RESEARCH OF THE EFFECTIVENESS OF DISTANCE LEARNING TECHNOLOGIES USE IN THE PROFESSIONAL TRAINING OF THE MILITARY STAFF

In the article the use of distance learning technologies in the professional training and advanced training of personnel of the State Border Guard Service of Ukraine is substantiated. It is proposed to conduct a survey among teachers on a certain list of questions. Each issue of the effectiveness of distance learning technologies is fundamentally described and analyzed. The survey was conducted among the academic staff of Bohdan Khmelnitskyi National Academy of the State Border Guard Service of Ukraine (then – SBGSU) and the teachers of Major General Igor Momot Central Training Centre of the SBGSU. The results of the survey are presented in the form of tables and diagrams. It is noted that due to distance learning, the teaching staff mainly uses Zoom, Viber, and Google Meet applications. It was found that foreign distance learning platforms are used by teachers mainly for professional self-development, as well as for additional tasks for cadets, research projects and assignments.
Based on these results, the advantages and disadvantages of using distance learning technologies for border guard training were identified. A third of the teachers chose distance education, as it provides training in conditions of forced dispersion and distance, thanks to Internet access. The practical use of technical devices among teaching staff is considered and a comparison with the use of the same means by cadets is proposed. As for the quality of assessment of cadets by teachers when using distance learning technologies, the reasons for its bias are stated, which is related to the difficulty of monitoring the actions and integrity of cadets.

**Keywords:** distance education; distance learning technologies use; teacher; staff; application; student.

1. **INTRODUCTION**

**Problem statement.** The current conditions of state functioning and the development of the education sector necessitate the modernisation of technologies in the context of providing quality educational services, including distance learning. An increasing number of universities, both in Ukraine and globally, provide distance learning opportunities. It is worth noting that distance learning, as a form of education, involves an element of physical separation of teachers and students during the educational process using various technologies to facilitate and simplify communication between them.

In recent years, the world’s education sector has undergone significant structural changes due to the development of the Internet and its growing influence on all spheres of society. The main role in improving the educational process undoubtedly belongs to the introduction of the latest information technologies [1].

In view of the above, the study of the development and application of modern distance learning technologies in pedagogical practice as an important component of the development and modernisation of the modern educational process is becoming relevant.

**Recent research and publications review.** In Ukraine the development of distance learning began much later than in Western Europe and was very slow for several reasons, including the perception of distance learning as competitive with classical traditional education.
According to the definition in the Order of the Ministry of Education and Science of Ukraine of 25 April 2013 No. 466 “On Approval of the Regulation on Distance Learning”, the latter is interpreted as “an individualised process of acquiring knowledge, skills, abilities and methods of human cognitive activity, which takes place mainly through the indirect interaction of participants in the educational process who are remote from each other in a specialised environment that operates on the basis of modern psychological, pedagogical and information and communication technologies” [2]. It is worth noting that the concept of “distance learning” and its related categories are interpreted taking into account its general understanding as an activity using distance learning technologies and resources [3].

There are a set of reasons for the relevance of an empirical study of the effectiveness of distance learning technologies in the professional training and advanced training of the staff of the State Border Guard Service of Ukraine (then – SBGS).

Firstly, such a study will allow us to assess how widespread the practice of using such technologies is and how effective they are in the professional activities of military personnel for the purpose of professional development. The study will answer the question of whether distance learning technologies really improve the quality of training and professionalism of personnel. The results of the study can serve as a basis for improving the border guard training system, help identify shortcomings and opportunities for improving and optimising curricula and methods of transferring information to students, and develop appropriate recommendations for the organisers of the educational process and students.

Secondly, the investigation will take into account the opinions and feedback of border guards on distance learning technologies and course content in order to update, improve the curricula and bring them in accordance with the needs and demands of the students.

Thirdly, the study can help to identify which distance learning technologies are most effective, which save money and resources aimed at training to improve the skills of border guards.

Thus, the aim of the research is to highlight the professional usage of distance learning technologies by the military staff.
2. RESEARCH RESULTS

The usage of distance learning technologies in the educational process in the XXI century has become one of the most important innovations in the educational sphere of many countries in terms of conducting distance learning courses. That is why it is justified that the study of the role of distance learning technologies, especially in the field of professional training, has been one of the most relevant and priority areas in pedagogical science in recent years. The development of distance learning technologies is aimed at improving the efficiency of the educational process in general. However, nowadays, there is a growing gap between the rapid spread of distance learning technologies and the ability of teachers and students to apply them skilfully in the learning process [4].

The investigation was based on the National Academy of Border Guard Service of Ukraine and Major General Igor Momot Central Training Centre of the SBGSU (then – SBGS training center). The total number of respondents was 325, including 35 academic staff and lecturers of the NA SBGSU and SBGS training center, and 290 cadets of these educational institutions (210 and 80 respectively).

In order to study the effectiveness of distance learning technologies use for border guards, it is proposed to conduct a survey of teachers on a certain list of following questions:

1. What distance learning platforms do you use in your work?
2. What advantages and disadvantages do you see in distance learning technologies use for border guard training?
3. Which of the main institutional forms of education is the most effective? Explain.
4. What technical devices do you use for distance learning?
5. Did you participate in the development of distance learning courses?
6. Name topics or themes of the distance learning courses you have taken for professional development?
7. How often do you use distance learning technologies to improve your professional skills?
8. Does it correspond the criteria for objective assessment of knowledge during distance learning technologies use?
9. Have you got any difficulties during the usage of distance learning technologies?

10. What e-learning tools do you know and use?

The survey and data collection were carried out according to the author’s questionnaire using the Google Forms software, which ensures the reliability and validity of statistical data during the survey.

According to the results of the survey of the academic staff of the National Academy and the teachers of the SBGS training center, teaching staff uses mainly Zoom, Viber, and Google Meet applications and the departmental distance learning platform for distance learning (fig. 1).

![Diagram showing the use of distance learning technologies and platforms]

**Fig. 1. Answers to the question “What technologies and distance learning platforms do you mostly use in your teaching activities?”, in %**

The results of the survey suggest that more than half of the teaching staff (54.2 %) used Zoom during the pandemic caused by SARS-CoV-2, as well as in the period from February 2022 to September 2023, during the forced stay in shelters and during the dispersal of personnel for distance
learning. This is because the app has an accessible interface that makes it easy to use even for those who do not have much experience with technology. The platform allows you to conduct video conferences with a large number of participants at the same time, which is especially important for large groups of students. Zoom also offers interactive features such as chat, support for virtual whiteboards, screen sharing, and subgrouping. The platform is characterised by stability and sufficiently high connection quality, which allows you to effectively conduct classes without interruptions. These characteristics make Zoom attractive for teaching classes to students.

As for foreign distance learning platforms, teachers use them mainly for professional self-development, as well as for additional assignments for students, research projects and tasks [5]. Fig. 2 shows the distribution of answers to the question “Which foreign distance learning platforms do you use for professional self-development?”

![Fig. 2. Answers to the question “Which foreign distance learning platforms do you use for professional self-development?”, in %]

<table>
<thead>
<tr>
<th>Platform</th>
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<tbody>
<tr>
<td>Coursera</td>
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<td>LinkedIn Learning</td>
<td>12,3</td>
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<tr>
<td>Khan Academy</td>
<td>10,5</td>
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<tr>
<td>edX</td>
<td>12,1</td>
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<tr>
<td>Codecademy</td>
<td>15,4</td>
</tr>
<tr>
<td>Skillshare</td>
<td>8,5</td>
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<tr>
<td>Virtual Aula</td>
<td>7,4</td>
</tr>
<tr>
<td>Other</td>
<td>2,5</td>
</tr>
<tr>
<td>iTunes U</td>
<td>8,2</td>
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The Coursera platform offers various specialised programmes and courses. The edX platform was created by the Massachusetts Institute of Technology and Harvard University and offers a wide range of courses for educational institutions. Udemy offers a wide range of courses in various fields, from business and marketing to programming and art. LinkedIn Learning offers a large number of online courses for professional development and learning new skills. Khan Academy provides free courses for applicants of all ages, and Skillshare helps to acquire various skills, including creativity, design and business. Apple’s iTunes resource provides access to educational materials from various universities and schools through the iTunes app [6].

Summarising the responses to the questionnaire on the advantages and disadvantages of using distance learning technologies for border guard training, the key aspects were identified. In terms of advantages, teachers note the flexibility and accessibility of training provided by distance learning technologies, as they allow learning anywhere and anytime. It is especially important for military personnel who may be stationed in remote locations or have non-standard service schedules. Another advantage is the variety of learning tools and technologies that can be used to deliver such training. These include video tutorials, interactive exercises and virtual simulations, which together allow for the creation of content that can be more engaging and effective for different learning styles.

As for the main disadvantages, teachers note the lack of physical interaction (presence effect) and direct contact with students, which significantly complicates the building of interpersonal relationships, which are among the most important during training.

Another significant disadvantage is the limited scope for practical exercises, as some aspects of military training cannot be replicated through distance learning.

Successful distance learning also requires a stable internet connection, which can be problematic in remote locations or areas with limited access.
In terms of the main institutional forms of education, teachers believe that the most effective form of education is full-time education, as it provides an opportunity for physical interaction between teachers and students. Therefore, the answer to this question is directly related to the previous question. While 43.10% of cadets preferred this form of education as the most effective, 61.3% of teachers recognised this form as the best (fig. 3).

Distance education was chosen by 29.2% of teachers, as it provides learning in conditions of forced dispersion and distance thanks to access to the Internet.

Other forms of education are less popular.

![Chart: How do you think, which of the main institutional forms of education is the most effective? (%)](chart.png)

*Fig. 3. Answers to the question “Which of the main institutional forms of education is the most promising, in your opinion”, in %*

As for the technical devices used by teachers for distance learning, they are: laptops (42.4%), computers (21.5%), smartphones (18.9% of respondents) and tablets (14.5%). Fig. 4 shows the distribution of answers to the question “What technical devices do you use for distance learning?” among students and teachers, in %. While the first prefer smartphones in their studies, lecturers use laptops in their work.
Fig. 4. Answers to the question “What technical devices do you use for distance learning?” among cadets and teachers, in %

Another question in the questionnaire concerns the experience of developing distance learning courses. The results of summarizing the responses allow us to conclude that the vast majority of lecturers have repeatedly participated in the development of distance learning courses (68.8 %), 21.4 % have developed courses only once, and 9.8 % have no such experience.

The results of the survey on distance learning courses and topics that teachers took for professional self-development were quite interesting. These were mainly courses and topics related to advanced English language learning (Virtual Aula, Duolingo, Rosetta Stone); courses that help improve teaching methods, introduce innovations in pedagogy and teaching methods; courses that teach the use of various platforms and software to improve the quality of the educational process; courses on communication and leadership development; courses that update knowledge in subject areas, helping teachers to keep abreast of the latest trends and research in the disciplines they teach; courses to teach effective group management and conflict management strategies.
Regarding how often teachers use distance learning technologies to improve their skills and professional development, 21.85 % of respondents do it regularly, 45.61 % do it occasionally, 15.38 % do it very rarely, and 17.16 % do not use these technologies for their own self-development at all (fig. 5).

![Diagram showing usage frequencies]

*Fig. 5. Answers to the question “How often do you use distance learning technologies to improve your skills and professional development?” among teachers, in %*

Regarding the compliance with the criteria of objectivity of knowledge assessment in the use of distance learning technologies, the answers of teachers differ somewhat from those of cadets. This is clearly shown in fig. 6.

Thus, 38.15 % of teachers do not express doubts about the objectivity of assessment, another 34.55 % believe that the assessment of knowledge in the use of distance learning technologies mainly meets the criteria of objectivity, and 15.6 % and 11.7 % (who believe that it does not meet the criteria of objectivity) are sceptical about the objectivity of assessment in distance learning. As for the reasons for bias, for example, it is more difficult to control the actions and integrity of cadets during testing in a remote environment. Also, unstable internet connections and technical problems with testing platforms can lead to incomplete
uploading of tasks or data loss. In addition, instructors may have limited opportunities to observe the testing process, when it is difficult to check compliance with the rules during the tasks, cadets may find themselves in different conditions during the test, which can also affect the results of the assessment.

![Chart showing the assessment of knowledge](image)

**Fig. 6. Answers to the question “Does the assessment of knowledge meet the criteria of objectivity when using distance learning technologies?” among cadets, in %**

Teachers who use distance learning technologies state that there are difficulties they have encountered or may encounter.

First of all, these are technical problems, because not all teachers have a sufficient level of technical literacy to use platforms or software, demonstrate visual materials (presentations, video clips, etc.).

Teachers also note difficulties in creating interactive content and developing interactive materials for distance learning, which requires creativity and time.

Teachers who do not have sufficient experience in organising distance learning and developing courses note the problem of mastering new platforms and programmes, as this can also be a rather lengthy process.
Also, among the problems associated with distance learning, teachers point to difficulties in ensuring effective communication and engaging students in active cognitive activities in a virtual environment, especially to ensure the active participation of the entire cadet group.

The questionnaire responses of the teachers mentioned the problem of assessing and monitoring the dynamics of cadets’ learning achievements in a remote format.

At the same time, according to the answers and comments of the teachers, they can cope with these difficulties through practice, additional training, peer support and professional development in the use of technologies for distance learning.

Regarding the distance learning tools that teachers know and use, the study found that during the pandemic, SARS-CoV-2, and martial law, the most popular tools for conducting classes during this period were Zoom, Viber, and Google Meet. These video communication and videoconferencing tools were mentioned in almost 90% of the responses to the questionnaire. In addition to these technologies, teachers used WhatsApp, a messaging and video calling app, Telegram, a real-time messaging app, and Skype, an online messenger for communication over the Internet and file sharing.

3. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

Thus, the study of distance learning technologies use by teachers allows us to conclude that the most popular among the teaching staff is the Zoom application, as indicated by 54.2% of the survey participants. This is due to the accessibility of the interface and the ability to hold video conferences with a large number of participants at the same time. As for foreign distance learning platforms (Coursera, edX, Udemy, LinkedIn Learning, Khan Academy, Skillshare, Apple iTunes), they are used by teachers mainly for professional self-development. Among the main disadvantages of distance learning, teachers note the lack of the effect of presence and direct contact with students, the limited number of practical classes, and the need for a stable Internet connection. The advantages are the flexibility and accessibility of learning, the variety of learning tools and technologies
(video tutorials, interactive tasks and virtual simulations) that such learning can provide.

In terms of the most effective institutional forms of education, the teachers believe that distance education is inferior to full-time education, as the latter provides the opportunity for physical interaction with students. However, distance education provides training in conditions of forced dispersion and distance. The vast majority of lecturers have repeatedly participated in the development of distance learning courses (68.8 %), 21.4 % have developed courses only once, and 9.8 % have no such experience.

As for the courses and topics of distance learning which teachers used to improve their professional level, these are courses and topics related to in-depth study of English, improvement of teaching methods, innovations in pedagogical activities, development of communication skills and leadership. More than 66 % teachers use distance learning technologies to improve their skills and professional development (regularly or occasionally). About 72 % believe that the assessment of knowledge in the use of distance learning technologies mostly meets the criteria of objectivity.

**Prospects for further research.** Teachers who use distance learning technologies state that there are difficulties they have encountered or may encounter: technical problems, difficulties in creating interactive content, developing interactive materials for distance learning, lack of sufficient experience in organising distance learning and developing courses, difficulties in ensuring effective communication and engaging students in active cognitive activities in a virtual environment. As for distance learning tools, the study found that Zoom, Viber, and Google Meet are the most popular for conducting classes. In the following works, there is an opportunity to explore and analyze the difficulties faced by teachers and students in distance learning.

**References**

Шевчук О. ДОСЛІДЖЕННЯ ЕФЕКТИВНОСТІ ЗАСТОСУВАННЯ ТЕХНОЛОГІЙ ДИСТАНЦІЙНОГО НАВЧАННЯ У ПРОФЕСІЙНІЙ ПІДГОТОВЦІ ВІЙСЬКОСЛУЖБОВЦІВ

У статті обґрунтовано використання технологій дистанційного навчання у професійній підготовці та підвищеній кваліфікації персоналу ДПСУ. Запропоновано провести опитування серед викладачів за певним переліком питань. Фундаментально описано та проаналізовано кожне питання щодо ефективності застосування технологій дистанційного навчання. Опитування проведено серед науково-педагогічних працівників Національної академії державної прикордонної служби України імені Богдана Хмельницького та викладачів головного центру підготовки особового складу Держприкордонслужби України імені генерал-майора Ігоря Момота. Результати опитування висвітлено у вигляді таблиць та діаграм. Дослідження
ефективності застосування технологій дистанційного навчання дозволило виокремити такі додатки, що використовуються викладачами у їхній професійній діяльності: Zoom, Viber, і Google Meet. Охарактеризовано зарубіжні платформи дистанційного навчання, які викладачі використовують в основному для професійного само- розвитку, а також для додаткових завдань курсантам, виконання ними дослідницьких проектів і завдань. Після зазначених результатах визначено переваги та недоліки у застосуванні технологій дистанційного навчання для підготовки прикордонників. Дистанційну форму освіти було обрано третиною викладачів, адже завдяки доступу до Інтернету забезпечується навчання в умовах вимушеноності розосередження та дистанціювання. Розглянуто практичне використання технічних пристроїв серед викладацького персоналу й за- пропоновано порівняння з застосування цих ж засобів курсантами. Щодо якості оцінювання викладачами курсантів під час застосо- вання технологій дистанційного навчання констатуються причини його необ'єктивності, через складність контролювати дії та добро- чесність курсантів.

Ключові слова: дистанційна форма освіти; дистанційне навчання; викладач; персонал; додаток; здобувач освіти.

Список використаних джерел


