UDC 61.3:378.147.091.33.016:[617+578/579]
DOI https://doi.org/10.32782/2519-4151-2025-1-8

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MODERN APPROACHES TO TEACHING IN EXTREME CONDITIONS OF THE MARTIAL LAW

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УДК 61.3:378.147.091.33.016:[617+578/579]
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СУЧАСНІ ПІДХОДИ ВИКЛАДАННЯ В ЕКСТРЕМАЛЬНИХ УМОВАХ ВОЄННОГО СТАНУ
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Актуальність. Медичні університети все більше використовують сучасні технології для поліпшення навчання. Це включає використання віртуальної реальності, симуляційних навчальних програм, медичних баз даних та інших інтерактивних інструментів для навчання та оцінювання навчальних досягнень здобувачів вищої освіти. Сучасною реалією в навчанні здобувачів в Одеському Національному Медичному Університеті є гостра необхідність створення оптимальних умов для проведення практичних та клінічних занять. У наданому матеріалі показані не тільки актуальні проблеми курсу мікробіології, травматології та ортопедії, а й специфіка навчання в екстремальних умовах.
Мета. Проаналізувати та верифікувати ефективні засоби навчання професіоналів у медичній галузі, прийняти до уваги сучасні напрями та інновації, зміни в системі охорони здоров'я.
Матеріали і методи. Проведено аналіз основних видів діяльності формування майбутніх фахівців, ефективні варіанти підготовки з огляду на сучасні тенденції та нововведення, зміни в системі охорони здоров'я та потреб пацієнтів.
Результати. Сучасні умови викладання в медичних закладах вищої освіти спрямовані на підготовку висококваліфікованих та етичних медичних фахівців, які здатні впроваджувати новітні підходи та технології в медичну практику. Оволодіння спеціальністю, набуття практичних навичок виявило масу відмінностей між очним і дистанційним навчанням.
Висновки. Отримані знання і набуті навички – це основа професійного зростання лікаря, починаючи з моменту вступу до медичного університету і до закінчення кар'єри. Цей професійний досвід активно впливає і на розвиток спеціальності, тим паче це все здійснюється в непростих екстремальних умовах воєнного стану.
Ключові слова: медична освіта, викладання мікробіології, професійне зростання в ортопедії та травматології, особливості проведення онлайн-занять.

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Actuality. Medical universities are increasingly using modern technologies to improve learning. This includes the use of virtual reality, simulation training programs, medical databases and other interactive tools for teaching and assessing student's academic achievements. The current reality in the training of applicants at Odesa National Medical University is the urgent need to create optimal conditions for practical and clinical training. The material provided shows not only the actual problems of the course of microbiology, traumatology and orthopedics, but also the specifics of training in extreme conditions. **Purpose.** To justify and analyze effective options for the training of the professionals in medical field, to take into account modern trends and innovations, changes in the health care system, and meeting the standards of the patient needs. **Material and methods.** An analysis of the main types of activities for the formation of future specialists was performed. **Results.** The modern conditions of the teaching in medical schools are aimed to perform the highly qualified ethical professionals of the medicine who are able to implement the latest approaches and technologies in medical practice. Mastering a high level degree in medicine field, acquiring the practical skills has revealed a lot of differences between face-to-face and distance learning. **Conclusions.** The achieved knowledge and aquared skills are the basis of the doctor's professional growth, starting from the moment of admission to a medical school and until the end of the career in medicine. This professional experience actively affects the development of the profession in medicine, especially since all this is fulfiled in the difficult and extreme conditions of the martial law.
Key words: medical education, teaching microbiology, professional growth in orthopedics and traumatology, and the features of the online learning platform.

Introduction

More and more educational programs are aimed at developing the analytical skills of students, as well as their abilreity to solve clinical situations in extreme conditions. This will make it possible to obtain a qualitatively new level of the professional training of the new proffessionals. It is also necessary to take into account the fact that the training process takes place in the unfavorable environment of the COVID-19 pandemic, and the martial law. That is why the emergence of new remote approaches to interaction in various spheres of social activity, including the learning process, was rapidly activated [2]. Certain approaches to the development of remote approaches of interaction between the teacher and students have been established during the last decade, especially such forms of teaching as lectures, seminar discussions and debates, etc. This especially applies to the high schools of medicine [1; 3]. After all, it is necessary to constantly raise the level of training programs for medical doctors. The are existed problems faced by medical students during the training, that primarily related to the lack of practical classes and the ability to interact with patients during online classes. These aspects lead to the loss of students' motivation, and significantly worsen the mastering of acquired theoretical material. Therefore, universities are now looking for ways to avoid these problems, taking into account the conditions in which training takes place. At the same time, some authors find that online medical education is not inferior to offline education in its qualities [4, 5].

The purpose of the study

The study of the possible ways and means of training future doctors in the created extreme conditions.

Material and methods

The obtained data formed the basis of the study of the stages of development of such disciplines as "Microbiology, virology and immunology" and "Epideniology" and became the basis for the formation of the high-level medical proffessionals.

Results and their discussion

The study of microbiology, traumatology and orthopedics begins in the II-III years of ONMedU in the disciplines "Microbiology, virology and immunology" and "Epidemiology and biosafety". The students learn the basics of microbiology and traumatology, they get an idea of the interaction of micro- and macroorganisms, diseases of the musculoskeletal system, features of the clinical course and possible consequences, both in the course of the traumatic disease and in the postoperative period. However, practical classes remain mandatory for training medical professionals and cannot be transferred to distance learning.

Distance learning at ONMedU takes place using a combination of Microsoft Teams and Moodle platforms, which allowed students to monitor independently the level of learning, and the need for additional study of certain issues. Students have an additional opportunity to prepare information received independently in the form of reports using presentations in Micrisost Pawer Point format for joint discussion and analysis during practical classes with the teacher. However, it should be emphasized that, given the specifics of teaching practical classes using traditional methods of teaching material, which are generally aimed at activating the motivational and cognitive function of the learning process in the context of close interaction between the teacher

and the student within the classroom, offline classes contribute to a more responsible attitude of students to the training process. In addition, such practical classes allow you to master certain skills of applying theoretical knowledge in practice. Unfortunately, this process is not possible in distance learning, which to some extent worsens the training of medical professionals. The peculiarity of the educational process is the independent work of students.

It is the independent acquisition of new knowledge and skills that can inspire applicants to engage in new approaches to organizing discussion and self-examination in the form of webinars, quests, case studies, etc. Such skills should undoubtedly accompany future healthcare professionals regardless of their narrow specialization. Taking into account certain areas of modernization of higher medical education, which provide for the formation of skills of continuous independent updating of previously acquired knowledge, establishment of interdisciplinary links, application of the acquired information for the acquisition of practical manipulation skills, distance learning provides certain advantages, as it allows to improve the use of telecommunications, virtual laboratories and information technologies in order to develop new skills in medical students, which in the future can be used in the practice of medicine. Due to the full-scale invasion, international educational platforms have provided free access to their resources to Ukrainian higher education institutions. In particular, the Labster platform is a virtual laboratory that can be used to consolidate and improve the laboratory skills that students have acquired while studying microbiology, virology, and immunology. Given the modern approach, virtual reality, and the ability to complete various quests and levels, students not only learn, but also have greater interest and motivation. During the course of our discipline, each student has access to the platform and is able to undergo trainings and training to improve their laboratory skills and to understand and interpret the results of such tests as Gram staining, bacteriological methods for identifying pathogens, serological (enzyme-linked immunosorbent assay, immunofluorescence), PCR, and others in more detail. Such platforms, in particular for medical students, allow the teacher to demonstrate and practice practical skills in an online format as part of the medical school curriculum. The Labster program also has a mobile application that allows students to study at any time and save the level they have completed in the program. For high-quality and motivated learning, students need to be given introductory lectures on the use of various educational platforms and encouraged to participate in international courses and seminars. This will increase the level of learning and enable students to use modern approaches and protocols to diagnose and treat their patients. In particular, at the department of general and clinical epidemiology and biosafety with the course of microbiology and virology, in cooperation with the Moodle platform, teachers provide students with the opportunity to take various international courses and seminars with a certificate of completion, which not only allows them to improve their English, but also to gain modern knowledge and approaches to the diagnosis and treatment of patients.

In addition, to understand the effectiveness of online learning, Odesa National Medical University has introduced an anonymous survey for students after completing each discipline. During the survey, students evaluate the effectiveness of training at a particular department, including the professional and organizational skills of the teacher, as well as self-assessment of the acquired knowledge in terms of the feasibility of its use in the future specialty from the student's point of view. Also, each student can write suggestions and feedback about the department, which can significantly improve the quality of teaching, and draw attention to more complex topics for learning and allocate more time for them.

Similar methods of organizing and conducting training for postgraduate specialists are not excluded [6]. However, practical training remains mandatory for medical professionals, and cannot be transferred to distance learning.

It should be noted that it is not possible to obtain the same effect as in the traditional form of training in an on-line or mixed format. It is impossible to train a specialist based on theory alone, and to watch various manipulations on a monitor. Manual skills are a must. Limited access to resources that can only be available in the classroom, at the patient's bedside, in the operating room, etc. is an obstacle to obtaining the desired result. Direct communication with patients and department staff contributes to the further formation of a specialist. The applicant begins to realize that the patient's condition depends on his or her professional training. A trained doctor should easily navigate the biomechanism of the information received from the patient, make a differentiated diagnosis and establish a clinical diagnosis; choose laboratory diagnostics and optimal treatment. The applicant is obliged to participate in rounds, in clinical reviews of patients. Improving and maintaining the knowledge gained at a high level is the main modern requirement.

Thus, the methods of training specialists include the entire scope of educational activities: video lectures, practical classes, case studies, research work of applicants, modern means of thematic information: participation in webinars, quests, conferences and congresses. A great role is given to the teacher's personality, professional and moral qualities.

That is why nowadays the educational program, primarily for medical students, should be offline or in a mixed format. Theoretical knowledge and the bulk of the material should be provided through online resources, and practical skills should be developed in direct contact with the patient. Forming compliance between a doctor and a patient requires significant skills from the student: not only medical knowledge, but also psychological and social communication. Acquiring the profession of a doctor is a complex multi-level process that requires both the student

and the teacher to constantly improve, using all the opportunities and modern approaches in education, and subsequently, in the practice of medicine. One of the tasks of a teacher during university studies is to form students' understanding of improving and increasing the level of knowledge throughout the entire practical activity of a doctor. The medical industry is developing more and more every year and requires continuous improvement and learning from the student, and then from the future doctor. It should be noted that the formation of clinical thinking, as one of the main tasks of a medical student after graduation, includes not only knowledge of the pathogenesis of the disease, but also logical and extraordinary thinking, as two fundamentally contradictory concepts, to select the most informative methods of diagnosis and treatment. Establishing a clinical diagnosis requires considerable knowledge and creative approaches, and requires a doctor to have, in addition to professional skills, knowledge of psychology and communication, logical thinking, and sometimes creativity. In order to develop such a complex and professional set of skills, a medical student must have great potential and motivation to learn. Unfortunately, in the current conditions of martial law, the quality of education is decreasing due to the high amount of stress and anxiety, which requires the involvement of psychologists, or teachers taking courses in cognitive behavioral therapy, or acquiring the basics of anxiety psychology.

Such challenging teaching and learning environment can have its positive aspects. Firstly, the use of modern educational platforms is important for the formation of evidence-based doctors; secondly, teachers are constantly improving their skills not only in the scientific field, but also in the use of various technologies, which expands the potential and capabilities of teaching. Thirdly, students learn to use different sources of information, which contributes to the formation of critical thinking. And finally, the creation of challenging teaching and learning environments contributes to the progress and improvement of teaching and requires further discussion and implementation of new methods.

Conclusions

1. The process of development of higher education is reflected in the training of medical specialists and corresponds to the current level of science and the amount of information accumulated. It is constantly improving depending on the information flow.

2. The physician must be proactive, conscientious in his/her work and demanding of himself/herself and subordinates, a good organizer and have high morality, especially in difficult and unpredictable situations. These qualities are subject to education by all available means, starting from the student's bench of the medical university, and further deepening and improvement of knowledge and skills should continue until the end of his/her professional activity.

Conflict of interests. The author declares that there is no conflict of interest and no financial interest in the preparation of this article.

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Надійшла до редакції 25.03.2025
Прийнята до публікації 26.04.2025
Опубліковано 30.06.2025