EXPERIMENTAL RESULTS ON THE DEVELOPING PERSONAL SECURITY SKILLS OF FUTURE BORDER GUARD OFFICERS

INTRODUCTION
For confirming the effectiveness of the methods of developing personal security skills of future border guard officers, various diagnostic methods were introduced, which allowed to prove the effectiveness of pedagogical conditions for the development of personal security skills of future border officers and consequently to adjust the methods of their further implementation. At this stage, an expert assessment and observation by the chiefs of training courses, study groups and scientific and pedagogical staff of the Personal Security and Tactical Special Training Department was being performed. In general, the effectiveness of research was monitored by the main tasks set at each stage of the experimental study. Various aspects of pedagogical research in military formations are reflected in the works of Galimov (2004), Ishchenko (1999), Stavytsky (2019), Miroshnichenko (2019), Torichny (2012) and others. The scientific aspects, conclusions and recommendations stated in the above and other scientific papers are of great value for solving the problems of our study. In the works of modern researchers, some aspects on the problem of personal security skills development of future border guards have been already studied: the essence of security in service activity (ANDROSIUK, 1996), socio-economic skills (DIAK, 2020), O. Torichny military and special skills (TORICHNY, 2012).

AIM AND TASKS
The purpose of the article is to verify the effectiveness of pedagogical conditions for the development of personal security skills of future border guards.

RESEARCH METHODS
To confirm the effectiveness of pedagogical conditions for the development of personal security skills of future border guard officers while studying professionally oriented disciplines, various diagnostic techniques were introduced. It allowed to test the effectiveness of pedagogical conditions for the development of personal security skills of future border guard officers and adjust their implementation, respectively. An expert assessment and observation by the chiefs of training courses, study groups and scientific and pedagogical staff of the Personal Security Department was being conducted as well.

To diagnose the indicators of the motivational and incentive criterion, the adapted methods recommended by Demianuik (2010) were used: the methods for determining the motivation of professional training and for studying the motivational sphere of cadets.
assessments of the scientific and pedagogical staff, self-assessments of cadets, generalization of the results of individual interviews and surveys were also taken into account.

To diagnose the indicators of behavioral and activity criteria, as at the beginning of the experiment, practical tasks in accordance with the requirements that must be met at this stage of training, the cadets' personal security skills in accordance with the curricula of professionally oriented disciplines were used. That is, the development of indicators of behavioral and activity criteria was determined on the basis of estimating the grade point average on professionally oriented disciplines, the results of cadets' taking the practical part of exams in professionally oriented disciplines, professional role-playing games in situational scenarios with weapons, service exercises, materials of practical training at the border of the third and fourth-year-cadets, on the basis of transfer characteristics on cadets.

In order to diagnose the indicators of the resultative and perspective criterion, creative test tasks were used to identify potential opportunities for the development, improvement and application of personal security skills, analysis of references on graduates, analysis of various documents, journals, observation diaries of supervisors, teaching staff and personal observations.

Methods of rating, independent characteristics, observation were also used. We took into consideration the fact that test tasks were used at all stages of the educational process. With their help preliminary, current, thematic and final control of knowledge and skills of cadets was carried out. Estimation of the cadets' academic achievements involves the analysis of the acquisition of the program content components by each cadet: knowledge is assessed on the basis of the characteristics of answers, quality and level of mental operations mastering; skills were assessed according to the degree of subject and professional skills development (the cadet can perform the tasks according to the model, in standard situations, in non-standard conditions). In view of this, diagnosing the indicators of the resultative and perspective criterion of the personal security skills development is mainly integrative and prognostic in nature and is a rather complex procedure.

**DISCUSSION**

During the formative stage of the experiment, its results in control group (CG) and experimental group (EG) were compared separately for each of the criteria, as well as for the integral indicator of efficiency, namely a complex criterion for the development of cadets' personal security skills. The composition of the control and experimental groups was determined according to the general population by the following methods:

- cluster sampling, when the participants of research were selected not only like individual respondents, but also teams (in our case - study groups of cadets) with the subsequent selection of cadets;
- quota sampling, when cadets were selected for the experimental and control groups in compliance with quotas (State Border Security Faculty, Law Faculty and the Faculty of Operational and Service Activities, training course - second and third, gender - male). The recommendations of the scientific and pedagogical staff and commanders of cadets units were taken into account (GRIAZNOV, 2004).

Paying attention to this sample scope (number of cadets of experimental and control groups), which ensures representativeness of data, 247 second- and third-year cadets of the Faculty of State Border Security, the Faculty of Law, the Faculty of Operational and Service Activities were involved in the research. They were divided into two experimental groups (group A - a total of 126 cadets, of which: EG 1 - 62 cadets of the State Border Security Faculty, EG 2 - 64 cadets of the Faculty of Law) and two control groups: (group B - total 121 cadets), of which CG 1 - 61 cadets of the State Border Security Faculty, KG 2 - 60 cadets of the Faculty of Operational and Service Activities.

The value of the sample totality was determined based on such parameters as the value of the sample population, the value of the general population, the percentage of selection (GRIAZNOV, 2004).
Besides, the task of the experimental work was to verify the achievement of the goal (the level of personal security skills of future border guards), verify the feasibility of determining the directions and objectives of the result, verify the effectiveness of selection of procedural elements of the system (methods, forms, tools). The changes that resulted in the process of implementing the author’s methodology, in addition to qualitative results, were transformed into a quantitative measure of the professional readiness of cadets’ personal security skills at NASBGSU.

Since previous studies have proven the homogeneity and representativeness of the created experimental and control groups, we compare the results obtained before and after the experiment on each criterion using the methods of mathematical statistics. In particular, the motivational and incentive criteria assessed: interest in developing personal security skills; awareness of the importance of personal security skills for future professional activities; focus on success in professional activities, the desire to gain professional experience. According to the results presented in Table 1, we can state that the number of cadets with a low level of motivational and incentive criteria has decreased.

### Table 1 - Dynamics of the motivational and incentive criterion of control and experimental groups at the beginning and after the experiment, %

| Levels   | at the beginning of the experiment | EG 1 | CG 1 | EG 2 | CG 2 |
|----------|-----------------------------------|------|------|------|------|
| high     |                                   | 8,5  | 8,7  | 8,6  | 8,9  |
| average  |                                   | 40,2 | 38,5 | 40,3 | 38,2 |
| low      |                                   | 51,3 | 52,8 | 51,1 | 52,9 |

| Levels   | after the experiment              | EG 1 | CG 1 | EG 2 | CG 2 |
|----------|-----------------------------------|------|------|------|------|
| high     |                                   | 16,1 | 9,7  | 16,1 | 9,2  |
| average  |                                   | 53,8 | 39,4 | 54,3 | 40,1 |
| low      |                                   | 30,1 | 50,9 | 29,6 | 50,7 |

Source: Search data.

Behavioral and activity criteria evaluated: manifestation of activity in finding ways to solve professional situations; persistence in acquiring personal security skills; attempts to apply personal security skills in daily activities; readiness for professional difficulties. According to the results presented in Table 2, we can state that the number of cadets with a low level of behavioral and activity criteria has decreased.

### Table 2 - Dynamics of behavioral and activity criteria of control and experimental groups at the beginning and after the experiment, %

| Levels   | at the beginning of the experiment | EG 1 | CG 1 | EG 2 | CG 2 |
|----------|-----------------------------------|------|------|------|------|
| high     |                                   | 9,1  | 9,2  | 9,1  | 9,2  |
| average  |                                   | 21,8 | 24,7 | 21,9 | 24,8 |
| low      |                                   | 69,1 | 66,1 | 69   | 66   |

| Levels   | after the experiment              | EG 1 | CG 1 | EG 2 | CG 2 |
|----------|-----------------------------------|------|------|------|------|
| high     |                                   | 20,1 | 11,9 | 19,9 | 11,9 |
| average  |                                   | 44,7 | 29,5 | 44,1 | 30,5 |
| low      |                                   | 35,2 | 58,6 | 36   | 57,6 |

Source: Search data.

Resultative and perspective criterion estimated: the ability to objectively assess personal security skills; creative approach to the application of personal security skills; ability to self-improve personal security skills; tendency to the manifestation of analytical and prognostic thinking. According to the results presented in Table 3, we can state that the number of cadets with a low level of resultative and perspective criterion has decreased.
Table 3 - Dynamics according to the resultative and perspective criterion of control and experimental groups at the beginning and after the experiment,%

| Levels   | at the beginning of the experiment |   |   |   |
|----------|-----------------------------------|---|---|---|
|          | EG 1 | CG 1 | EG 2 | CG -2 |
| high     | 6,1  | 5,8  | 6,3  | 5,8  |
| average  | 18,3 | 18,3 | 18,2 | 18,1 |
| low      | 75,6 | 75,9 | 75,5 | 76,1 |

| Levels   | after the experiment |
|----------|-----------------------|
|          | EG 1 | CG 1 | EG 2 | CG 2 |
| high     | 14,4 | 8,4  | 15,1 | 8,6  |
| average  | 43,7 | 38,9 | 42,7 | 38,7 |
| low      | 41,9 | 52,7 | 42,2 | 52,7 |

Source: Search data.

The analysis of the obtained results of the formative stage of the experiment showed that the work carried out according to the experimental methods led to positive changes. According to the results of the study we can state that the number of cadets with a low level according to the complex criterion has decreased

- in group A $\square = 28.6\%$ (increase in the number of cadets with an average level $\square = 20.3\%$ and a high level $\square = 8.3\%$);
- in group B $\square = 10.69\%$ (increase in the number of cadets with an average level $\square = 9\%$ and a high level $\square = 1.7\%$).

For a qualitative assessment of the reliability of the obtained data, the expert assessment of the work performed by specialists was of great importance. According to the results of observations, surveys and questionnaires, the experts determined that the depth of professional skills has significantly increased and a higher level of cadets’ professional skills and personal security skills development has been ensured.

A total of 12 experts from among the most experienced teachers and course supervisors evaluated each cadet of EG and CG on each indicator of the three criteria according to the three point system: 3 points - the indicator is developed, clearly expressed, is often found; 2 points - the indicator is noticeably expressed, but is not detected constantly, although there are no deviations in the negative direction; 1 point - the indicator is expressed, but is limited and inefficient. The level of personal security skills of future border guards for each criterion was calculated by the following formula:

$$P = \frac{S}{n \times e}$$

Where $P$ is the level of formation of multicultural competence according to the relevant criterion; $S$ - the sum of experts’ points; $n$ is the number of indicators in the relevant criterion; $e$ - number of experts.

As a result, we obtained the following data on the levels of personal security skills of future border guards in the EG and CG, according to experts. For comparison, we present them together with the data of the main diagnostic methods. The difference between the data of expert evaluation and the data obtained by the methods of basic diagnosis is in the statistical error from 0% to 5%.
Table 4 - Classification of EG and KG cadets by levels of personal security skills development of future border guard officers according to experts assessment in comparison with the main diagnostic methods

| Criterion                        | Levels | EG (group A) | CG (group B) |
|----------------------------------|--------|--------------|--------------|
|                                  |        | experts’ assessment | main diagnostic | experts’ assessment | main diagnostic |
|                                  |        | abs. % | abs. % | abs. % | abs. % | abs. % | abs. % |
| Motivational and incentive       | High   | 19     | 15.1  | 20     | 16.1  | 10     | 8.3   | 11    | 9.5   |
|                                  | Average| 65     | 51.6  | 68     | 54.1  | 48     | 39.7  | 48    | 39.8  |
|                                  | Low    | 42     | 33.3  | 38     | 29.9  | 63     | 52.1  | 61    | 50.8  |
| Behavioral and activity          | High   | 22     | 17.5  | 25     | 20.0  | 12     | 9.9   | 14    | 11.9  |
|                                  | Average| 58     | 46.0  | 56     | 44.4  | 38     | 31.4  | 36    | 30.0  |
|                                  | Low    | 46     | 36.5  | 45     | 35.6  | 71     | 58.7  | 70    | 58.1  |
| Resultative and perspective      | High   | 21     | 16.7  | 19     | 14.8  | 11     | 9.1   | 10    | 8.5   |
|                                  | Average| 56     | 44.4  | 54     | 43.2  | 44     | 36.4  | 47    | 38.8  |
|                                  | Low    | 49     | 38.9  | 53     | 42.1  | 66     | 54.5  | 64    | 52.7  |
| Complex                          | High   | 20     | 15.9  | 21     | 17    | 12     | 9.9   | 13    | 10    |
|                                  | Average| 59     | 46.8  | 60     | 47.2  | 40     | 33.1  | 34    | 34    |
|                                  | Low    | 47     | 37.3  | 45     | 35.8  | 69     | 57.0  | 74    | 54    |

Source: Search data.

RESEARCH RESULTS

Thus, the results of the experiment as a whole, in particular the analysis of the effectiveness of the application of certain pedagogical conditions and methods of their implementation at higher military educational establishment allow us to draw the following conclusions:

- in general, there were qualitative changes in the experimental and control groups, but there were significant changes in all EGs, in contrast to CG, where changes occurred naturally;
- the formation of personal security skills of future border guards in the EG is due to: modeling of special educational situations aimed at understanding the importance of personal security skills for operational and service activities performing;
- ensuring continuity and gradual formation of personal security skills; using the capabilities of the discipline "Personal Security and the Use of Force" as a basic discipline for the development of personal security skills and the actualization of interdisciplinary integration of disciplines;
- the changes that have resulted among the representatives of EG are the most indicative of the high level of personal security skills development of cadets who studied according to the author’s model of personal security skills development of future border guards.

CONCLUSIONS

Thus, the analysis of the results of the experimental study testifies to the effectiveness of the pedagogical conditions developed and implemented in the educational process of NASBGSU for the formation of personal security skills of future border guards and confirms the hypothesis of the study empirically. The subject of promising research may be to clarify the forms and methods of developing skills in personal security of future border guard officers, a detailed study of the possibilities of their use at each stage of the proposed method.

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Experimental results on the developing personal security skills of future border guard officers

Resultados experimentais sobre o desenvolvimento de habilidades de segurança pessoal de futuros oficiais de guarda de fronteira

Resultados experimentales sobre el desarrollo de las habilidades de seguridad personal de los futuros oficiales de la guardia de fronteras

Resumo

O objetivo do artigo é verificar a eficácia das condições pedagógicas para o desenvolvimento de habilidades de segurança pessoal dos futuros guardas fronteiriços. Diversos métodos diagnósticos, introduzidos na pesquisa, permitiram comprovar a eficácia da aplicação das condições pedagógicas desenvolvidas e ajustar os métodos de sua posterior implementação. Muita atenção foi dada à comparação dos resultados no controle e nos grupos experimentais separadamente para cada critério, bem como para o critério complexo. Os autores generalizaram, sistematizaram e analisaram teoricamente os resultados do trabalho experimental. A análise dos resultados da pesquisa experimental atesta a eficácia das condições pedagógicas desenvolvidas e implementadas no processo educacional da Academia Nacional do Serviço estadual de Guarda de Fronteira da Ucrânia (NASBGSU) para o desenvolvimento de habilidades de segurança pessoal de futuros guardas fronteiriços.

Palavras-chave: Pesquisa experimental. Futuros guardas fronteiriços. Habilidades de segurança pessoal. Critérios. Condições pedagógicas.

Abstract

The purpose of the article is to verify the effectiveness of pedagogical conditions for the development of personal security skills of future border guards. Various diagnostic methods, introduced in the research, allowed to prove the effectiveness of the application of the developed pedagogical conditions and to adjust the methods of their further implementation. Much attention was paid to the comparison of results in the control and experimental groups separately for each criterion, as well as for the complex criterion. The authors generalized, systematized and theoretically analyzed the results of experimental work. The analysis of the results of the experimental research testifies to the effectiveness of the pedagogical conditions developed and implemented in the educational process of the National Academy of the State Border Guard Service of Ukraine (NASBGSU) for the development of personal security skills of future border guards.

Keywords: Experimental research. Future border guards. Personal security skills. Criteria. Pedagogical conditions.

Resumen

El propósito del artículo es verificar la efectividad de las condiciones pedagógicas para el desarrollo de las habilidades de seguridad personal de los futuros guardias de fronteras. Varios métodos de diagnóstico, introducidos en la investigación, permitieron probar la efectividad de la aplicación de las condiciones pedagógicas desarrolladas y ajustar los métodos de su posterior implementación. Se prestó mucha atención a la comparación de los resultados en los grupos control y experimental por separado para cada criterio, así como para el criterio complejo. Los autores generalizaron, sistematizaron y analizaron teóricamente los resultados del trabajo experimental. El análisis de los resultados de la investigación experimental da testimonio de la eficacia de las condiciones pedagógicas desarrolladas e implementadas en el proceso educativo de la Academia Nacional del Servicio Estatal de Guardia de Fronteras de Ucrania (NASBGSU) para el desarrollo de las habilidades de seguridad personal de los futuros guardias de fronteras.

Palabras-clave: Investigación experimental. Futuros guardias fronterizos. Habilidades de seguridad personal. Critérios. Condições pedagógicas.