

Analysis of the Results of the Experiment on Practical Training of Border Guard Cadets in a Higher Education Institution

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Abstract: *The article deals with the results of an experiment on the organisation and implementation of practical training of border guard cadets at the Bohdan Khmelnytskyi National Academy of the State Border Guard Service of Ukraine. The aim of the research was to provide a theoretical rationale for the feasibility of conducting practical training within a higher education institution and to analyse the effectiveness of the implemented measures. The authors used a range of methods, including theoretical (analysis of literature and regulatory framework), empirical (observation, questionnaires, expert assessments), pedagogical experiment and statistical analysis. Practical training was carried out under four educational and professional programmes: 'State Border Security', 'Psychology', 'Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities' and 'Telecommunications and Radio Engineering'. The experience of implementing the practice in the internal units of the Academy allowed the cadets to consolidate their knowledge, develop professional skills and leadership qualities. A survey of cadets confirmed a positive perception of the initiative, which suggests that such events should be continued in the future. The participants of the experiment noted the quality of the organisation, the convenience of the training formats and the significance of the practice for their professional growth. The obtained results became the basis for the formation of practical recommendations for improving the training of future border guard officers in higher military education institutions. The authors propose to continue the experiment, improve methodological approaches to the content of the practice, and involve additional units. The conclusions confirm the importance of the practical component in the formation of professional readiness of future border guard officers.*

Keywords: *practical training, cadets; border guard officers; educational and professional programme; military education; higher education institution.*

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Introduction

Practical training is an integral part of the educational process in accredited study programmes. It is aimed at forming and consolidating in practice the professional knowledge, skills and abilities acquired as a result of studying at a higher education institution.

Practical training of border guard cadets is organised and conducted in the state border protection bodies and units under the relevant practice programmes. At the same time, as a result of the full-scale invasion of the Russian federation, the command staff of the State Border Guard Service of Ukraine, in particular the command staff of the Bohdan Khmelnytskyi National Academy of the State Border Guard Service of Ukraine, faced the acute problem of ensuring the practical training of future officers and the safety of participants in the educational process during its carrying out. Today, the state of the security component does not allow for the full use of existing practice bases, which negatively affects the level of practical training of cadets for assigned tasks to be performed.

In the context of armed aggression, existing threats and challenges to border security, there is a need to ensure an effective interconnection of theoretical and practical training of future border guard officers at all levels, and to increase attention to the practical component of the professional training of future border guard officers. In such conditions, the State Border Guard Service of Ukraine needs highly professional, competent, mobile, responsible specialists, officers-leaders who are ready to defend the independence and territorial integrity of Ukraine. Moreover, today State Border Guard Service of Ukraine graduates are performing tasks in the areas of combat operations, defending Ukraine from the aggressor.

Considering the above, the issue of implementing innovative approaches to the organization and conduct of practical training for future border guard officers becomes particularly relevant. Specifically, this refers to its implementation in higher education institutions, which would enhance the system of cadet training by taking into account modern trends, European standards, and contemporary challenges.

Literature review

The issue of practical training is highly relevant among scholars from various fields and organizers of the educational process. Significant interest in the context of our study arises from the research on the practical training of representatives from law enforcement agencies in different countries (Cho &

Park, 2017; Lazorenko & Yakymchuk, 2009; Dewi et al., 2021; Galushko & Yarosh, 2008; Holovan et al., 2024; Merdova & Shulga, 2021; Sapiga, 2023; Tovma, 2011; Zlobina, 2023); the development of cadet leadership in higher education institutions (Tahirov, 2020); the implementation of higher education in Ukraine under wartime conditions (Nikolaiev et al., 2023); educational and training technologies in the military sphere (Ragchaasuren & Tsend, 2024; Fletcher, 2009); conceptual and technological support for self-assessment of cadet training effectiveness (Bulatbayeva et al., 2022), and others. The main approaches to practical training for border guard cadets are defined by a number of regulatory legal acts from the EU and Ukraine: the European Union Border Guard Training Program developed by FRONTEX (CCC, 2022); the Concept of the Transformation of the Military Education System (1997); the Law of Ukraine "On Higher Education" (2014); the Instruction on the Organization and Conduct of Practical Training for National Academy of the State Border Guard Service of Ukraine Cadets (2018). However, our research has shown that today there is no clear mechanism for organizing additional practical training for future border guard officers in higher education institutions under martial law.

Materials and methods

The purpose of the article is to substantiate and analyse theoretically the results of the experiment on practical training of border guard cadets at the National Academy of the State Border Guard Service of Ukraine; to assess the quality of organisation and practical training conducting; and to identify ways and directions for improving the quality of organisation and practical training conducting at higher education institutions.

Participants

The experimental study was conducted at the National Academy of the State Border Guard Service of Ukraine (NASBGSU). A total of 209 higher education cadets participated in the study. An experimental group (EG, n = 100 cadets) was formed, consisting of: 30 cadets enrolled in the educational and professional programs (EPP) "State Border Security," 24 in "Psychology," 23 in "Organization of the Activities of Engineering and Technical Units of the State Border Guard Service of Ukraine," and 23 in "Telecommunications and Radio Engineering." The control group (CG, n = 109 cadets) enrolled in the abovementioned EPP included: 28 cadets in "State Border Security," 24 in "Psychology," 24 in "Organization of the Activities of Engineering and Technical Units of the State Border Guard

Service of Ukraine,” and 33 in “Telecommunications and Radio Engineering.”

The control and experimental groups were formed according to their year of enrollment: the EG consisted of cadets admitted to the Academy in 2022, while the CG consisted of cadets who began their studies in 2023. By gender distribution, the EG comprised 85% male and 15% female participants, and the CG – 73.8% male and 26.2% female. The experiment ensured maximum participation of respondents from each EPP. Due to the specifics of martial law, more detailed demographic data of the participants cannot be disclosed in an open-access publication.

Cadets in the CG underwent practical training according to the curriculum, while cadets in the EG additionally completed practical training at NASBGSU. The results of the practical training defence for the third year of study at the start of the experiment showed that the groups were generally identical; that is, the EG and CG did not differ significantly ($p > 0.05$) in terms of performance level, quality, or average grade.

Research Methods

To achieve the stated goal, the following methods were used:

Theoretical methods – analysis and synthesis of scientific literature, regulatory documents, and both foreign and domestic experience – to clarify the content, features, and procedure of practical training; generalization of pedagogical experience in training future specialists and in the development of practical skills, abilities, and competencies in higher education graduates for the successful implementation of professional activities.

Empirical methods – observation, questionnaires, testing, self-assessment, and expert evaluation – were used to identify the characteristics and stages of practical training of future border guard officers.

Pedagogical experiment was conducted to verify the effectiveness of the proposed measures for the practical training of future border guard officers in higher education institutions, to formulate and systematize conclusions, and to determine directions for further research into the problem.

Methods of mathematical statistics were applied for the quantitative and qualitative analysis of the obtained results, as well as for verifying their statistical reliability.

Some of the authors participated in the organizing and implementation of the experiment; implemented the main tasks of practical training at the National Academy of the State Border Guard Service of Ukraine in accordance with the practice programmes; other co-authors

participated in the generalisation of the experiment results and development of proposals for improving the practice; analysed the ability to organise the practice in higher education institutions; developed and tested the scientific and methodological apparatus for improving the content and organisational principles of practical training at the National Academy of the State Border Guard Service of Ukraine; characterised quantitative and qualitative changes, negative aspects in practical training; outlined trends and current challenges in the practical training of future border guard officers.

This study complies with the ethical standards of the Law of Ukraine “On Higher Education” of July 1, 2014, No. 556-VII; the requirements of the Order of the Ministry of Internal Affairs of Ukraine “On Approval of the Rules of Ethical and Honest Conduct of the Personnel of the State Border Guard Service of Ukraine” of November 5, 2024; the Regulation on Stakeholders in Educational Institutions of the State Border Guard Service of Ukraine, approved by the Order of the Head of the State Border Guard Service of Ukraine of August 10, 2023, No. 64; and the Regulation on the Organization and Conduct of Surveys of Participants in the Educational Process at the NASBGSU, approved by the Order of the Rector of the NASBGSU of January 29, 2021, No. 13 (as amended). Participation of all experiment participants in the survey was anonymous.

Results of research

Researches show that practical training of higher education graduates makes it possible to combine the achievements of theory and practice of future specialist training and to form practical skills and competences for successful professional activity in the context of modern requirements (Dewi et al., 2021; Sapiga, 2023).

One of the key objectives in transforming Ukraine’s military education system is to enhance the level of practical training and readiness for professional activity during the mastery of EPPs in relevant specializations, while simultaneously completing educational programs of professional military education at the basic (L-1A) and specialized (L-1B) tactical-level courses (Concept of Transformation of the Military Education System, as amended, 1997), in line with the professional military education model of NATO member states. The Law of Ukraine “On Higher Education” (2014) substantiates the provisions for ensuring an educational process aimed at acquiring high-quality professional training in accordance with the requirements established by the legislation on the provision of educational services, and places emphasis on the concepts of subject-specific

learning outcomes and competencies to be developed in future professionals, including border guard officers.

The primary regulatory document at the level of the border agency governing the organization and implementation of practical training for cadets of the National Academy of the State Border Guard Service of Ukraine is the Instruction on the Organization and Implementation of Practical Training for Cadets of National Academy of the State Border Guard Service of Ukraine, approved by the Order of the Ministry of Internal Affairs of Ukraine No. 167 dated March 2, 2018. This document defines the procedure for organizing and conducting practical training, the defence of its outcomes, and establishes practical training as a mandatory component of the educational process. The Law of Ukraine 'On Higher Education' (2014) substantiates the provisions aimed at ensuring an educational process focused on the acquisition of high-quality professional training in accordance with the requirements established by legislation on the provision of educational services. The law emphasizes the concepts of learning outcomes and competencies to be developed in future professionals, including border guard officers. One of the key objectives of the transformation of the military education system is to enhance the level of practical training and readiness for professional activity during the implementation of educational and professional programs in relevant specialties. This is to be achieved in parallel with the acquisition of educational programs in professional military education at the basic (L-1A) and specialized (L-1B) tactical levels (Concept for the Transformation of the Military Education System, 1997). Based on the analysis of experience in organizing and implementing practical training (Galushko & Yarosh, 2008; Lazorenko & Yakymchuk, 2019; Merdova & Shulga, 2021), as well as the formation of practical competence in the educational process of higher education institutions (Golovan et al., 2024; Tovma, 2011), the following main stages of practical training can be identified: planning of practical training; implementation of practical training; analysis and adjustment of practical training. Each of these stages has its own specific content.

During the planning of practical training, the following factors were taken into account: the security component of the educational process (Nikolaiev, Riy, & Shemelynets, 2023); the specific features of training a border guard officer under current conditions; the requirements regarding leadership qualities of graduates (Tahirov, 2020); the necessity of preparing for combat operations due to the full-scale war initiated by the Russian federation, which demands the enhancement of leadership skills and responsibility in decision-making; the increase in information volume and

the introduction of modern automated command and communication systems in the course of managerial activities; the need for coordination of professional actions both among individual servicemen and military units (Fletcher, 2009); the adoption of modern foreign models of weapons and military equipment; the impact of stress factors on the psyche under combat conditions; and the necessity of psychological rehabilitation and support for individuals who have experienced extreme, emergency, or traumatic events.

The practical training of border guard cadets at the National Academy of the State Border Guard Service of Ukraine was organized by the Academy's command staff. The experiment involved the participation of the deanship of the Faculties of State Border Security and Operational and Service Activities Support; the Educational Department; the Department for Quality Assurance in Education; various departments and services of the National Academy of the State Border Guard Service of Ukraine where the cadets underwent their practical training; academic staff from the leading departments of the Academy; and fourth-year cadets of EG enrolled in the educational and professional programmes 'State Border Security,' 'Psychology,' 'Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities ' and 'Telecommunications and Radio Engineering'. Cadets of the CG did not participate in practical training at the NASBGSU.

Taking into account modern approaches (Lazorenko et al., 2022; Zlobina, 2023), we carried out the following activities when planning practical training: during the briefings to the cadets involved in the experiment, the purpose, tasks and procedure for practical training were explained; programmes and logbooks for practical training were developed; schedules for involving cadets in the experiment and individual training schedules were worked out. Additional classes were held with the graduating cadets for each educational and professional programme, during which the peculiarities of practical training were explained; the main regulatory acts and guidelines for practical tasks were studied; and the supervisors of the practical training were introduced from the National Academy of the State Border Guard Service of Ukraine departments and the services where the cadets were trained.

The locations and areas of practical training were defined as follows:

For the educational and professional programme 'State Border Security': leadership training was conducted at the Military Lyceum of the State Border Guard Service of Ukraine, within educational platoons and companies.

For the educational and professional programme 'Psychology': training in the field of moral and psychological support (psychology) took place at the Khmelnytskyi Regional Psychiatric Care Facility of the Khmelnytskyi Regional Council, in departments for adult general psychiatry, borderline conditions, anaesthesiology and intensive care, and addiction treatment.

For the educational and professional programme 'Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities': engineering and technical support training was held at the Armament and Engineering Support Department of the National Academy of the State Border Guard Service of Ukraine, specifically in subdivisions responsible for automotive and armored vehicle support, maintenance and repair of armored vehicles, technical support, missile and artillery armaments, engineering support, and the service for radiological, chemical, and biological protection and environmental safety.

For the educational and professional programme 'Telecommunications and Radio Engineering': communications training was conducted within the Communications and Information Systems Department of the National Academy of the State Border Guard Service of Ukraine, including units for mobile information systems, technical information protection and cybersecurity, information and telecommunication systems, and mobile platforms. The aim of the experiment is to involve cadets in activities aimed at improving leadership skills and professional competences in their speciality. In accordance with the general objective of the experiment, a partial objective and tasks of practical training for cadets were formed for each educational and professional programme. Generalised data on the advancement and consolidation of cadets' theoretical knowledge, acquisition and improvement of practical skills and professional competences in accordance with the aim and objectives of practical training are presented in Table 1.

The purpose of the practical training of cadets is developed taking into account the functional duties that they will perform upon their appointment to the state border protection body. The tasks of the practical training align with the learning outcomes specified in the educational and professional programmes pursued by future border guard officers.

Table 1. The purpose and objectives of the border guard cadets' practical training under the educational and professional programme

| Educational and professional programme | Purpose of the practical training | Objectives of practical training |
|--|--|---|
| State Border Security | improvement of leadership qualities of a commander in the position of platoon commander | strengthening and practical application of acquired theoretical knowledge in the daily management activities of a unit commander; development of professional and business qualities of the leader (abilities for systematization, generalization, analysis, and creative thinking); fostering initiative, independence in decision-making, and readiness to take responsibility for the decisions made. |
| Psychology | improving the skills of providing psychological assistance to various categories of personnel | strengthening and practical application of the acquired theoretical knowledge on the areas of work of psychologists whose competence includes the provision of psychological assistance to various categories of the State Border Guard Service of Ukraine personnel; development of the ability to conduct activities with servicemen in need of individual social and psychological assistance; organise and conduct comprehensive psychological work with all categories of personnel and increase their adaptation to the conditions of military service; fostering a sense of respect for the profession of psychologist, personal responsibility, and mastering the model of a specialist with a high inner culture and developed professional qualities. |
| Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities | Improvement of practical skills in the organisation, maintenance, diagnostics and restoration of technical | strengthening and practical application of the acquired theoretical knowledge on the actions of an officer of engineering and technical support services of the state border protection body; development of the ability to assess the situations of service activity |

| | | |
|---|---|--|
| | <p>maintenance, diagnostics and restoration of technical serviceability of engineering and technical support facilities</p> | <p>independently and objectively, make well-founded decisions within the powers of the officer of engineering and technical support services of the state border protection body; developing cadets' perseverance, integrity and responsibility for the performance of assigned tasks;</p> |
| <p>Telecommunications and Radio Engineering</p> | <p>improving practical skills in organising the sustainable functioning of telecommunications and information and communication systems</p> | <p>strengthening and practical use of the acquired theoretical knowledge on the actions of an officer in the field of communications, information systems and operational and technical activities; development of skills and practical abilities to deploy and configure components of electronic information and communication systems and perform basic duties stipulated by positions in the field of communications and information systems; fostering independence, creative thinking, and initiative in cadets while performing assigned tasks.</p> |

In accordance with the created schedules, the cadets were involved in practical training activities during the month, 5-6 people from each training group every week. The rest of the cadets of the study groups attended classes according to the schedule. During the period of practical training, cadets completed the educational and professional program me according to individual study schedules. After each period, the cadets presented their reports on the implementation of practical training programmes, after which appropriate adjustments were made to the practical training process. It should be noted that this practice was an additional one among many others stipulated in the relevant curricula under the EPPs; therefore, its duration was limited to one week so as to prevent a significant interruption of classes.

During the practical training, the cadets performed certain individual tasks; systematised, improved and strengthened their knowledge and skills; and acquired practical skills and competences in certain areas of practice.

The generalised data on the units and positions of practical training of cadets studying under the following educational and professional

programmes: State Border Security, Psychology, Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities and Telecommunications and Radio Engineering are presented in Table 2.

Table 2. Units for practical training of border guard cadets under the educational and professional programmes.

| Educational and professional programme | Practical training unit | Practical training position |
|--|--|--|
| State Border Security | Military Lyceum of the State Border Guard Service of Ukraine | Commander of a training company (platoon) |
| Psychology | Khmelnyskyi Regional Psychiatric Care Facility under the Khmelnyskyi Regional Council | Propaedeutics of psychiatric disorders aimed at gaining practical experience in working with individuals with mental illnesses and psychiatric conditions. |
| Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities | Armament and Engineering Support Department of the National Academy of the State Border Guard Service of Ukraine | chief of motor and armoured vehicle support service; chief of missile and artillery support service; chief of the engineering service; chief of radiological, chemical, and biological protection and environmental safety service. |
| Telecommunications and Radio Engineering | Chief of Radiological, Chemical, and Biological Protection and Environmental Safety Service | chief of the motor vehicles section; chief of the information and telecommunication systems section; chief of the technical information protection and cybersecurity section. |

Source: authors' own concept

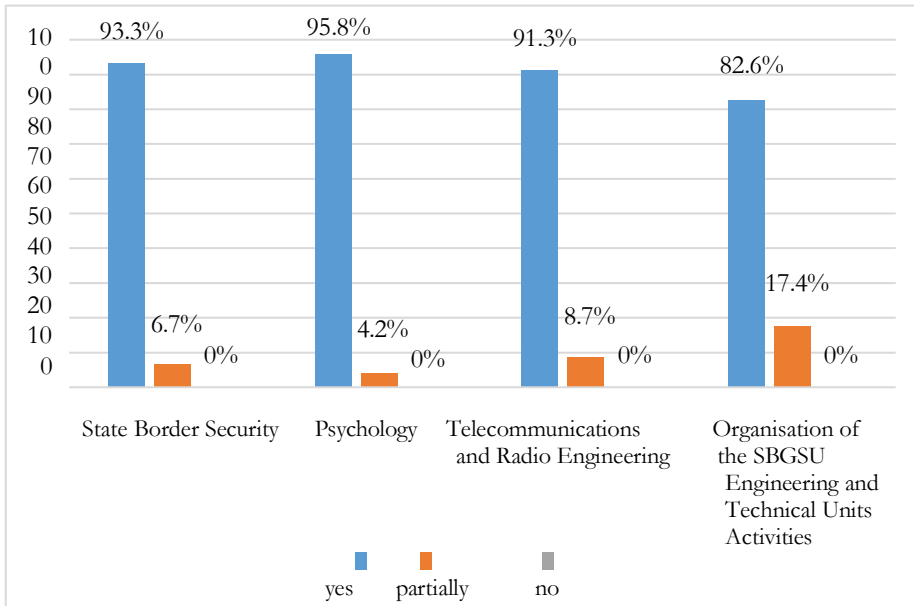
After the experiment was completed, we conducted an anonymous online survey to obtain information on: satisfaction with the organisation and activities aimed at improving leadership skills and professional competencies; areas of organisational quality improvement and practical training. This survey can also be considered in the context of testing the tools, selecting the most relevant questions and scales.

The questionnaire was developed taking into account foreign experience (Bulatbaieva et al., 2022; Cho & Park, 2017), suggestions from practical units and generally accepted requirements for surveys. The questions included in the survey were tested during the assessment of cadets' satisfaction with the organization of practical training at the border, which made it possible to obtain reliable results. The questionnaire was created in Google Forms, which allows for the development of various types of questions, the analysis of responses using charts and diagrams, easy distribution via a link, and storage in Google's cloud repository.

In total, the questionnaire included ten questions, including those with compatible alternatives (it was possible to select several answer options and add your own). The relatively small size of the questionnaire helped to reduce the time required to complete it and improve its usability.

When asked, 'Was the purpose and plan of the practical skills improvement activities explained to you?', 90.8% of respondents answered affirmatively, while 9.2% indicated that the purpose was partially explained. It is positive to note that there were no cadets who did not understand the procedure for improving practical skills (see Fig. 1).

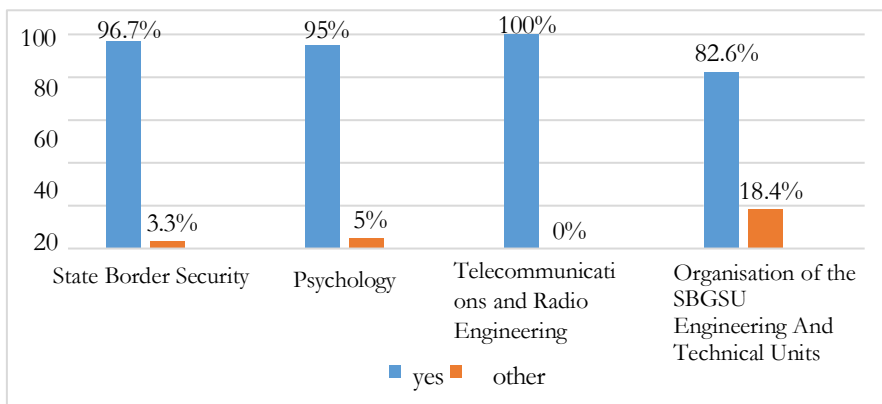
Figure 1. Explanation of the purpose and plan of the practical skills improvement activities (%).



Source: authors' own concept

The vast majority of cadets (93.6%) believe they have received sufficient theoretical knowledge to effectively complete the practical skills improvement program. The remaining responses accounted for 6.7% (see Fig. 2)

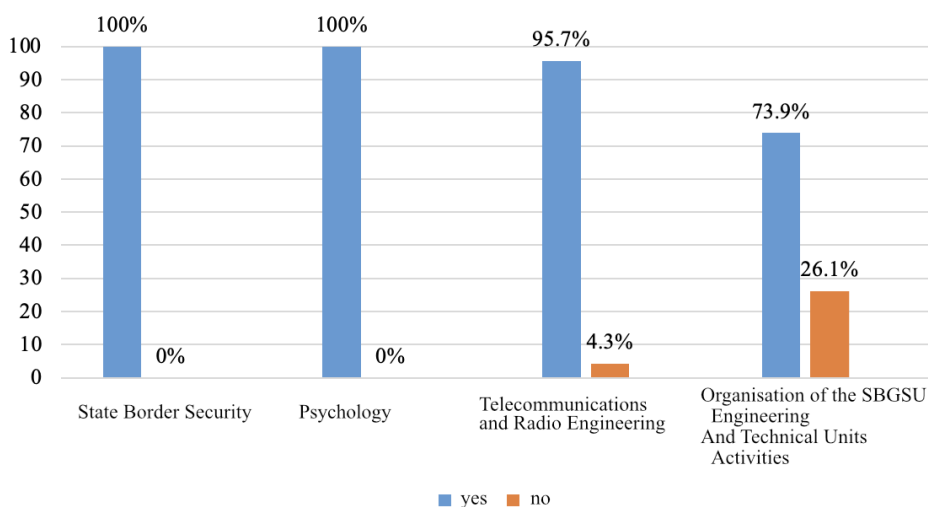
Figure 2. Sufficiency of theoretical knowledge for effective completion of the practical training program (%).



Source: authors' own concept

The responses to the question 'Were all necessary documents and informational (methodological) materials available to you for implementing the practical skills improvement activities?' revealed that 4.3% of cadets studying under the educational and professional programme 'Telecommunications and Radio Engineering' and 26.1% of cadets studying under the Educational and professional programme 'Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities' had insufficient access to certain guiding documents. This was due to specific restrictions on access to documents for official use. This issue was resolved during the experiment (see Fig. 3).

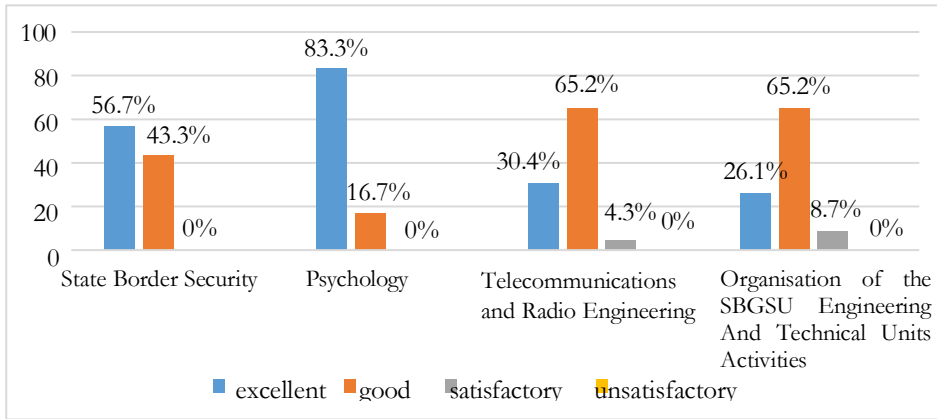
Figure 3. Availability of necessary documents and informational (methodological) materials for completing the practical training program (%).



Source: authors' own concept

A logical connection to the previous question is the responses regarding the assessment of the quality of preparation for the practical skills improvement activities by the faculty command staff and the responsible department. 49.1% of respondents rated this indicator as excellent, 47.6% of cadets gave it a 'good' rating, and 3.3% indicated a satisfactory quality of preparation for the practical skills improvement activities by the faculty command staff and the responsible department. There were no unsatisfactory ratings (see Fig. 4).

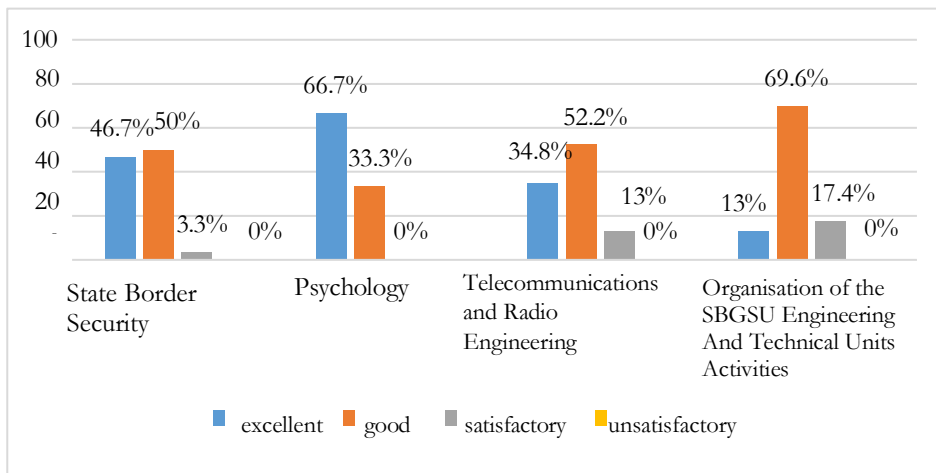
Figure 4. Quality of preparation for the practical skills improvement activities by the faculty command staff and the responsible department.



Source: authors' own concept

The effectiveness of the practical training also depends on the quality of the organization of activities by the unit (institution) responsible for conducting the training. The results of our study showed that the majority of respondents rated the quality of the organization of activities in the units (institutions) as excellent (40.3%) and good (51.3%), while 8.4% rated it as satisfactory (see Fig. 5).

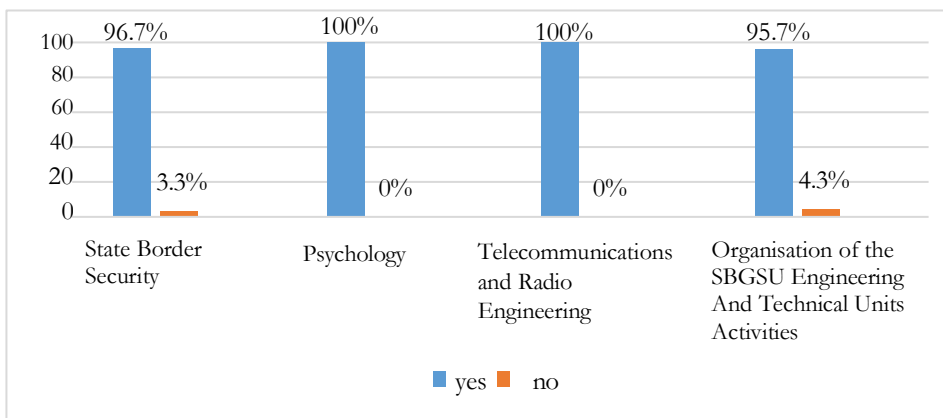
Figure 5. Quality of the organization of practical skills improvement activities by the unit (institution) responsible for their implementation (%).



Source: authors' own concept

Among the responses to the question 'Did the unit (institution) leader provide you with adequate conditions for carrying out the practical skills improvement activities?' the majority of responses were affirmative (98.1%). However, in the detailed responses, cadets noted that not all leaders were able to devote sufficient attention to the trainees due to their official duties (such responses averaged 1.9%) (see Fig. 6).

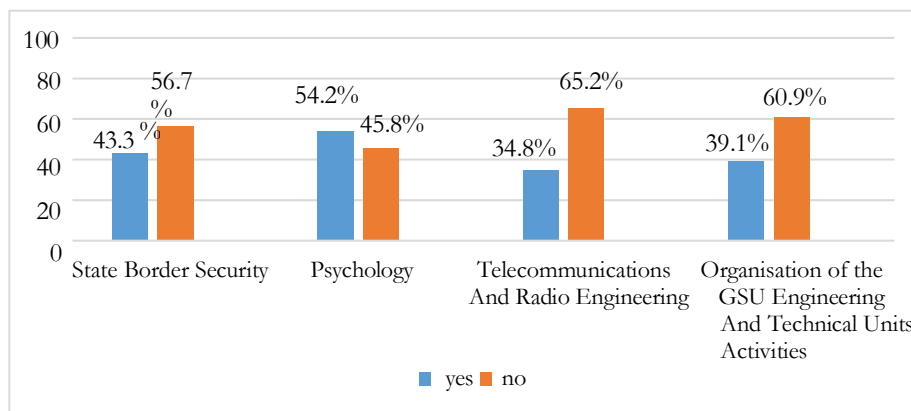
Figure 6. Provision of adequate conditions for the implementation of the practical training program by the unit (institution) command (%).



Source: authors' own concept

Analysis of the responses to the question 'Were you involved in tasks not foreseen by the program during the execution of the practical skills improvement activities?' showed that 42.9% gave an affirmative answer, which indicates certain miscalculations and gaps in the organization of the training and points to ways of improving the practical training of cadets (see Fig. 7).

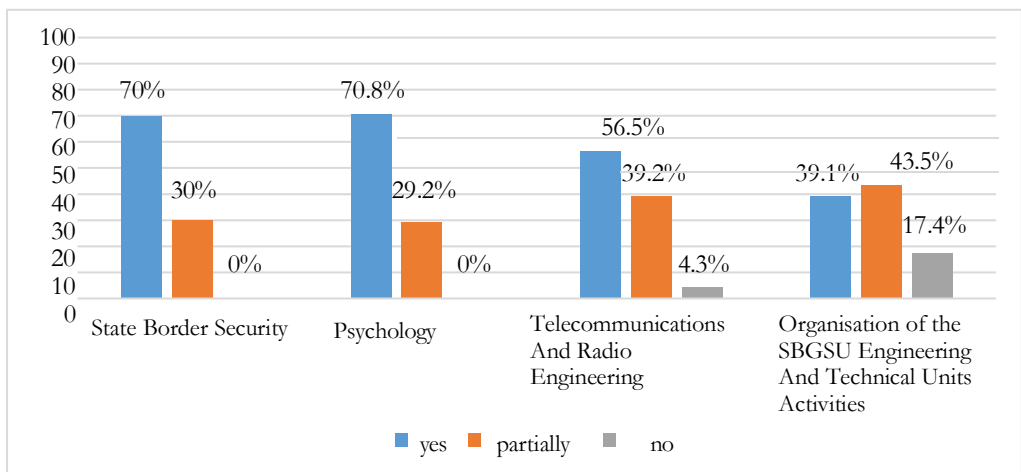
Figure 7. Involvement in tasks not foreseen by the practical training program (%).



Source: authors' own concept

During the survey, it was important to determine whether cadets had the opportunity to apply their theoretical knowledge in practice according to the position in which they were undergoing their practice. In total, 94.6% of respondents rated this opportunity positively (yes – 59.1% and partially – 35.5%). However, 17.4% of cadets studying under the Educational and professional programme 'Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities' gave a negative response. A detailed analysis of the open-ended responses from the respondents indicated that the main issue was the insufficient amount of time spent in the sections of the Department of Armament and Engineering and Technical Support of the National Academy of the State Border Guard Service of Ukraine, which did not allow them to fully study the specifics of the work in a particular section (see Fig. 8).

Figure 8. Opportunity to consolidate theoretical knowledge in practice in accordance with the position of the trainee (%).



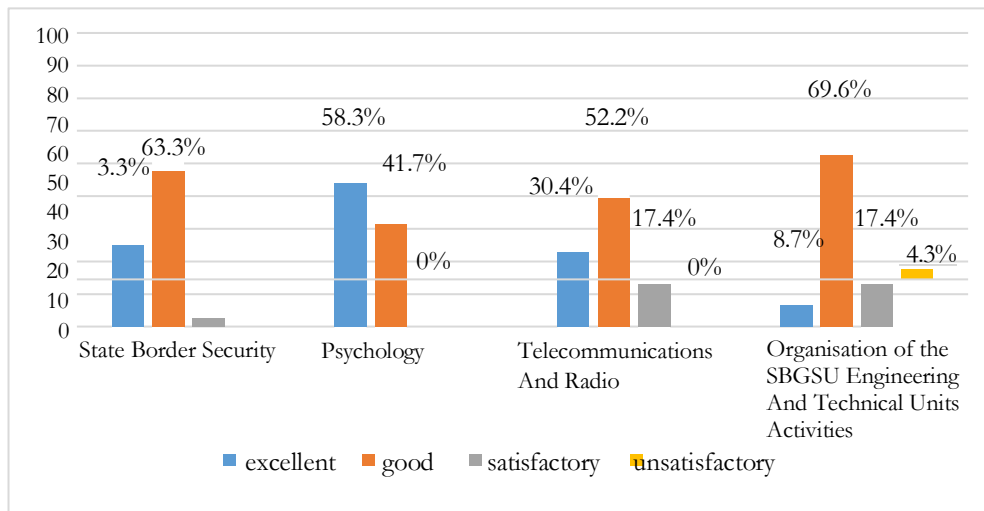
Source: authors' own concept

The responses to the question regarding the self-assessment of the practical skills acquired by cadets during their practice are particularly interesting: 32.7% of cadets rated their skills as excellent, 56.7% rated them as good, 9.5% considered their practical skills satisfactory, and 1.1% rated themselves as unsatisfactory.

Despite the predominance of positive assessments regarding the overall level of practical skills, the negative assessments are primarily linked to individual characteristics of the cadets and the conditions under which the educational process is conducted at the National Academy of the State Border Guard Service of Ukraine (see Fig. 9). Since the obtained data may

be inflated due to social desirability bias, they were verified during the defense of the practical training reports.

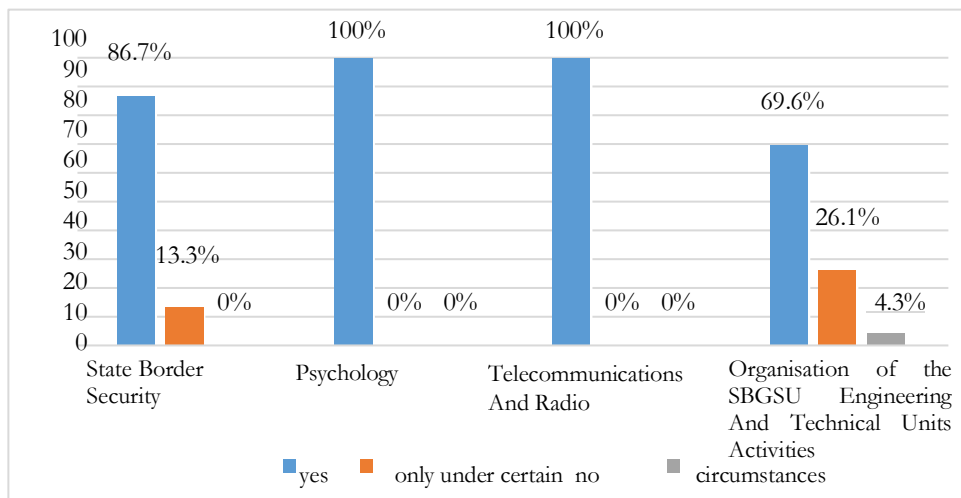
Figure 9. Self-assessment of the level of acquired practical skills (%).



Source: authors' own concept

During the survey, it was important to determine whether it would be advisable to conduct activities in a similar format in the future. 89.1% of the respondents gave a positive answer, confirming the importance and necessity of organizing practical training at the National Academy of the State Border Guard Service of Ukraine. Unfortunately, about 11% of the respondents believe that such activities are either unnecessary (1.1%) or should only be conducted under certain conditions (9.9%) (see Fig. 10).

Figure 10. The advisability of conducting activities in a similar format in the future (%). Fig. 9. Self-assessment of the level of acquired practical skills (%).



Source: authors' own concept

It should be noted that the survey allowed for a thorough analysis of the attitude of fourth-year cadets to the current problem of improving practical skills at a higher military educational institution, primarily in terms of their views on the organisation and conduct of activities aimed at improving leadership skills and professional competencies. The questionnaires were developed taking into account the specifics and peculiarities of cadets' education at the National Academy of the State Border Guard Service of Ukraine.

In general, the cadets had a positive and frank attitude to the survey, actively expressing their own point of view, as evidenced by the large number of alternative choices, the completeness of the questionnaires in general, and the writing of personal truthful information. It is obvious that the cadets perceived the survey as an opportunity to raise problematic issues of organising educational activities and practical training for discussion at the level of the National Academy of the State Border Guard Service of Ukraine command staff.

As a whole, the analysis of the results of the survey shows a positive perception of the events aimed at improving leadership skills and professional competences by the fourth-year cadets. According to 89% of respondents, similar events should be held in the future; the command staff of the faculties and responsible departments did sufficient work on the organisational and methodological support of the events. However, the programme and content of the events, as well as their information and methodological support, need to be improved and specified.

To obtain an objective assessment of the effectiveness of the proposed experiment, we conducted a statistical analysis of performance at the beginning and at the end of the experiment.

For the statistical verification of the homogeneity of the indicated groups, the Student's *t*-test Criterion was applied (Rudenko & Rudenko, 2009). Its calculation formula for independent samples of different sizes is as follows:

$$t_{emp} = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{(n_1 - 1) \cdot s_1^2 + (n_2 - 1) \cdot s_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}, \text{ where } \overline{X}_1 \text{ and } \overline{X}_2, s_1^2$$

and s_2^2 , n_1 and n_2 are the statistics of the first and second samples, respectively. Calculations were carried out using EXCEL software, and the results are presented in Table 3. All assumptions of this criterion were adhered. The statistical hypotheses were formulated as follows:

H_0 - differences between the control and experimental groups are not statistically significant;

H_1 - differences between the control and experimental groups are statistically significant.

Table 3. Comparison of cadets' performance and quality of knowledge based on the results of practical training defense at the beginning and end of the experimental study. Fig. 9. Self-assessment of the level of acquired practical skills (%).

| Cadets' performance and quality of knowledge based on the results of practical training defense | At the beginning of the experiment | | | | After the experiment | | | | Dynamics | |
|---|------------------------------------|-------|-----------------------------|-------|------------------------|-------|-----------------------------|-------|----------------------|----------------------|
| | Control group n=109 | | Experimental group n=100 | | Control group n=109 | | Experimental group n=100 | | C. group n=109 | E. group n=100 |
| | n | % | n | % | n | % | n | % | | |
| A | 16 | 14,68 | 11 | 11,00 | 19 | 17,43 | 56 | 56,00 | +2,75 | +45,00 |
| B | 18 | 16,51 | 20 | 20,00 | 30 | 27,52 | 37 | 37,00 | +11,01 | +17,00 |
| C | 42 | 38,53 | 32 | 32,00 | 47 | 43,12 | 6 | 6,00 | +4,59 | -26,00 |
| D | 26 | 23,85 | 29 | 29,00 | 12 | 11,01 | 1 | 1,00 | -12,84 | -28,00 |
| E | 7 | 6,42 | 8 | 8,00 | 1 | 0,92 | 0 | 0,00 | -5,50 | -8,00 |
| Performance rate | 100,00% | | 100,00% | | 100,00% | | 100,00% | | | |
| Quality | 69,72 | | 63,00 | | 88,07 | | 99,00 | | | |
| Average grade | 3,59 | | 3,53 | | 3,76 | | 4,25 | | | |
| t_{emp} | 0,204 | | | | 1,731 | | | | | |
| $t_{crit}(\alpha \leq 0,1)$ | 1,71 | | | | | | | | | |

Source: authors' own concept

Statistical verification confirmed that at the beginning of the experiment, differences between the control and experimental groups were not statistically significant, as the empirical t value was lower than the critical value.

After the experiment, measurements confirmed statistically significant differences between the control and experimental groups. In particular, the number of cadets with an excellent grade (A) in the experimental group increased substantially (from 11% to 56%), while the number of cadets with a satisfactory grade (E) decreased (from 8% to 0%). In contrast, in the control group, no significant changes in cadets' performance and knowledge quality were observed.

Discussion

The results of the experiment to improve the practical training of cadets were discussed at the roundtable. The roundtable was attended by representatives of the Educational Department, Chiefs of Departments (Units) where graduates received practical training, Chiefs of Relevant Departments, Deputy Chiefs (Deputy Deans) of the Faculties of State Border Security and Operational and Service Activities Support for Educational and Methodological Work, as well as active cadets who participated in the experiment. The purpose of the roundtable was to exchange experience on the implementation of the experiment's tasks at the designated practice sites; to identify positive and negative aspects of the organisation and implementation of the experiment; to formulate directions for further work to improve the practical component of educational and professional programmes.

During the round table, participants listened to presentations from cadet graduates studying under the educational and professional programmes 'State Border Security,' 'Psychology,' 'Organisation of the State Border Guard Service of Ukraine Engineering and Technical Units Activities,' and 'Telecommunications and Radio Engineering' on the results of their practical training. During these presentations, they provided reports on the implementation of the practice programs, shared their views on the positive and negative aspects of the conducted activities, and offered suggestions for improving work in the specified area. Chiefs of the units where the cadets underwent practical training provided their assessments of the conducted activities and actively participated in the discussion of the results of the experiment.

Overall, the cadets supported the continuation of practical training at the National Academy of the State Border Guard Service of Ukraine. The experience gained provided an opportunity to form and reinforce in practice the professional knowledge, skills, and competencies acquired during the theoretical

training of higher education students, as well as to improve the leadership qualities and organizational abilities of future border guard officers.

Among the problematic issues and drawbacks identified during the implementation of such activities, the following were highlighted:

1. During the announcement of the 'Air Alert' signal, practical training was suspended, which resulted in insufficient time for gaining practical experience in certain departments (services).

2. The involvement of the permanent chiefs of departments (services), where the cadets underwent practical training, in fulfilling their duties, particularly related to preparing for the execution of tasks by combat units.

3. During practical training, gaps in the cadets' theoretical knowledge were identified, particularly regarding the understanding of key regulatory documents and legal acts.

4. Insufficient time for full mastery of the practical training program.

5. High level of psycho-emotional stress on cadets.

6. Narrow specialization of the practice, limiting the versatility of experience.

7. Additionally, during the organization and implementation of the practical training, a number of risks and constraints were identified that may affect its effectiveness:

8. Limitations of realism in the training environment: Despite modernization, the Academy's training facilities cannot always fully replicate real combat conditions or the specific nature of tasks in operational and tactical activities.

9. Risk of a formal approach: There is a threat that practical sessions may become merely formal exercises if they are not based on current combat experience and analysis of real State Border Guard Service operations.

10. Lag behind operational changes at the combat situation and border units' practical experience: The situation at the border and in combat zones changes extremely rapidly, and practical training programs may not be updated in a timely manner.

11. Resource limitations: The Academy's material and technical base does not always allow for full use of the latest equipment, weapons, and communication systems that are actually deployed on the front line.

12. Safety considerations: Beyond the risk of missile attacks, the use of combat equipment, firearms, explosives, and pyrotechnic devices during training introduces additional risks of injury.

13. Dependence on personnel capacity: The quality of practical training directly depends on the experience and qualifications of the supervisors at the training sites.

Overall, the results of the research indicate a general satisfaction among the cadets with the outcomes of additional practical training activities at the higher education institution. Taking into account the feedback of cadets, academic staff, chiefs of units, the following proposals have been formed:

1. Continue the implementation of the experiment to improve the practical training of cadets.

2. Increase the duration of practical activities from one week to two weeks for each cadet.

3. Plan practical training activities throughout the semester, rather than for a month.

4. Include social and consulting centers for psychological counselling in the city of Khmelnytskyi in the practical training departments for cadets studying under the educational and professional programme 'Psychology'.

5. Involve cadets at the Military Lyceum of the State Border Guard Service of Ukraine as assistants to the course instructors for the subjects 'Defending Ukraine' and 'Physical Training,' and calculate their amount based on the number of platoons.

6. During practical training activities, provide cadets with the opportunity to attend important classes (practical, seminar, modular control, and written tests, etc.) according to the class schedule.

7. Continuously update training programs to incorporate the latest models of weapons, equipment, communication systems, and combat experience.

8. Involve officers with combat experience and relevant stakeholders in the teaching process.

9. Develop partnerships with foreign training centers to facilitate experience exchange.

10. Based on the results of the experiment, a comprehensive report was prepared and provided to all participants for consideration and for improving the educational process.

The procedure for organizing the study and the topic of the article were previously agreed with the Committee on compliance with Academic Integrity and Ethics of the Bohdan Khmelnytskyi National Academy of the State Border Guard Service of Ukraine (Khmelnytskyi, Ukraine). Also this study followed the regulations of the World Medical Association Declaration of Helsinki. Informed consent was received from all participants who took part in this study.

Conclusions

The conducted research confirms that practical training is a key factor in the formation of professional competence, leadership qualities, and the readiness of future border guard officers to perform their duties in the face of contemporary challenges and threats. The experimental assessment of the organization of practice within the higher education institution showed positive results: the majority of cadets highly evaluated the level of preparation, the availability of necessary materials, and the effectiveness of the organization of activities.

The positive aspects of the experiment included: clear planning and communication with the cadets regarding the objectives of the practice; involvement in practical training in positions corresponding to the professional orientation; the opportunity to consolidate theoretical knowledge through practical activities; and the development of leadership and organizational skills.

At the same time, a number of issues were identified that require resolution: limitations on access to certain service documents, insufficient time in some units for a thorough mastery of the material, and the need to improve the informational and methodological support of the practice.

Based on the obtained data, it is proposed to: continue the experimental activities; increase the duration of the practice; expand the practical training bases; and flexibly integrate practice into the overall educational process. Thus, the experience of organizing the practical training of cadets within the higher education institution is positive, promising, and should take into account the specifics of each educational and professional program me.

The conducted research does not cover all aspects of the issue. Further attention and adjustments are needed in the organizational, managerial, and methodological aspects of practical training, the adaptation of programs to modern conditions, and the development of individual educational trajectories for cadets.

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Conflict of Interest

The authors declare that there are no conflicts of interest.

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