

# Formation of the Professionally Significant Skills and Competencies of Future Police Officers during Studying at Higher Educational Institutions

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**Abstract:** The regulatory documents and scientific literature, which highlights the specifics of the study of the future officers of the Ukrainian National Police, were investigated. The analysis of the activity of police officers, who had to deal with armed and aggressive offenders, was analyzed. The conducted research substantiated the original methodology of the preparation of future police officers for contact with an offender, armed with a cold weapon, and tested its efficiency. The essence of the original methodology is to form the future police officers' professionally significant skills and competencies to apply coercive measures on the basis of the acquired special theoretical knowledge, introduced into the educational process of tactical and special training of simulated situational tasks and to develop professionally important psychological qualities. The study involved cadets, having entered educational institutions in 2016 (n=227), who were studying at the National Academy of Internal Affairs (Kyiv, Ukraine). The experimental (EG, n=111) and control (CG, n=116) groups were formed. The efficiency of the original methodology was evaluated by the indicators of theoretical and practical readiness of cadets and by the psychological qualities' development level. The results of the experiment showed the efficiency of the original methodology in comparison to the traditional one: theoretical preparedness of the EG cadets was improved by 46.8%, CG – by 2.4%; practical readiness of the EG cadets was increased by 37.3%, CG – by 5.1%. The high level of cadets' professionally significant skills acquired during studying contributed to the improvement of the efficiency of their future professional activity.

**Keywords:** *police officer; cadet; professionally significant skills and competencies; an offender, armed with a cold weapon.*

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## 1. Introduction

The efficiency of the official activities of the Ukrainian National Police officers is determined by their level of professional skills and competencies (Bondarenko, 2018; Ostapovich, et al., 2020; Shvets, et al., 2020; Valieiev, Tohochynskyi, Pekarchuk, Sobakar, & Iermakov, 2019). From the didactic perspective, the process of preparing future specialists for the effective performance of their professional activities is considered by scientists as a gradual and consistent transition from theoretical knowledge and understanding of basic laws, rules, and conditions of activity to the formation of appropriate abilities and skills (Yavorska, & Rudnytskyi, 2013). The skills and competencies necessary for future police officers in order to carry out their duties effectively are developed during studying at higher educational institutions.

The Law of Ukraine “On the National Police” (2015) defines that the training of future police officers is carried out at higher educational institutions with specific training conditions on the basis of an educational contract concluded between the educational institution, the relevant police authority, and a cadet. The study period is 3-4 years, depending on the specialty.

The analysis of the tasks that police officers have to perform during their official activities indicates that they contact with armed and aggressive offenders (Anderson, Litzenberger, & Plecas, 2002; Kryvolapchuk, Kulyk, Barko, Kalynovskyi, & Kosiak, 2020). First, it concerns the officers of special units, criminal police, and patrol police. The specifics of their activities have a number of features that lead to negative emotional states, disorders of mental processes and necessitates the development of future police officers’ professionally important qualities (volitional, personal, communicative, physical qualities, etc.), and the formation of skills and competencies to apply coercive measures in risk conditions (Aleksandrov, Okhrimenko, & Drozd, 2017; Bondarenko, et al., 2020). A detailed study of the situations of armed resistance indicates frequent assaults on police officers with the use of a cold weapon (usually knives). In any situation with the use of a weapon or repelling an attack of an armed offender, a police officer has a limited time. The awareness of probable defeat is a powerful psychological factor that disrupts a police officer’s actions. Therefore, in most cases, police officers faced difficulties during the assault of an offender and were unable to take protective action and apply coercive measures efficiently. It is partly conditioned by the insufficient development level of police officers’

professionally significant skills and competencies to perform protective actions. It is also caused by the stress to a large extent, which leads to muscular restraint, inattention, the lack of psychological readiness to apply coercive measures in extreme conditions (Chukhrayeva, 2016; Gül, & Delice, 2011).

This is confirmed by the statistics on the deaths and injuries of police officers during the performance of official duties around the world. The United Kingdom is said to be the Western European country with the highest number of police officers killed on duty. More than 14,000 police officers are assaulted annually, and more than 3,000 get grievous bodily harm because of the use of cold and firearms in this country. According to the experts, in most cases, the police officers, who were performing official duties alone, were assaulted (Barrett, Miguel, Hurd, Lueke, & Tan, 2003; Hoggett, Redford, Toher, & White, 2019).

The results of the analysis of the assaults on U.S. police officers state the highest number of them in medium and big cities, the smallest – in rural areas. In total, 30% of all assaults happened using different types of a cold weapon. Only 30% of police officers managed to use firearms to repel the armed assault. Among the U.S. police officers killed while performing their official duties, 94.5% died from gunshot wounds, 5.5% died by a cold weapon and other materials at hand (Pașniciuc, 2017).

In Ukraine, a large number of officers are also killed while performing official duties. It was stated that since gaining independence, 1,671 people had been killed, among them 455 – since the beginning of hostilities in the east of Ukraine. More than 7.5 thousand had been injured. Police officers were usually assaulted in the evening and at night: 32% upon arrival on the site; 12.5% – during transportation of detainees; 11.8% – when pulling drivers over; 8.3% – when checking documents of suspected individuals; 26.5% – directly during the detention of people who had committed various types of offenses; 8.9% – while performing other duties. 34.7% of assaults were made using different cold weapons (Lefterov, & Tymchenko, 2002).

The conditions which involve a threat of attack are characterized as extreme. In extreme situations, the effectiveness of the police coercive measures is poor. The realities of practical activity give grounds to state that the low level of professional skills of police officers reduces the efficiency of their professional activity. This demonstrates the necessity to develop a modern effective methodology of training cadets, which would fully meet the requirements of their future professional activity.

## 2. Literature Review

The professional training of future police officers is a social and pedagogical process through which a social order for a specialist in law enforcement, capable of effectively performing the tasks and functions assigned to him as a representative of the law, is indirectly manifested and is complex pedagogical, in particular, didactic problem (Yavorska, & Rudnytskyi, 2013).

The management of the integral pedagogical process begins with designing its goals and objectives. They define the rest of its elements: the content, forms, and methods of activity of teachers and cadets. The content of the pedagogical process should ensure the fulfillment of a number of tasks which are oriented on the achievement of the stated goal. The result of the training of police officers is an increase in the level of professional readiness for the effective performance of official activities. The content of professional training significantly influences the choice of methods, forms, and technical means of training (Kohlström, Rantatalo, Karp, & Padyab, 2017). Only when the tasks, content, forms, and methods of the pedagogical process constitute a coherent logical system, when a teacher thinks over the connections between these components and selects their rational options, the desired result can be achieved. In the context of the professional training of future police officers, it is the acquisition of special knowledge, the formation of skills and competences, the development of professionally important psychological qualities.

According to the researchers (Medvedyev, & Shevchenko, 2008), the positive effects of reducing the psychological dependence of future law enforcement officers on fear of being defeated by an armed offender were indicated through the use of autogenous training methods. In the psychological literature (Medvedyev, 1996; Vihlyayev, 2005), autogenous training is interpreted as a method of psychological relief and nervous tension relieving by periodical repeating special optimistic-mobilizing formulas. A common fact for all modifications of autogenic training is that self-suggestion is performed against a specific psychophysiological state, which occurs when deep relaxation is achieved and is accompanied by the development of a light hypnotic phase state. During the phase states, the verbal stimulus acquires a particularly great influence at the conscious and subconscious levels.

The study of scientific works (Morhunov, 2014; Prontenko, et al., 2020) gives grounds to conclude that in the risk conditions, it is important for law enforcement agencies to select and use the physical impact means

appropriate to the degree of threat at the right time. According to a number of scientists (Mackay, 2017; Posokhova, 2016), the formation of professionally significant skills and competencies of future specialists is more effective due to the practical orientation of the educational process and the use of innovative teaching methods. Concerning this, the scientists (Alexandrov, Okhrimenko, Luta, Zhukevych, Okhrimenko, Prontenko, 2019; Morhunov, 2014) recommend introducing situational tasks, developed on the basis of real-life situations, among which there are both standard, most common, and problematic situations, into classes in tactical and special training of cadets. According to other scientists (Mohammadi, & Sahebazamani, 2012), the use of metal models of knives with blunt edges in the educational process contributes to the formation of psychological readiness for effective activity in the risk conditions.

The scientists (Anderson, Litzenberger, & Plecas, 2002; Ostapovich, et al., 2020) argue that protecting public safety and order, considerable attention span, ability to switch it quickly, high sensitivity of visual and auditory analyzers are of great importance. It is proved that the properties of attention do not exist in isolation. They are closely interconnected and are the aspects of a single act of attention that do not remain constant but that is refined with human development. If an officer has the habit of always being attentive developed, then attention becomes the property of an individual. This property is called attentiveness. It is associated with persistent and focused attention, the ability to notice the objects and phenomena's important features. The attentiveness is not only the basis of sensitivity and tact towards people and should be an integral quality of a police officer but also helps to identify the offender's preparatory movements that precede an attack and make the right decision (Prontenko, et al., 2020; Shvets, et al., 2020).

Studying the pedagogical conditions for the development of professional skills of future police officers in the process of tactical and special training, the scientist (Faull, 2017) classified the skills into simple and complex (separate automated movements are an example of simple skills; firing a gun is an example of complex skills); in terms of content and functional features (document management skills, skills to analyze the situation and the results of actions); in terms of psychophysical characteristics – sensory (such as observation, review, document verification, identification of the interlocutor's peculiarities); mental (quick assessment of the situation, decision making, map reading, planning); motor (performing detention or self-defense techniques, movement of hands during a surface inspection, rapid snatching of a gun from the holster and putting it on an

alert); comprehensive (communication skills, emergency response, computer skills). The scientists (Bondarenko, et al., 2020) classify general professional skills in the areas, necessary for a police officer to perform the duties under various circumstances and in extreme situations, into eight groups: 1) skills in constant professional vigilance; 2) skills in the visual leading an offender; 3) skills in choosing tactically correct actions; 4) personal safety skills; 5) skills in maneuvering, moving during a fight; 6) skills to behave dealing with a criminal; 7) the ability for collective interaction; 8) skills in the negotiation with an offender (communication skills).

In the context of our study, it should be noted that dealing with an offender armed with a cold weapon requires a sufficient level of psychological readiness and a number of professionally significant skills and competencies, including predicting the development of a situation; determining the degree of threat; enforcement of police coercive measures (physical force, special means, and firearms). From a pedagogical perspective, the achievement of the above is possible provided a sufficient level of theoretical knowledge and the use of key methodological approaches to studying.

The development of a training methodology that will provide cadets with the necessary theoretical knowledge, promote the development of professionally significant skills and increase the level of psychological readiness for dealing with an armed and aggressive offender is a relevant area of scientific research.

**The aim of the study** is to investigate the efficiency of the methodology of preparation of future police officers for dealing with an offender armed with a cold weapon.

**The objectives** are 1) to substantiate the original methodology of preparation of future police officers for dealing with an armed offender; 2) to investigate the influence of the original methodology on the dynamics of indicators of theoretical and practical training of cadets and the level of development of professionally important psychological qualities.

### 3. Methodology

To achieve the aim of the research, a complex of modern general scientific methods, including theoretical (the method of conceptual-comparative analysis, structural and system analysis, synthesis, generalization), empirical (questioning, testing, pedagogical observation, pedagogical experiment), the methods of mathematical statistics, was used.

The questioning was conducted in order to determine the factors influencing the offender's decision to attack, to identify the preparatory movements that precede an attack, to define the most common methods of attack, and the methods of protection performed by police officers. The questionnaire involved the officers of practical units (n=115) who had to deal with armed and aggressive offenders when performing official duties.

A pedagogical experiment was organized to test the influence of the classes by the original methodology on the effectiveness of the formation of the cadets' professional skills and competencies to repel an attack of an offender armed with a cold weapon. The experimental studies were conducted in the National Academy of Internal Affairs (Kyiv, Ukraine), involving the cadets, having entered educational institutions in 2016 (n=227), who were studying in the specialty "Law Enforcement" in the "Civil Security" field of knowledge of "Criminal Police" specialization. The experimental (EG=111) and control groups (CG=116) were formed. The formation of control and experimental groups was carried out by the method of random selection. The CG cadets were studying according to the traditional methodology according to the current tactical-special training program. The theoretical part of the classes was defined by terminology and a brief explanation of the rules for the technical implementation of techniques, which referred to the traditional approach to training. The practical implementation of the techniques was mostly demonstrated in the classes. The ratio of the theoretical unit to the practical one was 10/90% during the whole period of study. 10% of study time was devoted to explaining and demonstrating the features of the technical implementation of the methods of physical influence, conditions, and requirements for their application. 90% was devoted to the practical training of technical actions. The protection techniques were performed with the use of rubber knife layouts.

The original methodology involves more time for the theoretical part. The theoretical unit provided the EG cadets with knowledge of the psychological features of offenders' behavior during a clash with police officer, the identification of preparatory movements that precede an attack, the space-time characteristics of the attack actions, etc. The ratio of theoretical and practical parts was 40/60% in the first year of study; 30/70% in the second; 20/80% in the third.

In the first year of study, the practical part of the original methodology involved the study of the technique of attacking and defensive actions with the use of rubber knife layouts. In the second and third years, the cadets worked out the technical actions of applying police coercive



measures using metal knife layouts with blunted edges. At the same time, in the second year of study, 30% of the time was devoted to modeling practical situations. In the third year, 60% of the practical part of the class involved modeling of situations of armed clash; 40% – the improvement of technical actions through clashes. In addition, in the second and third years of study, the methods of verbal autogenous training were introduced into the educational process of professional and psychological training of the EG cadets.

The pedagogical experiment was carried out in 2016-2018 (from September 2016 to December 2018). The efficiency of the original methodology was evaluated by the indicators of theoretical and practical readiness, as well as the level of development of professionally important psychological qualities of cadets (the indicators of attention and neuropsychological stability). The theoretical readiness was determined by special testing in the form of a question-and-answer survey. The questions referred to the manifestation signs of the enemy's motivation for an attack, the external signs of the threat, the preparatory movements that precede an assault, the options for the measures of physical influence, etc. The survey took into account the clarity and completeness of the answers. In total, there were 50 questions presented, the maximum number of points that could be obtained was 100. The complete answer was scored by two points, the incomplete – one. If a cadet did not answer the question, one did not receive any points.

The determination of practical preparedness involved modeling a clash with an offender armed with a cold weapon. The EG and CG cadets were attacked from different distance zones (from one to eight meters) using the following methods: 1) “a stabbing attack at close range”; 2) “a stabbing attack with fast approaching”; 3) “a stabbing attack with fast approaching and grabbing clothes”. The attack was carried out by specially trained people, who were instructed on the methods, speed, and distance areas from which the attack was performed. The EG and CG cadets had to take protective actions (to apply hand-to-hand fighting techniques, special weapons, or firearms) that would be appropriate for the degree of threat. The cadets who participated in the pedagogical experiment were subjected to 20 attempts of each attack option out of three. That is, in order to determine the level of practical readiness, the EG and CG cadets had to repel 60 attacks by an offender armed with a cold weapon.

The pedagogical experiment included the following material and technical support: models of knives with blunt edges, airsoft gun (Glock 17), holster, belt system, protective equipment (plates, vests, glasses).

The professionally important psychological qualities of cadets in the studying process were determined using the following methods: the “Finding numbers” test (the indicator of “Distribution and volume of attention”); correction test of Burdon-Anfimov (“Attention span and concentration”); multi-level personal questionnaire “Adaptability”, developed by A. G. Maklakov and S. V. Chermianin (to evaluate the indicator “Nervous and mental stability”) (Yeliseyev, 2006).

The “Finding numbers” test was used to evaluate the indicator of “Distribution and volume of attention”. A blank with 25 squares and randomly put numbers from 1 to 40 (15 numbers were omitted) was used. Under test conditions, one should find and cross out the numbers, missing on the form, on the checklist as quickly as possible. The task is performed once. The execution time is 1 min 30 s. The level of development of the indicator of distribution and volume of attention was evaluated by the number of correctly crossed out numbers on the checklist on a 9-point scale. According to the points received, the professional qualification levels are distributed in the following way: the cadets who received 8, 9 points belonged to the high level; 6, 7, 8 points – sufficient; 5, 4, 3 points – satisfactory; 1 and 2 points – to the low level.

The correction test of Burdon-Anfimov enabled to evaluate the indicator of the cadets’ attention span and concentration. The levels of development of this indicator were defined as follows: the cadets whose attention span and concentration were rated as low and below average had a low level (up to 84%); the cadets with the middle level of attention span and concentration had satisfactory level (85-89 %); the cadets with the higher than the middle level had sufficient level (90-94 %); high level – 95% and more.

The multi-level personal questionnaire “Adaptability” is designed to assess the adaptive capacity of an individual, taking into account socio-psychological and some psychophysiological characteristics, reflecting generalized features of neuro-psyche and social development. The questionnaire, designed to evaluate this indicator, contains 165 questions. Determining the development level of the studied indicator, we used a scale of neuro-psyche stability, the level of development of which provides stress tolerance of officers. The survey was conducted using a special form. On the scale of this technique, the growth of the neuro-psyche stability indicator is determined by the decrease in its points. According to the points obtained, the developmental levels are distributed in the following way: the high level – from 0 to 5 points (9-10 stens); sufficient – 6-21 points (6-8 stens); satisfactory – 22-37 points (3-5 stens); low – 38 or more points (1-2 stens).

In order to determine the impact of the original methodology on the effectiveness of the official activities, we analyzed the results of armed clashes with offenders. The studies were conducted after one year of service. The behavior of police officers was analyzed on the basis of the survey. The correlation in the application of coercive measures (physical force, special means, firearms) in the process of a clash with an armed offender, the effectiveness and consequences of the measures; the actions of an offender that preceded the clash, etc.

The procedure for organizing the study, the stages, the venue, and the permission for the involvement of officers and cadets in the pedagogical experiment were previously agreed with The Committee on Compliance with Academic Integrity and Ethics of the National Academy of Internal Affairs. The Committee consisted of the leading scientists from the number of scientific and pedagogical staff of specialized departments, the scientific workers of scientific laboratories and departments of the organization of research work, organization and coordination of educational process, the workers of legal support, the specialists of the intellectual property group, and the speaker of the Parliament of cadet self-government. The prior consent to participate in the experiment was obtained from all the participants.

#### **4. Results**

The development of the original methodology was preceded by a survey of the practical units' officers who had faced or witnessed aggressively armed offenders. On the basis of the results of the questionnaire, a set of external conditions in which police officers clash with offenders and their influence on the further development of the situation was revealed; a set of preparatory movements that precede the attack and the features of their manifestation (facial expressions, pantomime, the position of hands, features of walking while approaching, etc.) was established; the criteria for assessing the degree of danger and making the right decisions, positional placement were determined. Systematizing the obtained data, a theoretical unit of methodology was structured. During the pedagogical experiment, theoretical knowledge was provided to the cadets using the methods of oral, print, and sensory transmission of information.

It was revealed that depending on the external conditions, the type of weapon, its initial placement in the hand, there are different options for attack. The most dangerous means of attacking is a stabbing attack at close range (38.2%); in the case of a bigger distance, it is a stabbing attack with

fast approaching (26.8%), as well as a stabbing attack with fast approaching and grabbing clothes (16.4%). The other types of assaults accounted for 18.6%.

The results of the questionnaire show that in 92.3% of clashes with an offender, armed with a cold weapon, police officers did not immediately notice the threat of an attack, tried to apply defensive actions only in response to the attack. And in 7.7% of situations, police officers took preemptive actions (increasing the distance, threatening the use of firearms). Using hand-to-hand combat techniques, 78.7% of officers were injured. 88.9% of police assault situations resulted in the arrest of an offender; in 11.1% cases, an offender initially managed to disappear, although, most of them were detained shortly after the incident.

Taking into account the most common and the most dangerous stabbing with a knife, a practical course of the original methodology was formed: the methods of attacking actions, which were used during training clashes, and situational tasks, which were modeled during practical classes, were developed. On the basis of the study of the peculiarities of the official activity, the level of development of the cadets' psychological qualities was evaluated by the indicators of attention, and neuro-psychic stability.

To increase the level of psychological readiness for activity in risk conditions, the original methodology involved the use of verbal methods of autogenous training in the educational process. The purpose of psychological influence on a cadet is to develop a motivational orientation to actions that are conditioned by the need to apply police coercive measures during activity in the conditions of attack by an enemy armed with a cold weapon.

The practical course of the original methodology implied the formation of professionally significant skills and competencies to apply the measures of physical influence on the basis of the acquired theoretical knowledge by applying the elements of professional modeling. The professional modeling consists in performing situational tasks – the fragments of official activities that are close to real conditions, working out different options for actions, that is, playing the roles that cadets will have to perform in future professional activity, gaining professionalism.

According to the developed methodology of the formation of professionally significant skills and competencies, the application of measures of physical influence was carried out during training clashes. In the initial stages of preparation, the original methodology involved the use of fully specified clashes, which predetermined the roles of partners (attack, defensive), the selection of techniques for the person carrying out the

attacking actions, the sequence of actions, as well as the methods of defense. After the steady implementation of protective actions, the educational process introduced partially situated clashes, which predetermined who were attacking, without indicating in which way it would be carried out. To ensure a stable formation of skills and competencies to take a reasonable risk, resulting in repelling and attack and disarming an offender, despite all the forms of counteraction, free clashes were used.

The examination of the original methodology involved testing the theoretical, practical readiness, and determining the level of the professionally important psychological qualities development at the initial and final stages of the pedagogical experiment.

The initial testing was conducted at the end of the first term (December 2016) since the determination of practical readiness required a certain level of professional skills and competencies to take coercive measures.

The final stage of the pedagogical experiment coincided with the finishing of the fifth term of the third year (December 2018). The objective of this stage was to identify the influence of the original methodology on the formation of professionally significant skills and competencies associated with the actions during an attack of an offender armed with a cold weapon, the development of psychological qualities.

The mathematical processing of the obtained data (Table 1) showed that at the initial stage of the experiment, the level of theoretical preparedness of the EG and CG cadets was not authentically different ( $p>0.05$ ) and was estimated at  $32.4\pm 2.32$  points in the EG, and  $31.7\pm 2.28$  in the CG. In general, such results indicated a low level of theoretical readiness.

The level of practical preparedness of the EG and CG individuals also did not differ authentically at the beginning of the experiment ( $p>0.05$ ). Thus, when repelling an attack in the case of a stabbing attack at close range, the effectiveness of the EG cadets accounted for  $8.2\pm 0.32$  (41%) successful clashes with 20 attacks, of the CG cadets –  $8.8\pm 0.33$  (44%). In the case of performing a stabbing attack with fast approaching, the EG cadets were defined to have  $9.5\pm 0.35$  (47.5%), the CG cadets –  $10.3\pm 0.32$  (51.5%). The effectiveness of defensive actions of the EG representatives while a stabbing attack with fast approaching and grabbing clothes accounted for  $6.9\pm 0.40$  (34.5%), CG –  $7.4\pm 0.43$  (37%) successful clashes out of 20 attacking actions. Such results are explained, first of all, by the insufficient level of cadets' preparedness for this type of attack, which is characterized by the high speed and unexpectedness of actions. The general success of clashes of the EG cadets was 41%, CG – 44.2%.

**Table 1.** *The dynamics of indicators of theoretical and practical readiness of the EG and CG cadets during the pedagogical experiment*  
*Source: Authors' own conception*

The initial stage of the pedagogical experiment				The final stage of the pedagogical experiment			
EG (n=111)	CG (n=116)	Significance level		EG (n=111)	CG (n=116)	Significance level	
Mean±S	Mean±S	t	p	Mean±S	Mean±S	t	p
D	D			D	D		
Theoretical readiness, points							
32.4±2.3	31.7±2.2	0.21	>0.0	79.2±1.8	34.1±2.0	16.3	<0.
2	8		5	9	2	0	001
Practical readiness, the number of successful clashes with 20 attacking actions							
A stabbing attack at close range							
8.2±0.32	8.8±0.33	1.31	>0.0	14.8±0.2	9.7±0.33	11.6	<0.
			5	9		1	001
A stabbing attack with fast approaching							
9.5±0.35	10.3±0.3	1.69	>0.0	16.6±0.2	11.4±0.3	13.3	<0.
	2		5	2	4	2	001
A stabbing attack with fast approaching and grabbing clothes							
6.9±0.40	7.4±0.43	0.85	>0.0	15.6±0.2	8.5±0.38	15.0	<0.
			5	8		4	001

*Legend: Mean – arithmetical average; SD – standard deviation; p – significance of difference between the indicators of EG and CG; t – the meaning of the Student's t-criterion*

The results of the final stage of the experiment showed a significant difference in the levels of theoretical and practical readiness of the EG and CG cadets. The processing of the obtained data gave grounds to state that the level of knowledge of the EG cadets increased by 46.8 points – to  $79.2 \pm 1.89$  on the average ( $p < 0.001$ ). The CG cadets were defined to have not authentic improvement in theoretical readiness ( $p > 0.05$ ). Their level of knowledge increased by only 2.4 points and reached  $34.1 \pm 2.02$ . The partial improvement was due to the experience gained during the practical implementation of physical impact measures. However, it should be noted that, in contrast to the EC cadets, the CG cadets were not able to express their opinions quickly and clearly regarding orientation in difficult situations.

The results of testing practical readiness stated the increase in the number of clashes with a positive effect on future police officers in both groups (Table 1). The effectiveness of clashes of the EG cadets while performing a stabbing attack at close range was improved authentically ( $p < 0.001$ ) and reached  $14.8 \pm 0.29$  (74%) successfully repelled attacks out of 20, the indicator of the CG cadets did not increase authentically ( $p > 0.05$ ) and accounted for  $9.7 \pm 0.33$  (48.5%). In the case of a stabbing attack with fast approaching, there was an authentic difference in the level of preparedness of the EG and CG individuals determined ( $p < 0.001$ ). In this case, the performance of the EG cadets increased by 7.1 successful clashes ( $p < 0.001$ ) and reached  $16.6 \pm 0.22$  (83%). The number of successful clashes of the CG cadets was increased by 1.1 and accounted for  $11.4 \pm 0.34$  (57%), which was better authentically, in comparison with the initial stage of the pedagogical experiment ( $p < 0.05$ ). The practical preparedness of the EG and CG cadets differed authentically while repelling a stabbing attack with fast approaching and grabbing clothes ( $p < 0.001$ ). The EG cadets were recorded to have  $15.6 \pm 0.28$  (78%) clashes with a positive effect, which was 8.7 more than at the initial stage of the experiment. The success rate of the clashes of the CG cadets did not increase significantly ( $p > 0.05$ ) and accounted for  $8.5 \pm 0.38$  (42.5%). On the basis of the mathematical analysis of the obtained results, it was found that the overall success of the EG cadets' clashes increased by 37.3% and reached 78.3%; of the CG cadets' – by 5.1% to 49.3%.

The analysis of indicators that characterized the development of psychological qualities showed positive dynamics in both groups during the pedagogical experiment (Table 2). The mathematical processing of the obtained data showed not authentic difference in the development of the indicators of attention distribution and volume of the EG and CG cadets at the initial stage of the experiment ( $p > 0.05$ ). The studied indicator of the EG cadets accounted for  $5.42 \pm 0.21$  c.u., the CG –  $5.38 \pm 0.19$  c.u., which corresponded to a satisfactory level of development in both groups.

**Table 2.** *The dynamics of the indicators of the psychological qualities development of the EG and CG cadets during the pedagogical experiment*  
*Source: Authors' own conception*

The initial stage of the pedagogical experiment			The final stage of the pedagogical experiment		
EG (n=111)	CG (n=116)	Significance level	EG (n=111)	CG (n=116)	Significance level

Mean±SD	Mean±SD	t	p	Mean±SD	Mean±SD	t	p
D							
D							
The distribution and volume of attention, c.u.							
5.42±0.21	5.38±0.19	0.14	>0.0	6.23±0.1	5.64±0.1	2.2	<0.0
			5	9	8	5	5
Attention span and concentration, %							
86.32±0.7	87.61±0.8	1.13	>0.0	90.78±0.	88.24±0.	2.2	<0.0
9	2		5	77	80	9	5
Neuro-psychic stability, c.u.							
19.4±1.62	18.6±1.31	0.38	>0.0	15.1±1.2	17.8±1.1	1.6	>0.0
			5	1	4	2	5

*Legend: Mean – arithmetical average; SD – standard deviation; p – significance of difference between the indicators of EG and CG; t – the meaning of the Student's t-criterion*

At the end of the experiment, the index of attention distribution and volume of the EG individuals increased by 0.81 c.u. and reached  $6.23 \pm 0.19$  ( $p < 0.01$ ) that was better authentically than in the CG ( $p < 0.05$ ). The indicator of the CG cadets increased by 0.26 c.u. and accounted for  $5.64 \pm 0.18$  ( $p > 0.05$ ). The level of development of the distribution and volume of attention of the EG cadets was ultimately assessed as sufficient, of the CG cadets – as satisfactory. The indicators of the attention span and concentration of the EG and CG cadets at the initial stage of the experiment did not differ authentically ( $p > 0.05$ ). The indicator of the EG cadets was  $86.32 \pm 0.79\%$ , the CG –  $87.61 \pm 0.82\%$ . The analysis of the indicator of the attention span and concentration at the final stage of the experiment showed that the mean values of the EG and CG cadets differed authentically ( $p < 0.05$ ). The indicator of the EG cadets was  $90.78 \pm 0.77\%$  that was authentically higher, in comparison with the initial stage of the experiment ( $p < 0.01$ ). The indicator of the CG cadets did not increase significantly ( $p > 0.05$ ) and accounted for  $88.24 \pm 0.80\%$ , which was 0.63% higher, in comparison with the initial stage of the experiment, which indicated a satisfactory level of development. The development of the EG cadets' experiment subjected at the final stage was assessed as sufficient. The analysis of the indicator of neuro-psychic stability indicated its improvement during the pedagogical experiment in both groups, but the difference between EG and CG was not authentic ( $p > 0.05$ ). On the other hand, in comparison with the results obtained at the initial stage of the experiment, they improved by 4.3 c.u. ( $p < 0.05$ ) and reached  $15.1 \pm 1.21$  (they were



19.4±1.62 at the initial stage) in the case with the EG. At the final stage of the experiment, the indicator of the CG cadets accounted for 17.8±1.14 c.u., which was 0.8 c.u. better than initially ( $p>0.05$ ). In general, the level of development of the mean value of the studied indicator was assessed as sufficient in both groups.

The study of the influence of the original methodology on the effectiveness of police officers' official activities was studied by analyzing the results of situations of armed conflicts that occurred during the performance of official duties. The studies were conducted one year after graduation. The analysis of the situation shows more positive results for officers who were studying in the EG. There is a decrease (by 28.1%) in the number of situations in which police officers did not notice a threat of attack. Due to the existing knowledge and skills, the indicator, characterizing the police officers' pre-emptive actions, increased –in 34.7% of cases, a police officer was the first one who took action. The officers mostly followed measures of personal safety and tried to maintain distance, preferred to use special means or firearms. The percentage of police officers who were injured decreased by 42.7%, which indicates the effectiveness of the original methodology.

## **5. Limits and Discussion**

The confrontation with an armed offender belongs to complex activities and requires police officers to have not only a high level of professionally important skills and competencies to apply coercive measures (hand-to-hand fighting techniques, special weapons or firearms) but also a sufficient level of psychological readiness in such conditions (Morhunov, 2014; Paşniciuc, 2017; Shvets, et al., 2020).

The analysis of the situations of armed clashes showed that graduates of the higher educational institutions of the Ministry of Internal Affairs of Ukraine have a low level of knowledge regarding the behavior of an offender, which precedes the attack, the spatiotemporal characteristics of the most common attacks. The police officers have insufficiently developed skills and competencies to apply coercive measures in conditions of armed collision. As a result, a large number of officers are injured and even die.

It conditioned the substantiation and development of a methodology for preparing future police officers to work in the conditions of a clash with an offender armed with a cold weapon. Analyzing the results of the final stage of the pedagogical experiment, we should emphasize the effectiveness of the original methodology. The data obtained indicate that the implementation of the theoretical unit contributed to the EG cadets'

formation of the skills in predicting the degree of danger and the implementation of appropriate motor actions related to repelling an armed attack. In some cases, it is a preemptive action, in others – an increase in distance, the use of special weapons, or firearms. The formation of the skills to determine the preparatory movements that preceded an attack was facilitated by the application of situational tasks, which involved modeling the most common situations of an armed clash, in the educational process.

The analysis of the efficiency of taking protective actions in the case of a stabbing attack with fast approaching and a stabbing attack with fast approaching and grabbing clothes showed that the traditional training methods do not focus attention on such dangerous attack options and future police officers are not sufficiently adapted to them. As a result, during a real clash, a quick approaching of the enemy causes confusion of a police officer. Taking into account the speed of an attacking action, this time is enough for defeat. When performing protective actions in the case of a stabbing attack with fast approaching and grabbing clothes, it is important to feel the strength of grabbing. In the course of the pedagogical experiment, the EG cadets developed skills that helped them to react at the initial stage of capture when it is not strong enough.

Analyzing the results of practical training, it should be noted that clashes with negative consequences for the EG cadets are conditioned by inattention, the lack of alertness, and a low level of development of speed qualities. It was revealed while attacking at close range to a greater extent. The insufficient attention negatively affected defining the danger and, as a consequence, the success of conflicts. The results of the clashes of the CG individuals indicate a lack of adaptation to the unexpected danger manifestation. A low level of theoretical preparedness did not contribute to defining aggressive intentions of the enemy's actions and the proper response. Therefore, when confronted with an armed offender, they were not always able to respond with appropriate protective actions. The analysis of the dynamics of indicators that characterized the attention features of the EG cadets allows stating the positive influence of the original methodology.

## **6. Conclusions**

It was found that the development of professional skills and competencies necessary for police officers to effectively combat an armed offender, does not meet the current requirements of professional activity. On the basis of the conducted research, the original methodology of the future police officers' preparation for the activities in the conditions of a

clash with an offender armed with a cold weapon, is developed and substantiated. The results of the examination of the effectiveness of the original methodology showed the progressive nature of the preparedness of the EG cadets, in comparison to the CG. At the end of the study, an authentically better level of theoretical and practical readiness of the EG cadets was found ( $p < 0.001$ ): the theoretical readiness of the EG cadets was improved by 46.8%, the CG cadets – by 2.4%; the practical preparedness of the EG cadets was improved by 37.3%, the CG – by 5.1%. The improvement of neuro-psychic stability of the EG cadets during the pedagogical experiment ( $p < 0.05$ ) and the increase in the level of development of attention properties ( $p < 0.05$ ), which play an important role in conditions of a clash with an armed offender, were noted. The high level of theoretical and practical preparedness of future police officers of the EG will help to improve the efficiency of their performance in risky situations. As a result, the number of police officers who were injured during contact with an armed offender decreased by 42.7%. The results obtained indicate the effectiveness of the original methodology.

### **Disclosure statement**

No author has any financial interest or received any financial benefit from this research.

### **Conflict of Interest**

The authors declare that there are no conflicts of interest.

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