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PEDAGOGICAL CONDITIONS FOR IMPLEMENTING DISTANCE LEARNING IN THE TRAINING OF MILITARY SPECIALISTS

ПЕДАГОГІЧНІ УМОВИ ВПРОВАДЖЕННЯ ДИСТАНЦІЙНОЇ ФОРМИ НАВЧАННЯ ПРИ ПІДГОТОВЦІ ВІЙСЬКОВИХ ФАХІВЦІВ

The article examines the peculiarities of organizing distance learning within the training system of military specialists in Ukraine under the conditions of contemporary transformational processes and martial law. It substantiates the relevance of implementing distance technologies as a tool to ensure the continuity of the educational process and adaptation to digitalization standards. The essence of distance learning is defined as a complex pedagogical system based on the utilization of information and communication technologies, which entails interactive cooperation between the participants of the educational process. The advantages and limitations of the distance learning format compared to the traditional one are analyzed, specifically regarding flexibility, safety, and the provision of practical training. It is established that at the current stage, distance learning is not merely a temporary forced measure, but is becoming an integral and strategically important component of the overall training system for military specialists. The study proves that the fragmented implementation of individual online tools does not yield the desired result. Only a comprehensive, systemic approach to the organization of the educational process allows for maintaining the high quality of training for future officers amidst the total digitalization of society and the strict restrictions of the legal regime of martial law. A systemic set of pedagogical conditions, consisting of organizational, technological, and psychological determinants, is identified and substantiated. The effectiveness of the functioning of distance education is directly determined by the balanced and coherent interaction of these three basic dimensions – determinants.

The necessity of organizational and pedagogical adaptation of the educational process, which implies the transformation of the instructor's role and increasing the level of autonomy of higher education applicants, is substantiated. The expediency of blending distance and traditional learning formats to ensure the appropriate level of practical training is proven. Future research prospects are identified, relating to the improvement of methodologies for utilizing digital technologies and preparing instructors to operate in a distance environment.

Key words: distance learning, military education, professional training, military specialists, pedagogical conditions, determinants, digital technologies, blended learning, educational process.

У статті досліджено особливості організації дистанційного навчання у системі підготовки військових фахівців України в умовах сучасних трансформаційних процесів та воєнного стану. Обґрунтовано актуальність впровадження дистанційних технологій як інструменту забезпечення безперервності освітнього процесу та адаптації до стандартів цифровізації. Визначено сутність дистанційного навчання як складної педагогічної системи, що базується на використанні інформаційно-комунікаційних технологій та передбачає інтерактивну взаємодію між учасниками освітнього процесу. Проаналізовано переваги та обмеження дистанційної форми навчання у порівнянні з традиційною, зокрема щодо гнучкості, безпеки та забезпечення практичної підготовки. Встановлено, що дистанційне навчання на сучасному етапі є не просто тимчасовим вимушеним заходом, а стає невід'ємним і стратегічно важливим компонентом загальної системи підготовки військових фахівців. Доведено, що фрагментарне впровадження окремих онлайн-інструментів не дає бажаного результату. Лише загальний системний підхід до організації освітнього процесу дозволяє підтримувати високу якість підготовки майбутніх офіцерів під час тотальної цифровізації суспільства та суворих обмежень правового режиму воєнного стану. Визначено й обґрунтовано системний комплекс педагогічних умов, які складаються з організаційних, технологічних та психологічних детермінант. Ефективність функціонування дистанційної форми освіти безпосередньо визначається збалансованою та чіткою взаємодією цих трьох базових вимірів – детермінант.

Обґрунтовано необхідність організаційно-педагогічної адаптації освітнього процесу, що передбачає трансформацію ролі викладача та підвищення рівня самостійності здобувачів освіти. Доведено доцільність поєднання дистанційної та традиційної форм навчання з метою забезпечення належного рівня практичної підготовки. Визначено перспективи подальших досліджень, пов'язані з удосконаленням методик використання цифрових технологій та підготовкою викладачів до роботи у дистанційному середовищі.

Ключові слова: дистанційне навчання, військова освіта, професійна підготовка, військові фахівці, педагогічні умови, детермінанти, цифрові технології, змішане навчання, освітній процес.

Problem Statement. The current stage of development of military education in Ukraine is characterized by the urgent need to rapidly adapt the educational process to the conditions of martial law, the digitalization of society, and integration into international standards, specifically NATO standards. Under these circumstances, the implementation of distance learning gains particular relevance as a tool to ensure the continuity of professional training for military specialists, as it enables the organization of education regardless of the location of higher education applicants and the level of security risks.

At the same time, the integration of distance technologies into military education is accompanied by a series of challenges. These are related to the limited capacity for practical skill development, an insufficient level of instructor preparedness for operating in a digital environment, and the lack of a systemic approach to the organization of the training process [16].

Consequently, the practical application of distance technologies in military education reveals a number of contradictions. On the one hand, distance learning provides flexibility, accessibility, and safety within the educational process—factors of critical importance under combat conditions. On the other hand, it is not always fully capable of ensuring the development of practical skills, which are pivotal to the professional performance of military personnel.

The absence of a cohesive model for organizing distance learning complicates the management of the educational environment and diminishes the quality of training for future specialists. This necessitates the search for effective pedagogical solutions that would allow for blending the advantages of distance and traditional education, as well as scientifically substantiated approaches to defining the pedagogical conditions that will ensure the efficacy of distance learning in military education.

Thus, the scientific and practical problem lies in the need for a theoretical substantiation and practical definition of a comprehensive set of conditions for the effective organization of distance learning within the military specialist training system, ensuring the development of their professional competencies in the face of contemporary challenges.

Analysis of Recent Research and Publications.

Under the conditions of wartime security challenges and the intensive digitalization of social institutions, distance learning serves as a fundamental mediator of educational continuity, ensuring its high mobility, architectural flexibility, and capacity for rapid adaptation. The challenges of implementing distance technologies, their efficacy, and the specific aspects of organizing the educational process have been actively investigated in recent years in numerous works by domestic and foreign scholars [1–18; 20–22].

Contemporary authors focus on various aspects of implementing distance learning, specifically regarding: the innovative nature of distance education [8, p. 47]; the psychological and pedagogical readiness of the subjects of the educational process for its implementation [4, p. 10; 17], including their insufficient experience in the field of information and computer technologies [11, pp. 99–100]; the problems and development trends of distance learning [13, pp. 170–172; 22, pp. 215–216]; its comparison with the traditional format in terms of advantages and risks [20, pp. 116–118]; primarily concerning the complexity of organising practical training in the absence of face-to-face interaction [19, pp. 60–62; 21, pp. 66–68] and limited access to information and specific types of weapons and military equipment [14, pp. 119–120]; the creation of electronic methodological support [1; 9, pp. 15–18; 10, p. 185; 21, pp. 66–68] and the population of the Moodle platform [5]; as well as the specific features of implementing distance learning in the training of specialists in particular fields [6, pp. 16–18; 18], the transition to a blended learning format [2, pp. 26–28; 3, pp. 60–63], among others.

However, despite the representative nature of the existing body of scientific literature, the specifics of integrating organizational, technological, and psychological determinants into a systemic complex of pedagogical conditions designed to ensure the effectiveness of distance learning within the military educational space remain theoretically without consolidation. The preservation of the invariance and high quality of cadets' practical training under remote access conditions requires particular theoretical, methodological, and applied re-evaluation, which

substantiates the expediency of conducting further scientific inquiry in this direction.

The purpose of the Article. The purpose of the article is to identify a comprehensive set of integrative pedagogical conditions – comprising organizational, technological, and psychological determinants – for the effective organization of distance learning within the military specialist training system, and to substantiate their role during the contemporary period of wartime challenges and educational digitalization.

Presentation of the Main Research Material.

The contemporary stage of development of military education in Ukraine is characterized by profound transformational processes driven by both global digitalization trends and internal challenges associated with martial law. Ensuring the continuity of the educational process, even under conditions threatening the lives and health of higher education applicants and instructors, has prompted the active implementation of the distance learning format within the training of military specialists.

Recent studies confirm that throughout 2022–2025, distance technologies became an integral component of the educational process within Ukrainian military educational institutions, driven by security factors and the necessity of adapting to NATO standards, which entail a high level of digital integration across educational systems [15; 22].

In order to conduct a more comprehensive analysis of the problems arising during the implementation of distance learning within the training of military specialists, it is expedient to systematize the primary difficulties and identify potential ways to overcome them. The generalization of these aspects allows for outlining the key challenges of contemporary educational practice and substantiating the directions for improving the organization of the training process.

Based on the analysis of primary sources [12; 22], the main challenges identified include a deficiency in practical training, low motivation, and technical difficulties. The primary causes of insufficient practice in the distance format are its inherent limitations regarding hands-on skill development, while the active utilisation of VR technologies, computer simulators, and interactive simulations is considered an effective solution. The main cause of low motivation among higher education applicants is the absence of continuous, direct oversight by the instructor; implementing interactive methods, gamification, and robust feedback systems into the educational process can be proposed as ways to enhance engagement. The causes of technical difficulties often stem from

a weak material and technical infrastructure or unstable connectivity among the elements of the educational system, which can be addressed through the development of cloud-oriented LMS platforms and the optimization of digital resources.

Based on the aforementioned points, it can be concluded that each challenge within distance education has a concrete practical solution. The implementation of virtual simulators addresses the deficiency in practical training, interactive formats of work increase engagement in learning, and the development of digital platforms overcomes technical difficulties. This demonstrates that with proper organization, distance learning can achieve maximum effectiveness. The proposed solutions allow for minimizing the negative consequences of the distance learning format and enhancing the quality of the educational process, specifically through the integration of innovative technologies, the improvement of teaching methodologies, and the development of the higher education applicants' motivation.

Under such circumstances, the vector of research focus is directed toward identifying those pedagogical conditions for organizing remote learning that serve as a guarantor of high-quality military personnel training and allow for maintaining an optimal balance between a foundational theoretical framework and applied operational tools.

In contemporary pedagogical science, distance learning is viewed as a complex, multi-level system for organizing the educational process. This system is based on the utilization of information and communication technologies and entails interactive cooperation between the instructor and the higher education applicant, regardless of their geographical location. Within military education, this format of learning acquires a specific significance, as it must accommodate the distinct features of the professional activities of military personnel, which are intrinsically linked to high levels of responsibility, risk, and the necessity for rapid decision-making.

Contemporary studies indicate that the effectiveness of distance learning largely depends on the level of integration of digital technologies into the educational process, as well as on the pedagogical system's capacity to adapt to new operational environments.

At the same time, as researchers note, the distance learning format cannot entirely substitute traditional training methodologies, particularly regarding practical exercises that necessitate physical presence and the development of skills under real or simulated combat conditions [19; 21].

The generalization of the characteristics of traditional and distance learning formats allows for a clearer definition of their respective advantages and limitations. This is of fundamental importance for constructing an effective educational model for the implementation of distance and blended learning.

To compare the formats of education within the training of military specialists based on the literature analysis [20], the following indicators were selected: spatial organization (classroom-based for the traditional format; network-based for the distance format); level of flexibility (limited for the traditional format; high for the distance format); training oversight (direct for the traditional format; mediated for the distance format); the practical component (comprehensive for the traditional format; partially limited for the distance format); and the safety indicator (context-dependent for the traditional format; elevated for the distance format).

Consequently, it can be concluded that while distance learning offers significant advantages in providing flexibility and safety, it requires additional pedagogical efforts to compensate for its limitations, primarily within practical training.

The functioning and practical implementation of remote learning models in the contemporary system of higher military education are based on the indivisible unity of three fundamental pillars: innovative pedagogical methods advanced digital technologies, and continuous psychological support. These elements cannot exist in isolation; collectively, they interact to form a cohesive, integrative ecosystem for the professional training of future personnel.

A particularly critical aspect under contemporary realities is the urgent necessity to ensure the absolute continuity of the didactic process. This continuity must be maintained even under severe constraints, such as the lack of direct access to the conventional material and technical infrastructure of educational institutions, the forced dispersal of the cadet body and faculty, or the direct deployment of higher education applicants and servicemen within combat zones.

In such a specific and extreme context, distance learning begins to perform an essential restorative function. It becomes a key instrument that stabilizes the educational system and uninterruptedly maintains the appropriate level of professional training and retraining for servicemen, practically neutralizing the impact of adverse external circumstances, security threats, and geographical factors. Owing to digital tools, education continues where and when traditional classroom instruction is physically impossible.

At the same time, this transition gives rise to a serious scientific and practical problem that requires immediate resolution. It lies in ensuring the appropriate quality of the practical training of cadets and officers (trainees) specifically. Since practical skills, tactical proficiency, and the ability to operate real equipment and weaponry are critically important in the military sphere for forming the overall professional competency profile of a specialist, purely theoretical online learning cannot be considered self-sufficient. This necessitates the search for new methodological solutions that will allow for effectively combining digital technologies with the execution of real-world actions in practice [3; 21].

The effectiveness of distance learning is determined by the active implementation of a comprehensive set of pedagogical conditions, which consist of interconnected and mutually reinforcing organizational, technological, and psychological determinants (prerequisites and means). The organizational and pedagogical determinants encompass the organization of the training process, teaching and upbringing methods and methodologies, and the professional development of instructors. The technological determinants entail the implementation of a Learning Management System (LMS) platform – primarily its most widely utilized version for educational institutions, the Moodle platform – modern communication tools, digital resources, and innovative interactive learning technologies. The psychological and pedagogical determinants encompass motivational aspects, the development of self-discipline, and stress resilience.

The systemic nature of the interaction among these determinants indicates that none of them can be examined in isolation, as only their integration ensures the achievement of a high level of training. An analysis of contemporary scientific approaches suggests that a key condition for the effectiveness of distance learning is the integration of a comprehensive set of pedagogical conditions into the overall system of professional training for military specialists.

The organizational and pedagogical adaptation of the educational process, which entails redefining the roles of both the instructor and the higher education applicant, is of paramount importance. Within a distance learning environment, the instructor acts as a facilitator of learning activities, stimulating cognitive engagement and providing constructive feedback. In turn, the higher education applicant must demonstrate a high level of autonomy, responsibility, and capacity for self-regulation.

The technological aspect of pedagogical conditions entails the utilization of modern digital platforms that ensure the interactivity of the learning process. A particularly prominent role is played by learning management systems, which allow for structuring training materials, conducting knowledge assessment, and facilitating communication among the participants of the educational process [7; 17].

A synthesis of the primary technological tools of distance learning in military education indicates that the functional purpose of Learning Management System (LMS) platforms, specifically the Moodle platform, is the organization of the training process, which yields a systemic effect; utilizing video conferencing during instruction provides an interactive effect; the functional purpose of incorporating simulation technologies (VR/AR) – virtual reality and augmented reality – is the modeling of scenarios with the educational effect of developing and honing practical skills in higher education applicants; and the purpose of employing electronic resources is the provision of open access to materials, which fosters an effect of self-education and self-development for future specialists. This confirms that the technological component is an indispensable part of the pedagogical conditions; however, its efficacy inherently depends on methodologically substantiated implementation.

The systematization of the obtained results indicates that the distance learning format is an integral element of the contemporary training system for military specialists, the effectiveness of which is determined by a systemic set of pedagogical conditions consisting of organizational, technological, and psychological determinants (means and prerequisites). Under the contemporary period of martial law, distance learning acquires particular significance, as it ensures the continuity of the educational process and enhances its adaptability to external challenges.

At the same time, the research findings indicate the necessity of combining distance and traditional learning, transitioning toward a blended (hybrid) learning approach. This shift allows for compensating for the limitations inherent in each modality, thereby ensuring an appropriate level of professional training.

Conclusions. As a result of the study, a comprehensive analysis was conducted, establishing that distance learning at the contemporary stage is not merely a temporary, forced measure, but is becoming an integral and strategically vital component of the overall training system for military specialists. It has been demonstrated that the fragmented implementation of individual online tools does not yield the desired outcomes. Only a holistic, systemic approach to organizing the educational process allows for maintaining a high quality of training for future officers amidst the total digitalization of society and the severe constraints imposed by the legal regime of martial law. A systemic complex of pedagogical conditions – comprising organizational, technological, and psychological determinants – has been identified and substantiated. The functional effectiveness of the distance learning format is directly determined by the balanced and well-defined interaction of these three core dimensions (determinants).

An analysis of the practical application of distance learning allowed for clearly delineating its key advantages (high organizational flexibility, continuous availability of training materials regardless of the cadets' location, and a significant increase in the physical safety of all participants in the educational process under wartime conditions). However, it also revealed distinct limitations, proving that the complete substitution of traditional classroom instruction with distance learning is impossible—particularly in military training, which is critically dependent on practical, tactical, and hands-on operational exercises. In light of this, the expediency of transitioning toward blended (hybrid) learning has been substantiated and recognized as optimal, as it allows for harmoniously combining the finest instruments of online platforms with the traditional development of practical skills during in-person sessions in classrooms or at training grounds.

Prospects for further research are directed toward the development of innovative methodologies for utilizing digital technologies, as well as the enhancement of instructor training systems for operating within distance and blended learning environments.

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