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THE DEVELOPMENT OF MANAGERIAL COMPETENCE OF FUTURE DOCTORS OF PHILOSOPHY IN MEDICAL EDUCATION: THEORETICAL AND PRACTICAL ASPECTS

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РОЗВИТОК УПРАВЛІНСЬКОЇ КОМПЕТЕНТНОСТІ МАЙБУТНІХ ДОКТОРІВ ФІЛОСОФІЇ У ГАЛУЗІ МЕДИЧНОЇ ОСВІТИ: ТЕОРЕТИЧНІ ТА ПРАКТИЧНІ АСПЕКТИ

Abstract. The article examines the theoretical foundations of the content, structure, and pathways for developing managerial competence among future doctors of philosophy (PhD) in medical education. In the context of the transformation of the higher medical education system in Ukraine, the globalization of science, and the digitalization of the educational space, the development of managerial skills becomes a key factor in the professional readiness of PhD candidates for effective scientific and educational activities. Managerial competence integrates cognitive, operational-activity, personal-motivational, and reflective components, enabling doctoral students not only to conduct research but also to coordinate educational and scientific processes, facilitate team collaboration, make evidence-based decisions, and perform leadership functions.

The essence of managerial competence is defined as a combination of managerial thinking, evidence-based action, and ethical responsibility. Pedagogical conditions for its development are considered, including the integration of theoretical training with practice-oriented learning, the implementation of interdisciplinary courses, participation in scientific and organizational activities, and the creation of individualized educational trajectories. International experience from leading European and American universities demonstrates the effectiveness of a systemic approach to developing managerial competencies at the PhD level.

The findings indicate that the development of managerial competence represents a strategic direction in modernizing the training of scientific personnel in medical education in Ukraine. It contributes to forming researcher-managers capable of combining scientific work with the management of educational processes, implementing innovations, and ensuring the sustainable development of the educational system according to European and global standards. Prospects for further research include deepening the empirical analysis of managerial competence formation, developing diagnostic tools and models for fostering the managerial culture of future researchers, and examining the impact of digital technologies and academic mobility on the dynamics of managerial skills development.

Key words: managerial competence; PhD, medical education; professional competence development; academic leadership; research and educational activity; pedagogical conditions; digital educational technologies; international academic mobility; strategic management.

Анотація. У статті розглядається теоретичне обґрунтування змісту, структури та шляхів розвитку управлінської компетентності майбутніх докторів філософії у галузі медичної освіти. В умовах трансформації системи вищої медичної освіти в Україні, глобалізації науки та цифровізації освітнього простору формування управлінських умінь стає ключовим чинником професійної готовності докторів філософії до ефективної науково-освітньої діяльності. Управлінська компетентність інтегрує когнітивні, діяльнісні, особистісно-мотиваційні та рефлексивні компоненти, що забезпечують здатність здобувача не лише проводити наукові дослідження, а й координувати освітні та наукові процеси, здійснювати командну взаємодію, приймати обґрунтовані рішення та реалізовувати лідерські функції.

Визначено сутність управлінської компетентності як поєднання управлінського мислення, доказовості дій та етичної відповідальності. Розглянуто педагогічні умови її формування, серед яких ключове значення мають інтеграція теоретичної підготовки та практико-орієнтованого навчання, упровадження міждисциплінарних курсів, участь у науково-організаційній діяльності, створення індивідуальних освітніх траекторій. Проаналізовано міжнародний досвід провідних європейських та американських університетів, що свідчить про ефективність системного підходу до розвитку управлінських компетентностей на рівні доктора філософії.

Отримані результати свідчать, що розвиток управлінської компетентності є стратегічним напрямом модернізації підготовки наукових кадрів у медичній освіті України, сприяє формуванню дослідників-управлінців, здатних

поступувати наукову діяльність з управлінням освітніми процесами, упроваджувати інновації та забезпечувати сталий розвиток системи освіти на основі європейських та світових стандартів. Перспективи подальших досліджень включають поглиблення емпіричного аналізу формування управлінської компетентності, розроблення діагностичних інструментів та моделей розвитку управлінської культури майбутніх науковців, а також вивчення впливу цифрових технологій та академічної мобільності на динаміку формування управлінських умінь.

Ключові слова: управлінська компетентність; доктор філософії; медична освіта; розвиток професійних компетентностей; академічне лідерство; науково-освітня діяльність; педагогічні умови; цифрові освітні технології; міжнародна академічна мобільність; стратегічне управління.

Introduction. The contemporary system of medical education in Ukraine is undergoing active transformation, driven both by internal needs to enhance the quality of medical workforce training and by external challenges related to European integration processes, the globalization of science, and the digitalization of the educational space. In the context of higher education reform in accordance with the Law of Ukraine «On Higher Education» (2014), the Concept for the Development of Education in Ukraine for 2021–2031, and the requirements of the European Higher Education Area (EHEA), special attention is given to the training of highly qualified personnel at the third (educational-scientific) level – doctors of philosophy (PhD) – who are capable not only of conducting scientific research but also of effectively performing managerial, pedagogical, and communicative functions.

Medical education, as an integral part of the healthcare system, represents one of the most dynamic sectors, where changes are driven by innovations in biomedical sciences, clinical technologies, digital health systems, and evidence-based practice. Under such conditions, a future PhD graduate must not only be a researcher but also an organizer of the scientific and educational process, a leader of interdisciplinary teams, a project coordinator, and a decision-maker capable of strategic thinking under uncertainty. This requires the development of a new model of the researcher's competency profile, with managerial competence at its core, ensuring effective scientific communication, leadership, educational environment organization, and management of one's own research activities.

The development of managerial competence among future PhD graduates in medical education aligns with current trends in higher education, where key priorities include student autonomy, academic mobility, a project-based approach to research, and responsible leadership. Experience from European universities indicates that managerial competence is a fundamental condition for the successful functioning of PhD programs, as it integrates intellectual independence, organizational culture, and strategic thinking (Korda et al., 2023).

In the Ukrainian context, the issue of developing managerial competence among future PhD graduates in medical education is only beginning to be systematically addressed. Despite a developed regulatory framework, postgraduate training practices reveal insufficient attention to the managerial component,

manifested in the absence of specialized courses in educational management, limited opportunities to gain leadership experience, and misalignment between theoretical and practical elements of training.

Thus, the relevance of this study is determined by the need for a scientific and theoretical understanding of the essence of managerial competence in the context of PhD training in medical education, as well as the identification of its structure, content, influencing factors, and pedagogical conditions for development. Particular importance lies in the search for effective educational strategies that ensure the preparation of PhD graduates not only as researchers but also as competent managers capable of initiating changes, coordinating scientific processes, developing academic teams, and ensuring the quality of medical education at the level of European standards.

The aim of this article is to provide a theoretical justification of the content, structure, and pathways for developing managerial competence among future PhD graduates in medical education, as well as to identify practical aspects of its formation during professional training.

Theoretical framework. The concept of managerial competence is addressed in the scholarly literature in various contexts – ranging from classical management theories (Liang et al, 2018) to contemporary concepts of leadership, strategic management, and educational administration (Çitaku, 2012). In the educational context, it is interpreted as an integrated personal characteristic that reflects the readiness and ability to perform managerial activities effectively, based on knowledge, skills, values, professional experience, and reflection (Bryman, 2007; Korda et al., 2023). In the context of training doctors of philosophy (PhD) in medical education, managerial competence acquires particular significance, as it combines the two dimensions of PhD activity – scientific and educational-organizational. It manifests in the ability of future researchers not only to manage their own research activities but also to plan, organize, and motivate other participants in the educational process, monitor outcomes, and make responsible evidence-based decisions.

Within the contemporary paradigm of evidence-based management, managerial competence in medical education also entails analytical skills, understanding of statistical methods, critical thinking, and the ability to integrate research findings into management decision-making (Sackett et al., 2016).

Thus, managerial competence emerges not merely as a set of functional abilities but as a complex integrative characteristic encompassing cognitive, ethical, socio-communicative, and project-innovative potentials of the individual. According to Korda et al. (2023), the development of managerial competence is a component of fostering the academic culture of future PhD graduates, as it ensures their readiness for autonomous scientific and educational activity, self-organization, and responsible leadership.

A systematic analysis of scholarly approaches (Shelestova et al., 2020; Zinner et al., 2022) allows several interrelated components of managerial competence to be distinguished: cognitive, operational-activity, personal-motivational, and reflective. The cognitive component encompasses knowledge in management, leadership psychology, higher education pedagogy, educational policy, leadership ethics, and digital transformation. For PhD graduates in medical education, it is also essential to possess knowledge of clinical research organization, principles of bioethics, international Good Clinical Practice standards (ICH-GCP), and quality management systems in higher education institutions (Van Diggele et al., 2020).

The operational-activity component includes skills in planning, organizing, motivating, and controlling educational and research projects, coordinating research teams, strategic planning, organizing scientific events, and ensuring monitoring and internal quality assurance. The personal-motivational component forms the value-based foundation of managerial activity: it is related to the development of leadership qualities, academic integrity, responsibility, initiative, collaboration, and a willingness to take risks and innovate. In modern scientific environments, a PhD graduate should act not merely as a research executor but as a change agent who motivates colleagues toward innovative activity (Doles et al., 2023).

The reflective component ensures the ability for self-analysis and self-correction of managerial actions, as well as critical evaluation of one's decisions and outcomes, thereby laying the foundation for professional growth and sustainable development. Overall, the structure of managerial competence represents a dynamic system that develops through research and pedagogical practice and depends on the level of meta-competencies – communicative, analytical, innovative, and ethical (Kumar et al., 2020).

Medical education is inherently complex, integrating professional training, scientific activity, and clinical practice. Therefore, the formation of managerial competence in future PhD graduates must account for the specific nature of the field. A particular role is played by the dual focus of training – the combination of research and clinical-pedagogical functions, which requires systems thinking, risk management,

and the ability to work in multidisciplinary teams (Kibe et al., 2022). The high level of ethical responsibility in medical professionals necessitates the development of ethical competence as a key component of the PhD managerial culture. Simultaneously, modern medicine is rapidly evolving under the influence of digital transformation – telemedicine, bioinformatics, and artificial intelligence – which creates a need for the development of digital managerial literacy, i.e., the ability to effectively use digital tools for organizing, monitoring, and evaluating educational and research processes (. Wijk et al., 2019).

The development of managerial competence in PhD candidates can be achieved through the modernization of educational programs, incorporating courses on the fundamentals of management, leadership, strategic planning, and academic culture; involving doctoral students in project activities, including the design and implementation of educational and research initiatives; fostering mentorship and tutoring, where doctoral students act as junior supervisors of student research; and participation in international programs and grant projects, which provide practical managerial experience. Thus, the formation of managerial competence in future doctors of philosophy in medical education should be based on principles of integrativity, practice-orientation, ethics, and digitalization (Elkhyer et al., 2022).

International experience confirms the effectiveness of a systemic approach to developing managerial skills among doctoral students. In European countries, including the Netherlands, Sweden, and Finland, the research-based learning model emphasizes active involvement of doctoral students in managing their own research projects: they develop work plans, conduct ethical reviews, and coordinate inter-university collaborations (Howell et al., 2022). In the United Kingdom, Doctoral Leadership and Management programs include modules on academic leadership, ethical decision-making, communication, and change management, whereas in the United States, Graduate Professional Development Frameworks focus on project management skills, financial literacy, and the organization of collaborative research (Council of Graduate Schools, 2020). Of particular note is the practice of supervisory training – specialized workshops for academic supervisors aimed at developing effective communication, mentoring, and partnership management skills in the PhD training process (Tenzin, 2019). Such approaches foster autonomy and responsibility among future PhD graduates, gradually providing them with experience in managing research teams.

In the Ukrainian context, the PhD training system is only beginning to align with European standards. Although the regulatory framework governs educational and research activities (Cabinet of Ministers of Ukraine Resolution No. 261, 23.03.2016), the

managerial component within educational programs remains underdeveloped. Key challenges include a lack of interdisciplinary courses in research management, limited opportunities for practical managerial experience, insufficient preparedness of some supervisors to develop managerial skills in doctoral students, and a weak connection between theoretical training and the real needs of educational management. At the same time, a number of leading medical universities (Kyiv, Lviv, Ternopil) have already implemented training programs in academic leadership, grant writing, and research project management (Korda et al., 2023), reflecting gradual convergence with European Research Area practices.

Further development of managerial competence in future PhD graduates should rely on the creation of integrated educational environments, in which doctoral students not only acquire knowledge but also apply it in practice. The most effective forms of activity include academic leadership training, simulations of managerial situations, research internships with administrative elements, and individualized educational trajectories that allow independent planning of scientific work. Digital project management platforms – such as ResearchGate, Mendeley, Asana, and Google Workspace – play a significant role in developing skills in remote management and team collaboration. Positive outcomes are demonstrated by so-called PhD leadership schools – short-term intensive programs combining learning, project work, and reflective practice.

Therefore, the practical aspect of developing managerial competence lies in creating a modern educational and research environment in which doctoral students become active agents in managing their educational trajectories, research processes, and team interactions. This model can ensure the formation of a new generation of scholars – leaders who combine deep scientific expertise, managerial thinking, and a high level of ethical culture.

Conclusions and prospects for further research. The conducted theoretical analysis allows us to conclude that managerial competence in future doctors of philosophy in medical education is a key component of their professional readiness to function effectively in the modern educational and research environment. It integrates cognitive, operational-activity, personal-motivational, and reflective components, enabling PhD candidates not only to engage in scientific creativity but also to manage research and educational processes, facilitate team collaboration, make decisions, and exercise leadership functions.

The essence of managerial competence in medical education lies in the combination of managerial thinking, evidence-based actions, and ethical responsibility. Its development is impossible without fostering qualities such as critical thinking, strategic vision, innova-

tion, communicative culture, readiness for reflection, and professional self-development. Managerial competence equips PhD candidates to act both as autonomous researchers and as organizers of collaborative activities, focusing on achieving quality in education and science based on the principles of evidence, academic integrity, and interdisciplinary cooperation.

The development of managerial competence in future doctors of philosophy in medical education requires the creation of an integrated pedagogical system that combines theoretical training, practice-oriented learning, and reflective-analytical activities. Effective methods for its development include the implementation of interdisciplinary courses in management, leadership, educational policy, and digital management technologies; the expansion of doctoral students' involvement in project-based, mentoring, and scientific-organizational activities; and the introduction of individualized educational trajectories that encourage independence and responsibility for learning outcomes.

Experience from leading European and American universities demonstrates that the development of managerial competencies at the PhD level is an integral part of modern educational and research programs. Integrating such practices into the Ukrainian educational context will enhance doctoral students' autonomy, increase the efficiency of scientific supervision, develop the leadership potential of young researchers, and foster a new culture of management in medical education.

In summary, the research findings indicate that the development of managerial competence in future doctors of philosophy represents a strategic direction for modernizing the training of research personnel in the medical field. Its implementation will contribute to the emergence of a generation of researcher-managers capable of effectively combining scientific work with the management of educational processes, implementing innovations, developing academic communities, and ensuring the sustainable development of the Ukrainian medical education system in accordance with European and global standards.

Prospects for further research include deepening the empirical analysis of the process of forming managerial competence in PhD candidates in medical universities, developing diagnostic tools to assess its levels, and creating authorial models and programs for the development of managerial culture among future researchers. Another promising area of investigation is the study of the impact of digital educational technologies and international academic mobility on the dynamics of managerial skill formation, which will allow the optimization of third-level educational programs and enhance their alignment with the contemporary challenges of a globalized educational environment.

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