mistakes. Medical education in Germany sets a high bar for future medical specialists. Starting from strict selection conditions and a frantic competition, a mandatory combination of practice with theory, state-level exams, stages of practical experience in the role of an intern, an assistant up to the moment of obtaining the cherished license for independent medical practice – this is what you will have to face on the way to your cherished dream. The educational system is a very important part of the social organism, so we hope that by focusing on certain principles, we will get a broader outlook and a firmer understanding of modern problems in the field of higher medical education, on the basis of which the educational reconstruction that should take place after the war can be built.

BIBLIOGRAPHY

1. Batyuk L. The European structure of digital competences in Ukrainian society: challenges and innovations. *Journal of Education, Health and Sport*. 2017. V. 7. № 11. P. 481–494. DOI: https://doi.org/10.12775/JEHS.2017.7.11.044.

2. Про схвалення Стратегії розвитку вищої освіти в Україні на 2022–2032 роки : Розпорядження Кабінету Міністрів України від 23 лютого 2022 р. № 286-р. Документ 286-2022-р, чинний, поточна редакція. *База даних «Законодавство України»* / ВР України. URL: https://zakon.rada.gov.ua/laws/show/286-2022-%D1%80#Text (дата звернення: 15.07.2023).

3. Batyuk L., Zhernovnykova O. Modern educational digital competence of future doctors of Poland as a European state. *New Collegium*. 2022. № 3. P. 55–65. DOI: https://doi.org/10.30837/nc.2022.3.55.

4. Сбруєва А.А. Тенденції реформування середньої освіти розвинених англомовних країн в контексті глобалізації (90-ті рр. XX – початок XXI ст.) : монографія. Суми : Козацький вал, 2004. 500 с.

5. Сухомлинська О.В. Зарубіжний педагогічний досвід в Україні в 20-ті роки. *Рідна школа*. 1992. № 2. С. 3–7.

6. Локшина О. Порівняльна педагогіка : здобутки двохсотлітнього розвитку та сучасні проблеми. *Порівняльно-педагогічні студії*. 2010. № 3/4. С. 6–15.

7. Ничкало Н. Вчитель у порівняльній педагогіці: польсько-український контекст. Paradygmaty oświatowe i edukacja nauczycieli / pod red. Wasyla Kremienia, Tadeusza Lewowickiego, Swietłany Sysojewej. Kraków, 2010. S. 153–168.

8. Пуховська Л.П. Моделі базової професійної підготовки вчителів у країнах Західної Європи. *Дидактика професійної освіти* : збірник наукових праць. 2005. Вип. 2. С. 139–144.

9. Максименко А.П. Становлення і розвиток системи університетської освіти Франції (XIX–XX століття) : дис. … д-ра пед. наук : 13.00.01 «Загальна педагогіка та історія педагогіки». Ін-т вищої освіти АПН України. Київ, 2008. 444 с.

10. Landman T. Issues and methods in comparative politics: an introduction. 3rd ed. 2008. 385 p.

11. Owens J. Review of A Descriptive and Comparative Grammar of Andalusi Arabic. *JAOS 135.2 – Journal of the American Oriental Society 135.2*. 2015. P. 410–414.

12. Darling-Hammond L., Hyler M.E. Gardner M. Effective teacher professional development. *Learning Policy Institute*. 2017. URL: https://learningpolicy/institute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf (дата звернення: 15.07.2023).

13. Levrints (Lőrincz) M., Greba I. Does experience matter?: a comparative study of efl teachers' challenges. *Advanced Education*. 2022. V. 9, № 21. P. 40–54. DOI: https://doi.org/10.20535/2410-8286.255886.

14. Bray M. Comparative Education in the Era of Globalisation: evolution, missions and roles. *Policy Futures in Education*. 2003. Vol. 1. № 2. P. 209–224.

15. Wilson D.N. Elements for a prosographic and institutional history of comparative education. The 9th World Congress of Comparative Education. Sydney, 1996. 12 p.

16. Practice Theory Perspectives on Pedagogy and Education. / Ed. P. Grootenboer, C. Edwards-Groves, S. Choy. Springer Nature Singapore Pte Ltd. 2017. 284 p. DOI: https://doi.org/10.1007/978-981-10-3130-4.

17. Wilson D.N. Comparative and international education: fraternal or Siamese twins? A preliminary genealogy of our twin fields. *Comparative Education Review*. 1994. V. 38. № 4. P. 449–486. DOI: https://doi.org/10.1086/447271.

18. Про вищу освіту : Закон України від 28.05.2023, підстава – 3062-IX. *Відомості Верховної Ради (ВВР).* 2014. № 37–38, ст. 2004. Документ 1556-VII, чинний, поточна редакція. URL: https://zakon.rada.gov.ua/laws/show/1556-18#Text (дата звернення: 15.07.2023).

19. Про затвердження Положення про інтернатуру : Наказ Міністерства охорони здоров'я України від 22.06.2021 № 1254. Документ z1081-21, чинний, поточна редакція від 14.06.2022, підстава – z0591-22. *База даних «Законодавство України»* / ВР України. URL: https://zakon.rada.gov.ua/laws/show/z1081-21#Text (дата звернення: 15.07.2023).

20. Про затвердження Особливостей підготовки клінічних ординаторів для потреб Міністерства оборони України : Наказ Міністерства оборони України від 07.07.2017 № 359. Документ z0936-17, чинний, поточна редакція від 07.07.2017. *База даних «Законодавство України»* / ВР України. URL: https://zakon.rada.gov.ua/laws/show/z0936-17#Text (дата звернення: 15.07.2023).

21. Дорожня карта освітньої реформи (2015–2025) (неофіційний текст). URL: https://ips.ligazakon.net/document/NT1812 (дата звернення: 15.07.2023).

22. Про внесення змін до деяких законів України щодо вдосконалення освітньої діяльності у сфері вищої освіти : Закон України, 2020, № 24, ст. 170. *Відомості Верховної Ради (ВВР).* Документ 392-IX, чинний, поточна редакція від 18.12.2019. URL: https://zakon.rada.gov.ua/laws/show/392–20#n12 (дата звернення: 15.07.2023).

23. Батюк Л.В., Жерновникова О.А. Формування професійної компетентності студента медичного університету при вивченні медико-біологічних дисциплін. *Професійна освіта: методологія, теорія та технології*. 2021. Вип. 14. С. 51–89. DOI: 10.31470/2415-3729-2021-14-51-89.

24. Batyuk L., Zhernovnykova O. Education of students in higher educational medical universities of Ukraine taking into account competence-oriented educational technologies. *Journal of Education, Health and Sport*. 2016. V. 6. № 2. P. 375–390. DOI: https://doi.org/10.12775/JEHS.2016.6.02.032.

25. Batyuk L., Chovpan G. Adapting to the conditions of Ukraine the best world experience in the health of the nation: challenges and prospects. Східна політика Європейського Союзу: здобутки, виклики та перспективи : монографія / за наук. ред. Я. Турчин, Т. Астрамович-Лейк, О. Горбача. Львів–Olsztyn. 2021. С. 18–29.

26. Masterplan Medizinstudium 2020. URL: https://www.bmbf.de/bmbf/shareddocs/downloads/files/2017-03-31_masterplan-beschlusstext.pdf?__blob=publicationFile&v=2 (дата звернення: 15.07.2023).

27. Kadmon G., Kadmon M. Academic performance of students with the highest and mediocre school-leaving grades: does the aptitude test for medical studies (TMS) balance their prognoses? *GMS J Med Educ*. 2016. V. 33. № 1. P. 1–29. DOI: https://doi.org/10.3205/zma001006.

28. Kadmon G., Resch F., Duelli R., Kadmon M. Predictive value of the school-leaving grade and prognosis of different admission groups for academic performance and continuity in the medical course – a longitudinal study. *GMS Z Med Ausbild*. 2014. V. 31. № 2. P. 1–26. DOI: https://doi.org/10.3205/zma000913.

29. Knorr M., Hissbach J. Multiple mini-interviews: same concept, different approaches. *Med Educ*. 2014. V. 48. № 12. P. 1157–1175. DOI: https://doi.org/10.1111/medu.12535.

30. Brooks S., Biala N., Arbor S.A. Searchable database of medical education objectives – creating a comparable gold standard. *BMC Medical Education*. 2018. V. 18. № 31. P. 1–8. https://doi.org/10.1186/s12909-018-1136-z.

31. Fischer M.R., Bauer D., Mohn K. NKLM-Projektgruppe. Finally finished! National Competence Based Catalogues of Learning Objectives for Undergraduate Medical Education (NKLM) and Dental Education (NKLZ) ready for trial. *GMS Z Med Ausbild*. 2015. V. 32. № 3. P. 1–5. DOI: https://doi.org/10.3205/zma000977.

32. Vogel B., Reuter S., Taverna M., Fischer M.R., Schelling J. Vaccination: Developing and implementing a competency-based curriculum at the Medical Faculty of LMU Munich. *GMS J Med Educ*. 2016. V. 33. № 1. P.1–14. DOI: https://doi.org/10.3205/zma001004.

33. Frost K., Edelhäuser F., Hofmann M., Tauschel D., Lutz G. History and development of medical studies at the University of Witten/Herdecke – an example of "continuous reform". *GMS Journal for Medical Education*. 2019. V. 36. № 5. P.1–17. DOI: https://doi.org/10.3205/zma001269.

34. Paulmann V., Fischer V., Just I. HannibaL – the model curriculum at Hannover Medical School: targets, implementation and experiences. *GMS Journal for Medical Education*. 2019. V. 36. № 5. P. 1–20. DOI: https://doi.org/10.3205/zma001265.

35. Chovpan G.O., Batyuk L.V. Practical aspects of socio-psychological influence in the field of healthcare in Ukraine. Modern medical science and education in Ukraine and EU countries: imperatives, transformation, development vectors : collective monograph. Riga, Latvia: "Baltija Publishing", 2021. P. 168–187. DOI: https://doi.org/10.30525/978-9934-26-029-2-11.

REFERENCES

1. Batyuk, L. (2017). The European structure of digital competences in Ukrainian society: challenges and innovations. *Journal of Education, Health and Sport, 7(11),* 481–494. DOI: https://doi.org/10.12775/JEHS.2017.7.11.044.

2. Pro skhvalennya Strategiyi rozvitku vishchoyi osviti v Ukrayini na 2022–2032 roki: Rozporyadzhennya Kabinetu Ministriv Ukrayini vid 23 lyutogo 2022 r. № 286-r. Dokument 286-2022-r, chinnij, potochna redakciya. Baza danih «Zakonodavstvo Ukrayini» / VR Ukrayini [On the approval of the Strategy for the Development of Higher Education in Ukraine for 2022–2032: Decree of the Cabinet of Ministers of Ukraine dated February 23, 2022 No. 286. Document 286-2022, valid, current edition. Database "Legislation of Ukraine" / Verkhovna Rada of Ukraine]. Retrieved from: https://zakon.rada.gov.ua/laws/show/286-2022-%D1%80#Text (Last accessed: 15.07.2023).

3. Batyuk, L., Zhernovnykova, O. (2022). Modern educational digital competence of future doctors of Poland as a European state. *New Collegium*, 3, 55–65. DOI: https://doi.org/10.30837/nc.2022.3.55.

4. Sbrueva, A.A. (2004). Tendenciyi reformuvannya seredn'oyi osviti rozvinenih anglomovnih krayin v konteksti globalizaciyi (90-ti rr. XX – pochatok XXI st.): monografiya [Tendencies of reforming secondary education in developed English-speaking countries in the context of globalization (90s of the 20th century – the beginning of the 21st century): monograph]. Sumi: Kozac'kij val, 500 [in Ukrainian].

5. Suhomlins'ka, O.V. (1992). Zarubizhnij pedagogichnij dosvid v Ukrayini v 20-ti roki [Foreign pedagogical experience in Ukraine in the 20s]. *Ridna shkola – Native school, 2,* 3–7 [in Ukrainian].

6. Lokshina, O. (2010). Porivnyal'na pedagogika: zdobutki dvohsotlitn'ogo rozvitku ta suchasni problemi [Comparative pedagogy: achievements of two hundred years of development and modern problems]. *Porivnyal'no-pedagogichni studiyi – Comparative pedagogical studies*, *3/4,* 6–15 [in Ukrainian].

7. Nichkalo, N. (2010). Vchitel' u porivnyal'nij pedagogici: pol's'ko-ukrayins'kij kontekst [A teacher in comparative pedagogy: the Polish-Ukrainian context]. Paradygmaty oświatowe i edukacja nauczycieli pod red. Wasyla Kremienia, Tadeusza Lewowickiego, Swietłany Sysojewej. Kraków, 153–168.

8. Puhovs'ka, L.P. (2005). Modeli bazovoyi profesijnoyi pidgotovki vchiteliv u krayinah Zahidnoyi Evropi [Models of basic professional training of teachers in the countries of Western Europe]. *Didaktika profesijnoyi osviti: zb. nauk. pr. – Didactics of professional education: coll. of science works*, *2,* 139–144 [in Ukrainian].

9. Maksimenko, A.P. (2008). Stanovlennya i rozvitok sistemi universitets'koyi osviti Franciyi (XIX–XX stolittya) [Formation and development of the system of university education in France (19th–20th centuries)]: dis. … d-ra ped. nauk: 13.00.01 "Zagal'na pedagogika ta istoriya pedagogiki". In-t vishchoyi osviti APN Ukrayini. Kyiv, 2008. 444 s. [in Ukrainian].

10. Landman, T. (2008). Issues and methods in comparative politics: an introduction. 3rd ed. 385 p.

11. Owens, J. (2015). Review of A Descriptive and Comparative Grammar of Andalusi Arabic. *JAOS135.2. – Journal of the American Oriental Society 135.2*, 410–414.

12. Darling-Hammond, L., Hyler, M.E. Gardner, M. (2017). Effective teacher professional development. *Learning Policy Institute*. Retrieved from: https://learningpolicy/institute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf (Last accessed: 15.07.2023).

13. Levrints (Lőrincz), M., Greba, I. (2022). Does experience matter?: a comparative study of efl teachers' challenges. *Advanced Education*, *9(21),* 40–54. DOI: https://doi.org/10.20535/2410-8286.255886.

14. Bray, M. (2003). Comparative Education in the Era of Globalisation: evolution, missions and roles. *Policy Futures in Education*. *1(2),* 209–224.

15. Wilson, D.N. (1996). Elements for a prosographic and institutional history of comparative education. The 9th World Congress of Comparative Education. Sydney. 12 p.

16. Practice Theory Perspectives on Pedagogy and Education. / Ed. P. Grootenboer, C. Edwards-Groves, S. Choy. Springer Nature Singapore Pte Ltd. 2017. 284 p. DOI: https://doi.org/10.1007/978-981-10-3130-4.

17. Wilson, D.N. (1994). Comparative and international education: fraternal or Siamese twins? A preliminary genealogy of our twin fields. *Comparative Education Review*. V. 38, № 4. P. 449–486. DOI: https://doi.org/10.1086/447271.

18. Pro vishchu osvitu: Zakon Ukrayini vid 28.05.2023, pidstava – 3062-IX. *Vidomosti Verhovnoyi Radi (VVR).* 2014, № 37–38, st. 2004. Dokument 1556-VII, chinnij, potochna redakciya [On higher education: Law of Ukraine dated May 28, 2023, basis – 3062-IX. *Information of the Verkhovna Rada (IVR)*]. 2014, No. 37–38, Article 2004. Document 1556-VII, valid, current edition. Retrieved from: https://zakon.rada.gov.ua/laws/show/1556-18#Text (Last accessed: 15.07.2023).

19. Pro zatverdzhennya Polozhennya pro internaturu: Nakaz Ministerstva Ohoroni Zdorov'ya Ukrayini vid 22.06.2021 № 1254. Dokument z1081-21, chinnij, potochna redakciya vid 14.06.2022, pidstava – z0591-22. *Baza danih «Zakonodavstvo Ukrayini»* / VR Ukrayini [On the approval of the Internship Regulations: Order of the Ministry of Health of Ukraine dated 06/22/2021 No. 1254. Document z1081-21, valid, current edition dated 06/14/2022, basis – z0591-22. *Database "Legislation of Ukraine*" / VR of Ukraine]. Retrieved from: ttps://zakon.rada.gov.ua/laws/show/z1081-21#Text (Last accessed: 15.07.2023).

20. Pro zatverdzhennya Osoblivostej pidgotovki klinichnih ordinatoriv dlya potreb Ministerstva oboroni Ukrayini: Nakaz Ministerstva Oboroni Ukrayini vid 07.07.2017 № 359. Dokument z0936-17, chinnij, potochna redakciya vid 07.07.2017.

Baza danih «Zakonodavstvo Ukrayini» / VR Ukrayini [On the approval of the Specifics of the training of clinical residents for the needs of the Ministry of Defense of Ukraine: Order of the Ministry of Defense of Ukraine dated 07.07.2017 No. 359. Document z0936-17, valid, current version dated 07.07.2017. *Database "Legislation of Ukraine"* / Verkhovna Rada of Ukraine]. Retrieved from: https://zakon.rada.gov.ua/laws/show/z0936-17#Text (Last accessed: 15.07.2023).

21. Dorozhnya karta osvitnoyi reformy (2015–2025) (neoficijnyj tekst). (2022). [Roadmap for educational reform]. Retrieved from: https://ips.ligazakon.net/document/NT1812 (Last accessed: 15.07.2023) [in Ukrainian].

22. Pro vnesennya zmin do deyakih zakoniv Ukrayini shchodo vdoskonalennya osvitn'oyi diyal'nosti u sferi vishchoyi osviti: Zakon Ukrayini, 2020, № 24, st.170. *Vidomosti Verhovnoyi Radi (VVR).* Dokument 392-IX, chinnij, potochna redakciya vid 18.12.2019 [On amendments to some laws of Ukraine regarding the improvement of educational activities in the field of higher education: Law of Ukraine, 2020, No. 24, Article 170]. *Information of the Verkhovna Rada (VVR).* Document 392-IX, valid, current edition dated 12.18.2019. Retrieved from: https://zakon.rada.gov.ua/laws/show/392–20#n12 (Last accessed: 15.07.2023).

23. Batyuk, L.V, Zhernovnykova, O.A. (2021). Formuvannya profesijnoyi kompetentnosti studenta medichnogo universitetu pri vivchenni mediko-biologichnih disciplin [Formation of the Medical University Student's Professional Competence in the Study of Medical and Biological Disciplines]. *Profesijna osvita: metodologiya, teoriya ta tekhnologiyi – Professional Education: Methodology, Theory and Technologies*, *14,* 51–89. DOI: 10.31470/2415-3729-2021-14-51-89 [in Ukrainian].

24. Batyuk, L., Zhernovnykova, O. (2016). Education of students in higher educational medical universities of Ukraine taking into account competence-oriented educational technologies. *Journal of Education, Health and Sport, 6(2),* 375–390. DOI: https://doi.org/10.12775/JEHS.2016.6.02.032.

25. Batyuk, L., Chovpan, G. (2021). Adapting to the conditions of Ukraine the best world experience in the health of the nation: challenges and prospects. Skhidna politika Evropejs'kogo Soyuzu: zdobutki, vikliki ta perspektivi: monografiya / za nauk. red. YA. Turchin, T. Astramovich-Lejk, O. Gorbacha. L'viv–Olsztyn [Eastern policy of the European Union: achievements, challenges and prospects: monograph / by science. ed. Ya. Turchyn, T. Astramovych-Leik, O. Horbacha]. Lviv–Olsztyn, 18–29.

26. Masterplan Medizinstudium 2020. Retrieved from: https://www.bmbf.de/bmbf/shareddocs/downloads/files/2017-03-31_masterplan-beschlusstext.pdf?__blob=publicationFile&v=2 (Last accessed: 15.07.2023).

27. Kadmon, G., Kadmon, M. (2016). Academic performance of students with the highest and mediocre school-leaving grades: does the aptitude test for medical studies (TMS) balance their prognoses? *GMS J Med Educ*, 33(1), 1–29. DOI: https://doi.org/10.3205/zma001006.

28. Kadmon, G., Resch, F., Duelli, R., Kadmon, M. (2014). Predictive value of the school-leaving grade and prognosis of different admission groups for academic performance and continuity in the medical course – a longitudinal study. *GMS Z Med Ausbild*, 31(2), 1–26. DOI: https://doi.org/10.3205/zma000913.

29. Knorr, M., Hissbach, J. (2014). Multiple mini-interviews: same concept, different approaches. *Med Educ.,* 48(12), 1157–1175. DOI: https://doi.org/10.1111/medu.12535.

30. Brooks, S., Bialam N., Arbor, S.A. (2018). Searchable database of medical education objectives – creating a comparable gold standard. *BMC Medical Education*, *18(31)*, 1–8. https://doi.org/10.1186/s12909-018-1136-z.

31. Fischer, M.R., Bauer, D., Mohn, K. (2015). NKLM-Projektgruppe. Finally finished! National Competence Based Catalogues of Learning Objectives for Undergraduate Medical Education (NKLM) and Dental Education (NKLZ) ready for trial. *GMS Z Med Ausbild*, 32(3), 1–5. DOI: https://doi.org/10.3205/zma000977.

32. Vogel, B., Reuter, S., Taverna, M., Fischer, M.R., Schelling J. (2016). Vaccination: Developing and implementing a competency-based curriculum at the Medical Faculty of LMU Munich. *GMS J Med Educ*, 33 (1), 1–14. DOI: https://doi.org/10.3205/zma001004.

33. Frost K., Edelhäuser F., Hofmann M., Tauschel D., Lutz G. History and development of medical studies at the University of Witten/Herdecke – an example of "continuous reform". *GMS Journal for Medical Education*. 2019. V. 36, № 5. P.1–17. DOI: https://doi.org/10.3205/zma001269.

34. Paulmann, V., Fischer, V., Just, I. (2019). HannibaL – the model curriculum at Hannover Medical School: targets, implementation and experiences. *GMS Journal for Medical Education*, 36(5), 1–20. DOI: https://doi.org/ 10.3205/zma001265.

35. Chovpan, G.O., Batyuk, L.V. (2021). Practical aspects of socio-psychological influence in the field of healthcare in Ukraine. Modern medical science and education in Ukraine and EU countries: imperatives, transformation, development vectors: collective monograph. Riga, Latvia: "Baltija Publishing", 168–187. DOI: https://doi.org/10.30525/978-9934-26-029-2-11.