

UDC 378.147:61(147)

DOI <https://doi.org/10.32782/health-2023.4.37>

## BLENDING LEARNING IN A MEDICAL EDUCATION SYSTEM UNDER WAR TIME CONDITIONS IN UKRAINE: APPROACHES AND METHODS

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*The experience of organizing and implementing the pedagogical process in the system of higher medical education in wartime conditions in Ukraine has not yet been summarized and analyzed. The extreme conditions of that time affected the system of higher medical education as a whole, and also gave a significant impetus to the promotion and development of various forms and technologies of education. It is clear that new forms, methods and approaches of educational activities must meet, if not all, then most of the challenges that have arisen both for seekers of higher education and for teachers today.*

*Since education in institutions of higher medical education requires students to acquire not only deep theoretical knowledge of medical disciplines, but also, at the same time, certain practical skills, medical education is one of the few that cannot be obtained in absentia. In this regard, there is a need to find ways and means of integrating new learning formats into the educational process, which would be safe, sustainable and equipped for all kinds of unexpected scenarios in the future, as well as thanks to which students of education would be able to master all the necessary competencies.*

*The article examines the problems of using different models of organization of education in medical institutions of higher education in modern conditions, their advantages and disadvantages. The article discusses blended learning as one of the trends of the modern system of higher education, the relevance of which will grow in medical universities and the need for its widespread implementation is already obvious. The role of blended learning as an integration of traditional and distance learning and its significance in modern wartime conditions is emphasized, as well as the need for a teacher of a medical higher medical institution to master modern information, communication and educational technologies. Conclusions were made regarding the effectiveness of using this approach and the available opportunity to obtain high-quality higher medical education in today's conditions.*

**Key words:** higher medical education, traditional learning, blended learning, flipped class.

**Марина Жукова, Олена Ткаченко, Оксана Коковська, Ігор Міщенко. Змішане навчання у системі медичної освіти в умовах воєнного часу в Україні: підходи та методи**

*Досвід організації та реалізації педагогічного процесу у системі вищої медичної освіти в умовах воєнного часу в Україні ще не узагальнено та не проаналізовано. Екстремальні умови цього часу вплинули на систему вищої медичної освіти загалом, а також дали істотний поштовх просуванню та розвитку різних форм і технологій освіти. Зрозуміло, що нові форми, методи та підходи освітньої діяльності повинні відповідати якщо не всім, то більшості викликів, які постали нині як перед здобувачами вищої освіти, так і перед викладачами.*

*Оскільки освіта в закладах вищої медичної освіти передбачає оволодіння студентами не тільки глибокими теоретичними знаннями з медичних дисциплін, а й одночасно певними практичними навичками, тому медична освіта – одна з небагатьох, яку не можна отримати заочно. У зв'язку з цим виникає необхідність пошуку способів та засобів інтеграції у навчальний процес нових форматів навчання, які були б безпечними, стійкими та обладнаними для всіх видів неочікуваних сценаріїв у майбутньому, а також завдяки яким здобувачі освіти змогли б опанувати всі необхідні компетенції.*

*У статті розглядаються проблеми використання різних моделей організації навчання в медичних закладах вищої освіти у сучасних умовах, їх переваги та недоліки. У статті обговорюється змішане навчання як один із трендів сучасної системи вищої освіти, актуальність якого в медичному виші зростатиме і необхідність широкого впровадження якого вже зараз очевидна. Підкреслюється роль змішаного навчання як інтеграції традиційного та дистанційного навчання та його значення у сучасних умовах воєнного часу, а також необхідність оволодіння викладачем вищого медичного закладу освіти сучасними інформаційно-комунікаційними та освітніми технологіями. Зроблено висновки щодо ефективності використання такого підходу та доступної можливості здобути якісну вищу медичну освіту в умовах сьогодення.*

**Ключові слова:** вища медична освіта, традиційне навчання, змішане навчання, перевернутий клас.

**Introduction.** The main type of work of students of medical institutions of higher education there is training, mastery of in-depth knowledge of medical disciplines, at the same time, certain practical skills. It is an integral part a future doctor who aspires to take a worthy place in the medical field and be competitive. Therefore, medical education is one of the few that cannot be done get in absentia. One of the results of the teaching methodology at in higher education – directing the acquisitions of theory in a practical direction. That's why students learn and master in practical classes in addition to theoretical knowledge and some methods of research, diagnostics [1, p. 75–76].

However, what if the whole world is first challenged on a large scale by the Covid-19 pandemic, and then there was a full-scale war invasion on the territory of Ukraine and the introduction of martial law? Limited access of students to universities and university colleges classrooms during air raids (in Ukraine, the provision still continues wartime in connection with a full-scale war) causes uncertainty about how to organize the educational process. In this connection, the teacher needs to find ways and means of integration into the educational process of new learning formats, thanks to which students will be able to master all the necessary competencies. For today it is no longer possible to imagine an educational space without the use of information communication technologies. Therefore, in modern realities there is a need revision of methods and approaches to teaching disciplines in higher education institutions

**Aim and tasks.** The article aim is in searching the methods and means of new learning formats integration in an educative process for all necessary competencies managing by higher education applicants. The tasks comprised various educative models applying in higher medical establishments, their advantages and disadvantages.

**The research methods** – the theoretical ones on scientific-methodic literary review on the article problems area.

**The research results.** Experience in the organization and implementation of pedagogical process in the system of higher medical education in war-time conditions in Ukraine not yet summarized and analyzed. However, it is already possible to claim that in addition to the shock effect on the system of higher medical education as a whole, the extreme conditions of that time gave a significant impetus to progress and development various forms and technologies of education [2, p. 97]. Pedagogical technology is not permanent, it is undergone to changes or it gets improved dependently on the education changed conditions. Education informative paradigm oriented to knowledge sharing skills development gets changed to the competence one based into forming the abilities to the profession management by future doctor. That is why priority must belong to combination of two modern educative strategies – the traditional one and the innovative one. What do we mean? The one based into medical students being ready to dynamic changes in a society due to clinical thinking various forms development as well as his personal one [3, p. 11].

Despite every method importance, both traditional and on-line education possesses its own distinguishing features. Shelters visit during alarms create a disadvantage of impossibility to visit practical lessons, lectures are located on the chairs sites; the information proper managing becomes hardened or even often impossible under war conditions. Other disadvantages of on-line education include education when it is comfortable to the students creating a danger to avoid receiving knowledge at all as well as interpersonal contacts absence between the tutors and education applicants resulting into discussions amount decrease, increased dependence on electronic mail, problems with approach to Internet when it is

necessary; direct contact to the applicants are also essential for a proper assessing the students in part because it is impossible to see the students' faces because they switch their cameras off during their asking, to check who indeed performed a home task. Therefore, knowledge quality final control is desirable to be realized off-line but not on-line [2, p.100].

Covid-19 pandemy helped in determining the distance learning' weak sides that corrected the teachers' actions in many countries on its ways, approaches and methods approving; these weak sides don't allow to use remote education as a base method in teaching in the universities and other higher educational establishments.

There exists indefinite and variative character in relation to points of consideration about educative process organization because of the applicants' limited approach to the universities and auditories in them. It is so because military time was not cancelled in Ukraine.

It puts a task to any tutor to search the pathways and integrative means about new educative formats inclusion into the teaching process with the aim to provide all competencies managing by the applicants. Informative-communicative technologies belong to them and for sure it is impossible to imagine modern educative space without them. That is why it is of crucial importance to perform a careful analysis and re-building, changing, modernization, adapting to new and changeable conditions of the methods and approaches to the academic disciplines teaching in higher educational establishments.

Current conditions created an essentiality to use blended education model in higher educational establishments while including the new technologies without refusing from the traditional ones.

Blended learning represents modern higher education trend with evident actuality and inclusion essentiality at Pedagogy modern developmental stage and under current war conditions in Ukraine. This system unites on-line (remote, distance, distant or interactive) and off-line education best aspects and advantages. A student is not knowledge passive consumer but he becomes an educative process active participant. He has a permanent approach to the educative portal materials and therefore receives new educative tasks regularly. Remote education is good because any student is able to ask his/her tutor and to receive an answer rather rapidly without waiting for the next lesson. That is why a blended learning encourages to motivation increase as well as the one of the students' involvement into the educative process.

Blended learning represents rather new educative methodic essential at non-remote education under modern conditions. Blended learning unites the elements of main European educative models: distance or remote learning, education in the auditory (traditional or face-to face learning) as well as education though Internet (online learning, remote learning, distance learning or education).

The basis of the traditional model is the reading of lectures, practical and laboratory activities, the organization of independent work of students, etc. The base of learning is a book and a tutor, as an interpreter of knowledge. The most important advantage of the traditional technology, which realizes the direct transmission of information practically without difficulty, without mistakes, is undoubtedly the ability to transduct, to convey a great volume of information for a short time. Rather often the students have no time during usual off-line lessons to interrupt themselves, to think about the told, and they can miss important moments therefore. The students manage ready knowledge at such a mode. Distance learning is oriented to introducing principally different educative models in a learning process with rather distinguished activity types delt to computer and non-traditional technologies – so called digitalization technologies which have received a pronounced significant in an educative environment. Besides, the majority of higher education applicants were born in the époque of digital technologies; it impacts greatly on their perceiving the information as well as interaction to surrounding people. Therefore, traditional educative forms and methods in higher medical education should be reviewed and the new ones should be developed with digital technologies usage in a blended form. Not ready knowledge receiving are valuable, but self-work on the process of their receiving and management during effective informative search at modern online sites with special services. Acquired skills will be useful during the applicants' future professional development. Remote learning can be and is useful and affordable not only for the students but also for the teachers during their qualification improvement courses with various technologies and ability to use various communication activity styles, apply multi-leveled testing system, replenish the databases and accumulate different statistics. In a separate cases remote learning represents essential and non-changeable form of education, even in higher medical establishments and is relatively perspective at therapeutical profile departments [4, p. 137].

Modern electronic educative means in a medical educational establishment allow to improve education

quality, because applying the active educative strategies, the newest educative technologies increase the student's activity and improve self-work performance during managing the material. Interactive communication encourages to personality-oriented approach in educating. One can differentiate self-education, collective education, education during co-operation, when both the tutor and the student become educative process subjects [5, p. 172]. One can mention such disadvantages during remote education as time non-effective guiding, self-discipline absence, technical problems and not always good quality of educative material. Additional loading is put to the tutor because he/she should do much to increase the applicants' motivation during such a mode of education. The lessons must be as much saturated with useful information and rich in ppt, videos, audios, YouTube materials and so on as possible. There are the students who think on-line lectures and practical lessons boring and don't visit them at all while having opportunity to rework absences in electronic classroom during so called blended learning or while solving the tests/tasks, answering the questions on the missed lesson/s. The tutors should prevent such an attitude with their brilliant and really interesting lessons which will be remembered by the students for long and applied in their professional activity to a great extent.

Blended education gives new opportunities to the students for managing the academic disciplines by them. It is possible to look though the necessary material on-line and not only – to solve the tests, to check own knowledge, to get acquainted to the additional references at the same time. Blended education gives the educative content in audio- and video-formats rather often when necessary. It allows in turn to be flexible with the information given, correspondingly to own needs and abilities. We mean the students' ones. A given technology applying allows to improve the education results as well as to improve the students' autonomic learning skills. Blended education role is in providing the adapted individualized preparing of every student. Its inclusion in higher education system is connected to orientation onto student-centered approach, the accents' replacement to the students' independent activity. Besides, blended education represents one of the flexible educative process organization mechanisms under educative system transformation conditions.

Curricular activity in the auditories represents traditional compound while Internet-technologies – the distance or remote one in blended education as a whole. A whole group can have on-line and off-line lessons during blended education.

The “flipped classroom” model represents the blended learning rotational model. Flipped education represents pedagogical approach to blended education when lessons in the auditories and extra-auditory activity (curricular and extra-curricular activity with other words) are interchangeable. A given technology is a pedagogical model in which new educative material giving and extra-curricular activity organization are represented on the contrary. The students manage the new material independently in an electronic environment and after this they apply the knowledge received during their curricular activity by means of practical tasks performing or the discussions [6, p. 141]. The students manage the lesson's materials as videolectures, ppt, work with the recommended references and the sites materials proposed by the teacher, after which the students work in the auditories, id est direct learning is realized out of the auditory while practice, applying and the students' assessment by the tutor – in the auditory itself. This model represents one of the most known and comfortable among blended education other models nowadays. So, lectures are in on-line mode at PSMU Physiology chair while the practical lessons are in the off-line one with the theoretical knowledge acquired fixing after its managing during activity with the lecture material. The lessons are dedicated also to the students' practical work organizing. The tutor uses visual means, observations, experiments if he or she feels that the students did not understand anything and the explanation success depends on his talent to prove his words, to build his speech logically, to speak exactly. Communication and discussion as education method can be used for the knowledge received fixing. The teacher makes the students to the knowledge acquired reproducing, forming the independent conclusions and generalizations on the base of the learned material. The conversation and discussion can be on-line and off-line dependently on current situation. Practical works as an educative method are directed to forming the skills and experiences essential for professional education. Such works performance helps to the knowledge making concrete, to the skills developing concerning observation and explain the phenomena essence, but they are impossible to be performed on-line. On-line tests training can be realized for the students' assessing with their solving previous discussion in the auditory under the tutor's guidance. One advantage in comparison with the traditional educative technologies is that the student always has an approach to the methodical materials such as lectures, practical tasks, recommended literature and tests.

**Conclusions.** Taking all the mentioned above into consideration, it is possible to conclude that the “flipped lesson” method is able to cease the education process and to take psychological difficulties connected to it away. The students mustn’t do their home task by traditional methods that lowers stress and anxiety level caused by study material big volume that must be learned independently.

Also, a given method allows the students to study a new material with their own velocity, because they are able to look the videomaterial how many times they need it. Except this, a flipped educative format can become a good additional instrument for those students who missed the lessons because educative material will be in approach for them out of the university.

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