DEVELOPMENT OF DISTANCE LEARNING SYSTEM FOR LAW-ENFORCEMENT HIGHER EDUCATION INSTITUTIONS: POST-PANDEMIC CHALLENGES AND RESPONSES

INTRODUCTION
The key to the effective organization of border protection and performing of certain functions by the border guard agency is a modern and effective system of professional training of personnel, although the situation in the world, which has developed recently and led to global restrictions due to the significant strengthening of anti-epidemic measures and the spread of acute respiratory disease COVID-19 caused by the SARS-CoV-2 coronavirus, required urgent reformattting of the system of professional training of personnel of the Ukrainian border guard agency. Today, the system of professional training in the State border guard service of Ukraine (SBGU) ensures fulfillment of the tasks assigned to it and requires only some improvement, without changing its fundamental principles. Today’s realities in education and in the epidemiological situation have created prerequisites for finding simple and effective methods of organizing distance learning. Nevertheless, the active stage of transition to distance learning revealed a number of problematic aspects. In particular, this is due to a decrease in the quality of education, with the inability to provide an effective, full-fledged student-centered educational process in accordance with the requirements of the provisions of the Bologna and Copenhagen declarations. Therefore, the need to study the European and international experience of training border guards, adapt national standards of training in the State Border Guard Service to the requirements of the educational space becomes particularly important. So the purpose of the article is to highlight the state and prospects of development of the distance learning system for personnel of the State Border Service of Ukraine in the context of a pandemic, based on the experience of EU countries.

LITERATURE REVIEW
A significant number of scientists are engaged in the study of the theory and practice of professional training of border guards. So, Didenko et al. (2020) researched the professional training of border protection specialists in foreign countries. Balendr et al. (2019) devoted his research to the problems of developing training courses based on the Virtual Aula web platform. Zhang J. and Zhang L. (2015) proposed to apply approaches to the organization of the personal learning trajectory in the development of components of electronic textbooks. Gurevich and Kademia (2006) defined general approaches to ICT in the educational process. Dioriditsа, Toroptsov and Ivashko (2012) substantiated the theoretical foundations of using
innovative ICTs as a means of achieving high quality education, taking into account the provisions of the Bologna Process in the information society. Balendr et al. (2021) highlighted the features of implementing an electronic progress log for cadets of the National Academy of the State Border Guard Service of Ukraine (NASBGSU) in their research. Spridžāns and Pavlovičs (2020) revealed the perspectives on developing e-learning at the state border guard college of the Republic of Latvia. Soroka et al. (2019) noted the use of ICT opportunities for more effective planning of working hours of scientific and pedagogical staff, increasing the objectivity of assessment, timely identification of educational problems, forecasting and adjustment of further educational activities. However, our intelligence has shown that so far, a thorough analysis of the prospects for the development of distance learning of personnel of the State Border Service of Ukraine in the context of post-covid challenges for the system of professional training of Ukrainian law enforcement officers has practically not been carried out. So, the purpose of the article is to summarize the experience of developing the distance learning system for personnel of the State Border Guard Service of Ukraine in the context of post-pandemic challenges and threats.

RESEARCH RESULTS

General characteristics of the distance form of the professional training and further training of the personnel of the border guard agency.

Today, the State Border Guard Service has created and actively utilises in its operational and service activity an integrated information and telecommunications system of the border guard agency “GART”, which is a set of information systems and subsystems. This system is a component of the national information field, in which circulates information that is used by all agencies ensuring the national security of the state. Also, the Ukrainian border guard agency uses and is continuously modernizing more than 20 new information and telecommunications systems. In some of these systems geographic information systems are used to solve problems of providing geographical information. Also, a number of subsystems “GART” use access to information resources via Web technologies (RACHOK et al., 2017).

Accordingly, the SBGSU actively use distance learning opportunities, which has proven its importance and relevance at all levels of the system of professional training and advanced training of the SBGSU personnel. The strategic goal of distance learning is to provide an opportunity for military personnel to improve their professional competence at the border guard unit through the use of the departmental Intranet network and telecommunications technologies. Distance learning technology also contributes to expanding access to professional education for state border service personnel who, due to official employment or other circumstances, don’t have possibility to study at the departmental educational institutions. Organization of the system of distance form of professional training and advanced training of the Border Guard Service personnel consists of:

- Main coordination center (Department of professional training and organization of educational activities of the Department of personnel of the State Border Guard Service);
- Main distance learning center (Center for distance technologies of advanced training of the Institute of advanced training of the National Academy of the State border guard service of Ukraine named after B. Khmelnytsky);
- Regional centers (training centers of the State Border Service);
- Basic training centers and offices (personnel training departments of regional departments of border protection bodies);
- Bank of distance courses (distance learning server of the Main Center for distance learning).

The functioning of the Main center of the distance learning is under supervision of the Center for distance technologies of advanced training of the Institute of advanced training of the National Academy, which consists of five members, and operates since 2011. To ensure functioning of the distance form of professional training, a server platform was located and
configured (geographically located in Khmelnytsky at the National Academy of SBGSU.) There was also developed a web-based distance learning portal with the necessary educational, information and reference resources, as well as a Moodle course management system. Uninterrupted round-the-clock operation of this resource was ensured (Fig. 1).

Fig. 1. Home page of the Center for distance learning and advanced training of the NASBGSU

![Home page of the Center for distance learning and advanced training of the NASBGSU](image)

Source: Search data.

The materials for training courses are prepared and consultations are delivered by the required number of teachers-moderators. (with whom instructor-methodical training are continuously conducted regarding organization of teaching, preparation of educational materials and creation of an information bank of distance learning courses.)

Within the Center for distance learning and advanced training the business games, command and staff exercises are organized with students of the Faculty of Management Personnel Training of the National Academy of the State Border Guard Service using the distance learning platform to ensure joint work of students who are studying separately (to comply with the conditions of quarantine measures). For effective work during command and staff exercises, the teaching staff widely uses the Big Blue Button webinar organization component, which allows to create comfortable conditions for officers to communicate using video and audio communication. The preparation and conduct of command and staff exercises allows to develop promising approaches to organization of the educational process in correspondence education, accumulate and develop experience in using the latest information technologies in the process of training students and cadets of the Academy.

In foreign language classes, NASBGSU teachers use the Big Blue Button resource to demonstrate presentations and videos on the topic, the use of interactive teaching methods: “Synthesis of thoughts”, “Brainstorming”, “Case method”, which promotes interactive interpersonal communication between cadets and students in a foreign language, allows to interest cadets and students, apply modern forms of work and audio and video materials in the Big Blue Button resource. Cadets perform grammar exercises on the topic, translate texts, express their own thoughts, and discuss problematic issues.
Software and hardware support for distance learning of the State Border Guard Service of Ukraine personnel

To ensure the educational process, the teaching staff of the Border Guard Service Academy uses free software, namely the Moodle course management system. The distance learning resource is deployed on two servers with Linux-based virtualization, which is free of charge. The software required for studying educational material (web pages, text, audio - video format) is also actively used: Web browser (selected depending on the operating system); PDF documents viewer. The SBGSU uses the Moodle course management system to organize the educational process, but only its basic functionality, which does not fully meet the service requirements. Therefore, there has been developed additional functionality that interacts with the Moodle course management system, namely:

- information page;
- registration form;
- monitoring students' enrollment in relevant courses;
- working with account data;
- role policy;
- configuring course parameters;
- electronic rating log;
- archiving course results (archive search);
- feedback (survey of course participants);
- quality control of training of subordinate personnel;
- distribution of subordinate personnel;
- electronic library.

The course learning process itself consists of the following stages:

- choosing the course where cadets plan to study;
- registration for the selected course of study;
- installing (if necessary) software;
- familiarization with the organization of the educational process and the schedule of the educational process;
- independent study of educational material;
- self-monitoring;
- advisory work (if necessary);
- preparation of control tests to check the level of quality of knowledge received.

The available courses provide for practical classes and final knowledge control on the basis of educational institutions of the state border guard service. Only cadets who have fulfilled the requirements of the educational process schedule are allowed to participate in this stage.

In order to provide feedback and study the results of the quality of training materials development, web-based questionnaires for course graduates were processed. A program for automatic processing of the results of graduate surveys was elaborated. According to the guidelines of the Administration of the SBGSU Order, 26,373 people were trained in 38 courses (about 70 iterations) of advanced training of the SBGSU personnel in 2020, including 3,867 people in the professional training system and 22,506 military personnel in advanced training courses. In total, during 2012-2020, about 48,000 people were trained at the Main distance learning center. In 2022 it is planned to hold 30 courses for officers and 3 courses for junior specialists.
In total, it is planned to involve about 7,100 of the SBGSU personnel in distance learning courses for advanced training of personnel (professional training). In compliance with the requirements of the National Agency for the prevention of corruption, a training course for the SBGS personnel Conflict of interest: you need to know! has been held since 2018 and hence 20,931 border guards have successfully completed their exercises. As of February 18, 2021 about 4,000 people were studying at the distance learning courses at the Main distance learning center of the State Border Guard Service of Ukraine (Fig. 2).

**Fig. 2. Number of persons who have completed distance learning courses at the Main center of distance learning of the State Border Guard Service of Ukraine**

![Graph showing the number of persons who have completed distance learning courses at the Main center of distance learning of the State Border Guard Service of Ukraine]

*Source: Search data.*

In total, during 2012-2021 about 48,000 people were trained at the Main distance learning center. Also, the National Academy of the State Border Guard Service of Ukraine, training centers of the State Border Service of Ukraine held measures to organize the educational process in accordance with European standards. A unified system of information support for personnel using the system of departmental computer network information resources has been created (Fig. 3).

**Figure 3. Web-based distance learning platform of NASBGSU**

![Web-based distance learning platform of NASBGSU]

*Source: Search data.*

Teachers and cadets of the National Academy of the SBGSU have access to the joint web platform of distance learning Agency FRONTEX based on the web platform Virtual Aula, which
is combined with the network of European border guard partnership academies, the network of national coordinators and a consortium of higher educational institutions within the Master’s program in the field of strategic border management and which is a comprehensive solution for border guard agencies of EU countries based on the bimodal model and the consortium model. The purpose of creating such a platform is to harmonize the system of training border guards of EU countries, spread the best practices of individual countries, which should serve as a communication center for specialists of various grades, as well as provide an opportunity for personnel of various departments of EU countries and third countries to participate in trainings, distance learning courses, webinars developed by advanced specialists of border agencies of EU countries (BALENDR et al., 2021).

Teachers of the NASBGSU actively utilize a “Communicative English language course for professional needs of border guards” developed by the EU border guard agencies under the auspices of Frontex agency based on the Virtual Aula web platform for distance learning. The experience gained provides an opportunity for specialists in the field of border security training and education to develop e-learning courses and to resolve the contradiction between the need to introduce innovative forms, methods, ICTs that are used in the training of European border guard agencies and the unsatisfactory state of their implementation in educational institutions of the state border guard service of Ukraine.

Regarding the forms and methods of distance learning in NASBGSU in modern conditions, the most frequently are used the following:

- web cast, which is a technology that provides a one-way response, without interactivity and synchronous communication between the teacher and cadets. A web cast is organized by a teacher or cadet and can be hosted on a web platform;
- blog is a technology for keeping your own diary on the Internet. It should be considered as a personal space that can contribute to ensuring joint activities of cadets;
- breakout rooms - creating rooms in a virtual space where cadets can work in groups. These rooms make it possible to conduct collective work with the necessary educational and methodical material, video and multimedia content. Cadets in such a room see and hear each other, but do not see the participants of other groups;
- collective work with applications – ability to show cadets the results of a separate electronic training complex or application on a smartphone screen;
- interactive questionnaires - services that allow to quickly interview cadets on a specific topic;
- web tours - organization of a joint search for information on the Internet, which looks like “travelling” on websites (MORZE, IGNATENKO, 2010).

Study of the effectiveness of distance learning system at the National Academy of the SBGSU

In order to determine the degree of satisfaction with the organization of distance learning in NASBGSU, the evaluation based on the online feedback from the cadets of the Academy was conducted, for which a group of NASBGSU cadets was formed in the amount of 84 cadets. The survey results point to key facts that should be taken into account when developing and implementing e-courses, both from the point of view of teachers and from the point of view of the Academy’s management.

The selection of cadets to participate in the survey was determined by the requirements of uniformity of cadets. Evaluation was built on the basis of Google Forms, the questionnaire consisted of direct closed questions that were subjected to statistical processing. The questions were formulated in such a way as to identify the level of satisfaction with distance learning opportunities.

In general, 92% of respondents agreed that they managed to improve their professional skills and master new professional competencies through participation in distance learning courses; 74% noted that the great advantage of this form of training was the ability to assimilate
educational material at an individual pace, without adapting to the rest of the group; 48% of respondents considered the lack of personal contact with the teacher to be the main disadvantage; 56% stressed the importance of conducting distance learning courses while performing professional duties in border protection units without the need to come to educational institutions of the State Border Guard Service; 72% noted that in order to motivate staff to pass professional-oriented training courses, it is necessary to introduce a system of incentives, diplomas and certificates of successful completion of training, which should be recognized at the national or European level (certificates of the Frontex agency, an international certificate of foreign language proficiency, etc.).

The results of the survey allowed to conclude that the distance form of training of future Border Guard officers in the conditions of quarantine restrictions from auxiliary becomes one of the main forms of training, although a number of drawbacks were also identified. So, the analysis of the educational process showed that: teachers of NASBGSU pay insufficient attention to the effective use of ICT and distance learning tools in the educational process of a higher military educational institution; the scientific and methodological level of teachers regarding the use of educational ICTs in the process of professional training of future border guard officers is insufficient; also future border guard officers have a low level of skills on the use of ICT in professional activities in the specialty, which generally negatively affects their professional training and formation of their professional competence. It has been revealed that teachers of NASBGSU are quite motivated to use ICT, but are not sufficiently aware of the capabilities of modern computer technologies, educational web platforms, electronic textbooks, electronic courses, especially those based on technologies of virtual and augmented reality, the peculiarities of professional interaction and communication using ICT. This proved the need to determine the methodological recommendations for improving the effectiveness of using distance learning technologies for training personnel of the Border Guard Agency of Ukraine on the basis of best European experience.

CONCLUSIONS AND PROMISING DIRECTIONS OF DEVELOPMENT OF THE SBGSU DISTANCE LEARNING SYSTEM

Generalization of distance learning possibilities of personnel of the SBGSU indicate that the Ukrainian Border Guard Service should pay more attention to implementation of a holistic and logical system of distance learning both of officers (management personnel) and junior staff. As for the current state of the distance learning at the national level, the SBGSU have developed a number of professionally-oriented distance learning courses, which are held on the basis of National Academy of the SBGSU and its training centers. However, they relate only to a part of the organization’s tasks and do not cover many elements that are important for border guards to perform their tasks efficiently. Therefore, a comprehensive system of training on the basis of distance learning, which covers all areas of personnel functioning and a wide range of tasks implemented, is necessary for better preparing future officer to accomplish the tasks of operational and service activity on the state border protection and motivating military personnel to perform their service duties more effectively.

The results of the survey showed that the distance form of training of cadets under restrictions of pandemic becomes one of the main forms of training at the military higher educational establishment. Among the major drawbacks of the currently functioning distance learning system is considered the technical capabilities of utilized information and communication technologies, web-platforms and application, their stability and quality of communication, time of uninterrupted sessions, limitations on the number of participants and feedback from the audience, the number of equipped workplaces, possibility of organizing mobile learning. Also teachers and instructors of the National Academy still pay insufficient attention to enhancing their digital competencies and methodological potential in order to effectively use ICT and distance learning tools in the educational process of a higher military educational institution.

Promising issues encompass further enhancing of the distance learning system by improving software and hardware support (introduction of personnel training through professional role-plays and command and staff exercises using the JCATS simulation system, which will deepen the practice of integrated use of the distance learning system and simulation modeling system.
in the educational process of NASBGSU, the use of simulators based on virtual and augmented reality technologies; introduction of a training possibilities for teaching staff of educational institutions of the SBGSU and staff of the personnel training units of regional directorates and state border protection bodies that provide distance learning of personnel (including distance learning courses based on the web-platform Virtual Aula for methodological training of teachers of border guard educational institutions).

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Development of distance learning system for law-enforcement higher education institutions: post-pandemic challenges and responses

Desenvolvimento do sistema de ensino a distância para instituições de ensino superior que atuam na aplicação da lei: desafios e respostas pós-pandemia

Desarrollo de un sistema de aprendizaje a distancia para las instituciones de educación superior encargadas de hacer cumplir la ley: desafíos y respuestas posteriores a la pandemia

Resumo
O artigo revela as peculiaridades do desenvolvimento do sistema de ensino a distância para instituições de ensino superior em período pós-pandemia e fornece generalização das possibilidades de ensino a distância no exemplo da instituição de ensino superior do Serviço Estadual de Guarda de Fronteira da Ucrânia. Os autores indicam que o serviço de guarda de fronteira deve prestar mais atenção à implementação de um sistema holístico e lógico de ensino a distância tanto de oficiais quanto de funcionários superiores. Os resultados da pesquisa mostraram que a forma de formação é uma das principais formas de formação na instituição de ensino superior em funcionamento atualmente. As capacidades técnicas de TIC atuaismente utilizadas, web-plataformas e aplicação, sua estabilidade e qualidade de comunicação, tempo de sessões ininterruptas, limitações no número de participantes e feedback da audiência, número de locais de trabalho equipados, possibilidade de organização da aprendizagem móvel.

Palavras-chave: Sistema de ensino a distância. Aplicação da lei. Instituições de ensino superior. Pós-pandemia.

Abstract
The article reveals the peculiarities of development of distance learning system for law-enforcement higher educational institutions in post-pandemic period and provides generalization of distance learning possibilities on the example of the higher education institution of the State Border Guard Service of Ukraine. The authors indicate that the border guard service should pay more attention to implementation of a holistic and logical system of distance learning both of officers and junior staff. The results of the survey showed that the distance learning system are the technical capabilities of currently used ICT, web-platforms and application, their stability and quality of communication, time of uninterrupted sessions, limitations on the number of participants and feedback from the audience, the number of equipped workplaces, possibility of organizing mobile learning.

Keywords: Distance learning system. Law-enforcement. Higher education institutions. Post-pandemic.

Resumen
El artículo revela las peculiaridades del desarrollo del sistema de aprendizaje a distancia para las instituciones de educación superior encargadas de hacer cumplir la ley en el período posterior a la pandemia y proporciona la generalización de las posibilidades de aprendizaje a distancia tanto de los oficiales como del personal subalterno. Los resultados de la encuesta mostraron que la forma a distancia de entrenamiento de cadetes bajo restricciones de pandemia se convierte en una de las principales formas de capacitación en la institución de educación superior encargada de hacer cumplir la ley. Entre los principales inconvenientes del sistema de aprendizaje a distancia que funciona actualmente se encuentran las capacidades técnicas de las TIC utilizadas actualmente, las plataformas web y la aplicación, su estabilidad y calidad de comunicación, el tiempo de las sesiones ininterrumpidas, las limitaciones en el número de participantes y la retroalimentación de la audiencia, el número de lugares de trabajo equipados, la posibilidad de organizar el aprendizaje móvil.

Palabras-clave: Sistema de enseñanza a distancia. Aplicación de la ley. Instituciones de educación superior. Postpandemia.