

Volovnyk Valentina Yevgenivna,

ORCID ID: 0000-0002-6467-937X

Candidate of Pedagogical Sciences,

Professor at the Department of Engineering Mechanics

Odesa Military academy

Shlenskovuy Maksym Alexandrovich,

Higher Education Student

Odesa Military Academy

ORGANIZATIONAL AND PEDAGOGICAL CONDITIONS FOR THE IMPLEMENTATION OF INNOVATIVE TEACHING METHODS IN THE PROFESSIONAL TRAINING OF FUTURE LOGISTICS OFFICERS

ОРГАНІЗАЦІЙНО-ПЕДАГОГІЧНІ УМОВИ ВПРОВАДЖЕННЯ ІННОВАЦІЙНИХ МЕТОДІВ НАВЧАННЯ У ПРОФЕСІЙНУ ПІДГОТОВКУ МАЙБУТНІХ ОФІЦЕРІВ ЛОГІСТИКИ

The article is devoted to one of the current problems of high-quality training of future logistics officers of the Armed Forces of Ukraine – the definition and justification of organizational and pedagogical conditions for the implementation of innovative teaching methods in the professional training of future logistics officers during their studies at a higher military educational institution.

Based on the analysis of literary sources and our own experience, a set of organizational and pedagogical conditions was determined, which were the basis of the author's methodology for introducing innovative teaching methods into the professional training of future logistics officers in military universities, namely: organization of professional training of future logistics officers based on the principles, conceptual provisions and using methods of pedagogical (educational) logistics; conducting an analysis of innovative teaching methods that are appropriate for implementation in the professional training of future logistics officers in the current period of martial law in our country; activating the extracurricular work of future logistics officers and organizing it using methods such as tutoring, mentoring, coaching, in particular in cadet scientific circles; organization of events for teachers to exchange experience in implementing innovative teaching methods in the professional training of future logistics officers.

Innovative training methods that are appropriate for implementation in the professional training of future logistics officers during their studies at military universities in the current period of martial law in our country are analyzed. The principles and conceptual provisions of pedagogical (educational) logistics, as well as logistics management systems ("those that push out, push" or "push systems" and "those that pull" or "pull systems") and innovative teaching methods corresponding to these systems are highlighted. New methods of activating extracurricular work of cadets of higher educational institutions are proposed.

Key words: organizational and pedagogical conditions, innovative teaching methods, future logistics officers; principles of pedagogical (educational) logistics, logistics management systems, extracurricular work, higher military educational institution.

Стаття присвячена одній із актуальних проблем якісної підготовки майбутніх офіцерів логістики Збройних сил України – визначенню й обґрунтуванню організаційно-педагогічних умов впровадження інноваційних методів навчання у професійну підготовку майбутніх офіцерів логістики під час навчання у вищому військовому навчальному закладі (ВВНЗ).

За аналізом літературних джерел і за власним досвідом було визначено комплекс організаційно-педагогічних умов, що були покладені в основу авторської методики впровадження інноваційних методів навчання у професійну підготовку майбутніх офіцерів логістики у ВВНЗ, а саме: організація професійної підготовки майбутніх офіцерів логістики на засадах принципів, концептуальних положень і з використанням методів педагогічної (освітньої) логістики; проведення аналізу інноваційних методів навчання, доцільних для впровадження у професійну підготовку майбутніх офіцерів логістики у сучасний період воєнного стану нашої країни; активізація поза аудиторної роботи майбутніх офіцерів логістики та її організація за такими методами, як тьюторство, менторінг, коучинг, зокрема у курсантських наукових гуртках; організація заходів для викладачів щодо обміну досвідом впровадження інноваційних методів навчання у професійну підготовку майбутніх офіцерів логістики.

Проаналізовано інноваційні методи навчання, доцільні для впровадження у професійну підготовку майбутніх офіцерів логістики під час навчання у ВВНЗ у сучасний період воєнного стану нашої країни. Виокремлено принципи і концептуальні положення педагогічної (освітньої) логістики, а також системи логістичного

управління («ті, що виштовхують, штовхають» або «push – системи» і «ті, що тягнуть» або «pull – системи») та відповідні цим системам інноваційні методи навчання. Запропоновано нові методи активізації поза аудиторної роботи курсантів ВВНЗ

Ключові слова: організаційно-педагогічні умови, інноваційні методи навчання, майбутні офіцери логістики; принципи педагогічної (освітньої) логістики, системи логістичного управління, поза аудиторна робота, вищий військовий навчальний заклад.

Statement of the problem. Research into the problem of implementing innovative training methods to ensure high-quality professional training of future logistics officers in higher military educational institutions is becoming increasingly relevant in the current period of martial law in our country. The timeliness of this task is confirmed by the state's requests for the quality of training of military specialists, defined in the Concept of Transformation of the Military Education System, which, among other priority tasks that must be implemented in the period until 2032, states: "accelerating the process of implementing modern information, information and communication technologies and distance learning technologies" [18].

Military logistics, in a broad sense, is a system of supplying the army with everything necessary for its normal functioning. This requires logistics officers, especially in the unpredictable conditions of hybrid warfare, the ability to solve complex, multi-component, non-standard tasks of organizing supply and quickly find new, previously unused or even unknown, i. e. innovative solutions. The formation and development of such skills, knowledge and abilities during training at a higher educational institution necessitates the introduction of innovative teaching methods into the professional training of future logistics officers.

The book "Education in Ukraine under Martial Law" also emphasizes that innovations became particularly relevant with the beginning of the large-scale war unleashed by the Russian Federation on the territory of Ukraine, and notes: "The spread of innovative technologies in the educational sector has become an objective regularity, conditioned by the new philosophy of education. Innovations should be considered as effective and productive innovations in the content, methods, means and forms of learning and personality education..." [19, p.7].

Analysis of recent research and publications. The issue of implementing innovative teaching methods to ensure high-quality professional training of future specialists in various specialties has been studied in recent years by many scientists, in particular: for specialists of missile forces and artillery (A. Derevyanchuk, A. Nalyvayko, D. Chopa [16], etc.); for specialists of engineering and military specialties (V. Volovnyk, B. Lebedev, O. Masliy [14],

etc.). Educators proposed various teaching methods, such as: developmental (L. Zankov, D. Elkonin, V. Davydov); self-development (G. Selevko), programmed (V. Bepalko, B. Skinner [8]), with the use of supporting note-taking (V. Shatalov); concentrated (G. Ibragimov), immersion (M. Shchetinin), personality-oriented (Sh. Amonashvili), competency-based (J. Raven, V. Kuter, O. Bogdanyuk) and others.

The works of many authors (V. Bykov, M. Zhaldak, V. Kukharenko, O. Pometun, S. Rakov, T. Remekh, O. Spivakovsky, O. Spirin, S. Semerikov, Yu. Tryus, etc.) are devoted to the introduction of innovative information and communication pedagogical technologies into the educational process of higher educational institutions, in particular military institutions (O. Babenko, I. Bloshchynsky, V. Veretilnyk, A. Galimova, Y. Dem'anyuk, A. Radvansky, O. Torichny, V. Yagupov, etc.).

However, the organizational and pedagogical conditions for implementing innovative teaching methods in the professional training of future logistics officers in higher military educational institutions in order to increase the effectiveness of training during martial law in our country have not yet been separately studied.

The purpose of the article. To determine and theoretically substantiate the organizational and pedagogical conditions for the implementation of innovative teaching methods in the professional training of future logistics officers, the implementation of which in the educational process of the Higher Military Educational Institution should ensure an increase in its effectiveness during martial law in our country and in the post-war period.

Presentation of the main material. The organizational and managerial component of professional training of logistics officers is certainly one of the most important, since the very concept of logistics, according to the analysis of many literary sources [2; 4; 15; 23], means a set of processes for planning, organizing and managing the movement of flows (material, informational and related financial, service flows, etc.) from their point of origin to their final destination. Therefore, this study emphasizes the organizational and pedagogical conditions for the implementation of innovative training methods in the professional training of future logistics officers.

We consider organizational and pedagogical conditions, taking into account the purpose of the study, as “interrelated circumstances and/ or methods of organizing and long-term support of the pedagogical process, which form a certain system, and the connections between them are manifested in the interdependence and mutual influence of pedagogical phenomena that arise as a result of the introduction of these conditions and determine the increase in the effectiveness of the process” [21, p. 90].

The presented definition emphasizes the systematicity, interdependence, and mutual influence of organizational and pedagogical conditions, the comprehensive implementation of which should provide a synergistic effect and, thus, ensure an increase in their joint result.

Based on the analysis of literary sources and our own experience, we have identified a set of organizational and pedagogical conditions that have become the basic basis for the methodology for implementing innovative teaching methods in the professional training of future logistics officers in higher educational institutions, namely:

- organization of professional training of future logistics officers based on the principles, conceptual provisions and using methods of pedagogical (educational) logistics;
- conducting an analysis of innovative training methods that are appropriate for implementation in the professional training of future logistics officers during their studies at military universities during the current period of martial law in our country;
- activation of extracurricular work of future logistics officers and its organization using methods such as tutoring, mentoring, coaching, in particular in cadet scientific circles;
- organizing events for teachers to exchange experience in implementing innovative teaching methods in the professional training of future logistics officers.

The organization of professional training of future logistics officers on the principles of pedagogical (educational) logistics is a logical and expedient condition that requires some explanation.

According to the scientists, logistics, in a broad sense, at the current stage of world development acts as a new strategic direction for ensuring the effectiveness of organizational and management processes and systems and a practical tool for their improvement [2, c. 12; 15, c. 9; 23, c. 14].

Pedagogical (educational) logistics is considered by scientists as a subdiscipline of logistics that deals with the organization and management of pedagogical

flows, that is, the processes of learning, teaching, and educational activities, which can also be attributed to a certain extent to information and corresponding material flows [20].

According to the terminology of educational logistics, the pedagogical field (in this case, the educational process of a higher educational institution) consists of flows: knowledge, training, psychological and physical health, information flows, and equipment flows, which provide for the provision of the material and technical base of a higher educational institution with modern weapons and military equipment.

The principles and conceptual provisions of pedagogical (educational) logistics, which, in our opinion, are appropriate to become a methodological basis for optimizing the management of educational flows when implementing innovative teaching methods in the professional training of future logistics officers, can be attributed, according to the analysis of primary sources [4, pp. 14–16; 11, pp. 50–51; 20], to the following principles: systematicity, functionality, integration and integral goal-setting, “just in time” (JIT), “JIT-reliability”, data standardization, focus on the final result, interaction of all components of the pedagogical system, coordination of actions of specialists from different departments of higher educational institutions, variability of strategies and methods for implementing innovative teaching methods.

For example, the use of the principles of “just-in-time” (JIT) and “JIT-reliability”, which imply the ability of the logistics system to self-organize, is implemented in the pedagogical system as a way to increase the reliability of its functioning, which is achieved by backing up information, that is, ensuring the availability of redundant information (reserves) that should be included in the content and methodology of implementing innovative teaching methods.

The principle of variability of strategies, methods and techniques is based on two different management systems developed by foreign specialists: “those that push out” or “push systems” and “those that pull” or “pull systems” [2; 4; 23].

In push systems, flows are pushed to recipients strictly according to the order (command) coming from the control center. In pull systems, the control center does not set current tasks and practically does not interfere in the information and material flow exchange, which is carried out at the request of recipients, as needed, which is determined by the managed recipients themselves. The main function of the control center in pull systems is to set a task for the final link in the logistics chain [4, pp. 16–19; 23,

pp. 68–70]. So, push systems are strictly centralized systems, while pull systems are, to some extent, decentralized.

The use of these systems of organization and management when implementing innovative teaching methods in the professional training of future logistics officers in military universities provides two different models of training: the push model, which in some parameters is somewhat close to the passive subject-object, according to O. Pometun [22], models of training, but fundamentally differs from them in the presence of constant feedback, and the pull model, closer to active and interactive subject-subject models.

When implementing innovative teaching methods using push systems, the teacher acts as an organizer and an intermediate (between the management of the educational institution and the cadets) center for managing the educational process, a source of knowledge that transfers (pushes out) a large number of sufficient cadets in a short time. This involves preliminary structuring of information, increasing the visualization of classes, showing various drawings, structural and logical schemes, diagrams, etc., using slides, videos, short films, using reference note-taking methods, planned errors (which cadets must find), test control to cover a large number of cadets in a short time.

When implementing innovative learning methods using pull systems, the teacher acts primarily as a learning coordinator who organizes it only to the extent and in relation to the amount of information requested by the cadets (for example, on a previously announced topic of the lesson, the cadets prepare questions of interest to them for the teacher). This involves increasing the differentiation and individualization of learning, the use of active and interactive, personally oriented and self-developing learning methods, in particular, case study methods, analysis of specific situations, conducting disputes, discussions, brainstorming, etc.

Based on the above, we can conclude that innovative teaching methods using push systems are better implemented in lecture classes, and using pull systems- in seminar and laboratory-practical classes.

An analysis of innovative teaching methods has shown that in the current period of martial law in our country, the most appropriate methods for implementing in the professional training of future logistics officers are those that can be used in distance and mixed forms of organizing training, taking into account their compliance with “push systems” and “pull systems” of organizing and managing the educational process. It should be noted that the

mixed format involves a combination of elements of traditional and distance forms.

Scientists identify the following as the main disadvantages of distance learning: lack of face-to-face communication between cadets and teachers, insufficient experience with information and computer technologies, lack of the necessary number of training samples of weapons and military equipment, insufficient control over the assimilation of the knowledge received by cadets; “theorization” of learning, reduction of the educational process to mechanistic techniques and methods; inability to form a complete idea of the content of the educational subject and some other [17, p. 100; 24].

The introduction of innovative methods in distance learning allows you to eliminate or reduce the impact of these shortcomings on the process of training future logistics officers.

Thus, the lack of the required number of training samples of weapons and military equipment (WME) can be eliminated by developing and implementing 3D models of basic WME samples into the training process, and using virtual simulators to consolidate practical skills. Virtual simulators created through computer 3D modeling of situations, video and audio recordings, electronic libraries, educational videos expand the opportunities for cadets to use large information resources, modern databases, independently obtain the necessary knowledge, ensure participation in forums, video and teleconferences, etc.

Control over the assimilation of knowledge by cadets can be strengthened by perfecting the development of a web resource such as test task packages, preferably with automated verification of results.

The “theorization” of training can be reduced through the use of such innovative methods as: virtual laboratory work and practical tasks that involve modeling specific situations based on data on real military circumstances, with methodological instructions for their organization and conduct; virtual simulators with methodological recommendations for their use.

The following types of situations are offered for modeling: a problem situation, which contains a description of a real military situation, a solution to which must be found or concluded that there is none; situation-assessment, which describes a military situation, a solution to which has already been found, but it is necessary to critically analyze the decision made; situation-exercise, which contains a description of a military situation, a solution to which must be found by referring to various information resources, databases, etc.

The formation of a complete understanding of the content of the subject in distance learning conditions can be achieved by the teacher developing a complete reference outline, a complete and detailed presentation of the academic discipline and transmitting them to each cadet before the start of classes in electronic form. The teacher explains the content of the educational material in subsequent classes, sometimes in the form of video conferences.

In classes, it is advisable to introduce such innovative methods as: problem-based learning, when the teacher creates problematic military situations during the teaching of the educational material and involves the cadets in solving them; planned errors (provocation class), when the teacher notes that there are errors in the educational material that the students must find; discussion training, which involves discussion, exchange of knowledge, judgments, ideas regarding some controversial issue, even organizing a brainstorming session; using the "case study" method, when cadets, having studied in advance an information package of educational material (case), where there is no unambiguous answer to the question posed, analyze it, conduct a collective search for new ideas and determine ways to implement them.

The teacher's choice of a specific innovative method depends on the type of academic discipline and the educational goals that the teacher sets for each individual lesson. In this case, it is advisable to use elements of B. Bloom's taxonomy [3; 9], according to which learning objectives in the cognitive sphere can be expressed through the following sequential stages of learning: knowledge, understanding, application, analysis, synthesis and evaluation.

The condition for activating the extracurricular work of future logistics officers involves its organization using such innovative methods as tutoring, mentoring, and coaching, in particular in cadet scientific circles..

A tutor is a teacher or other leader who conducts individual lessons with 1-3 cadets who are assigned to him. It is most advisable to use tutoring during distance learning.

Mentoring is considered an effective tool for developing the professionalism of cadets, a new version of mentoring, in which a mentor (an experienced teacher or other leader) transfers his or her experience and knowledge to cadets, answers questions, but does not instruct or give direct instructions. However, if a supervisor, who is usually a teacher at an educational institution, is assigned to a group of first-year cadets, then mentoring is advisable to use in senior years, when mentors can be not only teachers, but also other

experienced individuals, in particular representatives of stakeholders (customers), since the role of a mentor is to be the first guide of a future officer into the professional sphere.

Coaching, unlike mentoring, acts as a training method, training in which a coach (an experienced specialist, trainer) helps cadets achieve certain goals in the future profession of a military logistician or some personal goals; moreover, each cadet must find a way to achieve the goals independently.

These methods of extracurricular work have been studied by many foreign experts. Thus, according to E. Newell, coaching is aimed at improving the work of the teacher, and therefore, at improving the quality of training of future specialists, developing the abilities for self-study and self-analysis [7]. Paul Bambrick-Santoyo proved that coaching contributes to the isolation of step-by-step coaching actions [1]. According to J. Knight, coaching involves self-determination, responsibility and empowerment of teachers and their autonomy, and believes that teacher autonomy is central to the success of the coach [6]. Rob Coe generally considers coaching as a new learning technology, emphasizes its practical, problem-solving nature, identifies four components: reflection, practice, modeling, and feedback, and in the article asks why we don't do coaching, although, in his opinion, everyone else does [5]. A. Toit and S. Reissner conducted an experiment and found that coaching promotes group cohesion and motivates them to achieve academic success [10, p. 189].

According to domestic scientists, it is these methods of extracurricular work that are advisable to use in military universities during wartime, when rocket attacks and electricity shortages interfere with the process of training and development of professionalism of future officers [12, p. 8].

The introduction of such innovative methods in cadet science circles during wartime, when the work of the circles is adapted to distance learning formats (online platforms Zoom, Google Meet, and others), according to the researchers, will allow future officers to perform situational cases related to their military-professional activities, even during forced dispersal, improve professionally important skills and professional competencies, develop leadership qualities and teamwork skills, critical thinking, the ability to speak publicly, prepare multimedia presentations, participate in scientific conferences and seminars, form a focus on achieving specific results in the course of independent work [13, pp. 132, 136].

The condition for organizing and conducting events for teachers to exchange experience in using

innovative teaching methods in the professional training of future logistics officers is a logical conclusion to a certain set of organizational and pedagogical conditions for the implementation of these methods, which constitutes the basic basis of the author's methodology for implementing innovative teaching methods in the professional training of future logistics officers during their studies at the Higher Military Educational Institution.

The implementation of this condition involves holding departmental and interdepartmental seminars, interuniversity scientific-practical and scientific-methodical conferences, and in the future conferences with international participation within the Higher Educational Institution.

Conclusions and prospects for further research.

A set of organizational and pedagogical conditions has been identified and substantiated, which has

become the basic basis for the methodology for introducing innovative teaching methods into the professional training of future logistics officers in military universities. The principles, conceptual provisions and management systems of pedagogical (educational) logistics are presented. Innovative teaching methods are analyzed, which are appropriate for implementation in the professional training of future logistics officers during their studies at military universities in the current period of martial law in our country. New methods of activating extracurricular work of military universities cadets are proposed.

The authors see further research in the development and implementation of innovative training methods, in particular, the use of virtual simulators, in the training of future officers of other specialties for the Armed Forces of Ukraine during military operations and in the post-war period.

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