

## Improving the Training of Modern Firearms through Multimedia Tools

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**Abstract:** The article discusses the types of electronic simulators directly related to information and communication technologies and the effective use of their capabilities, improving the professional competence of future officers of higher military education institutions in shooting training. In addition, foreign experience in improving the training of modern firearms through multimedia was analyzed.

**Keywords:** higher military education institutions, future officers, electronic simulators, firearms, information and communication technologies, competence, professional competence, improvement.

Information and communication technologies are evolving rapidly around the world, and these processes are undoubtedly having an impact on the educational process. Information and communication technologies have become the most important component of the process of using information resources of society. Although information technology has existed at different stages of human development, a distinctive feature of modern information society is that for the first time in the history of civilization, the cost of knowledge, energy, raw materials, materials and consumables. that is, information and communication technologies are leading among existing new technologies.

During the years of independence, special attention was paid to improving the quality of military education in accordance with modern requirements, including the formation and development of a system of officer training aimed at ensuring high professional skills and qualifications of servicemen of higher military educational institutions. As a result of comprehensive reforms in the field of military education, the legal, regulatory, scientific, methodological and logistical support of higher military education institutions has been strengthened, State educational standards for specialties of higher military education institutions have been developed, Modern pedagogical and information technologies were introduced into the educational process. At the same time, today it is possible to completely change the composition of our Armed Forces in terms of quality and fill them with officers who meet today's requirements and have modern thinking skills. Therefore, there is a need to further accelerate the activities of higher military education institutions on the basis of information and communication technology competence.

This is possible by further improving the efficiency and quality of the educational process. An important condition for achieving high results in teaching cadets is the complex application of

various effective teaching methods, the choice of which depends in many respects on the skills of teachers.

Improving the efficiency and quality of the educational process is key to the work of the education team. This means achieving learning objectives within a set time with the appropriate efforts of the teacher and trainee. Of course, the effectiveness of the educational process depends, first of all, on the responsibility of the cadets, their ability to learn. However, the teacher must always be ready to encourage cognitive activity. This is a very important and complex element of the pedagogical process. The basis for the activation of cognitive activity is the attitude of students to serious, hard work, competent performance of practical tasks, independent work on the learning material [1].

The educational process is carried out in two directions: traditional and innovative. And if the former has asserted its right to exist for a long time, is very conservative and highly assimilated, the latter is systematic, dynamic, open to innovation.

Shooting instructors of higher military educational institutions master the various forms and methods of teaching with the use of technical means, visual aids and the introduction of advanced teaching methods. Should harmonize and apply competently. as non-traditional forms of education.

In order to achieve high results in service shooting, cadets must have deep theoretical knowledge, good technical, tactical and physical training, high moral and psychological qualities.

A necessary condition for improving the preparation for shooting is a modern material base (firefighting) that provides adequate teaching methods of the subject, theoretical and educational training. Training class, shooting and interactive shooting ranges, shooting ranges). practical shooting using the latest achievements in shooting training.

The material part of the weapon, the theoretical basis of shooting from firearms, is usually studied in the training class using firearms, tools, existing models, simulators, posters and other visual aids. Shooting techniques and rules apply to shooting exercises taught on the shooting range and on the shooting range. At the same time, each student should be able to quickly and correctly prepare for the shooting, to master the principles of interaction of parts and mechanisms of the weapon, safety rules and measures in the handling of weapons and ammunition. special attention should be paid to the development of standards. In addition, to test the knowledge of cadets on the use of weapons and the legal basis for their use [2].

The level of preparation of graduates for shooting depends, first of all, on the quantity and quality of lessons. Given that the learning process is limited in time, there is a need to find the optimal ratio of theoretical and practical lessons, to determine their most logical sequence and to acquire theoretical knowledge for immediate practical confirmation of theoretical lessons. knowledge is based on practical experience. Yesterday's practice of teaching high school students has shown that as the traditional sequence of lessons shifts to practical shooting, many students quickly forget what they learned in theoretical lessons and become more vocal. pincha cannot apply theoretical rules in practice. basics of shooting.

It is advisable to create conditions for students to think independently and make decisions during the training. This is achieved by incorporating elements of competitiveness, performing the exercises as close to the real situation as possible, observing student movements, and analyzing the exercises performed in detail. In the penitentiary system, weapons are used less than in law enforcement, but the responsibility for shooting is less high.

Therefore, the systemic changes in the field of military training require the improvement of the professional competence of future officers in higher military education through the use of information and communication technologies. This is one of the current problems of today.

In this sense, information technology is a creative activity consisting of a chain of processes carried out to achieve a specific goal. The effectiveness of any technology will increase if the processes that make up the technology chain, the exchange of information between them and the use of computers to combine them.

In this regard, the Decree of the President of the Republic of Uzbekistan dated June 30, 2017 PF-5099 "On measures to radically improve the conditions for the development of information and communication technologies in the country" The current state of implementation, as well as the low level of exports of domestic software products, the insufficient use of the country's potential in science and education to form a competitive and high-performance network of information technology [1]. .

In higher military education, prospective officers need to have integrated knowledge in the field of information and communication technologies and telecommunications, to easily direct the flow of global information, to skillfully find and process the necessary information, and then make decisions based on them. must have the skills to use.

Today, no industry can be imagined without the introduction of information and communication technologies, and the situation demands it. The role of information and communication technologies in the organization of service activities in the National Guard of the Republic of Uzbekistan is also invaluable.

Also, the Presidential Decree No. 5349 of February 19, 2018 "On measures to further improve the field of information technology and communications", the development of modern information technology and communications in the country, the creation of an integrated system of e-government services, Consistent work is underway to introduce new mechanisms of communication between the authorities and the population, as well as a number of systemic problems and shortcomings in the introduction of information technology and communications management hinder the rapid development of this sector, the provision of quality information services [2] , - admitted separately.

The President of the Republic of Uzbekistan, Commander-in-Chief of the Armed Forces Sh.M.Mirziyoyev said that "Uzbekistan must be globally competitive in the field of science, intellectual potential, modern personnel, high technology" [3] on the basis of watts: the formation of a professionally based army, the provision of its staff with highly qualified, professional skills and combat capabilities, professional personnel who can fully meet the requirements of the military profession with their individual - personal, social characteristics attention is being paid.

The concept of development of the higher education system of the Republic of Uzbekistan until 2030 is based on the needs of the social sphere and the economy, improving the quality of education, competitive personnel, based on the strong integration of science, education and industry For the purpose of training, effective organization of scientific and innovative activities, development of international cooperation, as well as measures to introduce new principles of management in the system of higher and secondary special education of the President of the Republic of Uzbekistan dated July 11, 2019 No PP-4391 The concept of "ensuring a strong integration of modern information and communication technologies and educational technologies, the creation of additional conditions for the continuous development of professional skills of teachers in this regard" [4] -required.

Improving the professional competence of personnel in higher military education institutions with intellectual potential that can fully meet today's requirements, including e-simulators directly related to information and communication technologies and the ability to effectively use their capabilities, in line with modern requirements. is one of the problems waiting to be solved in time.

Today, the use and effective use of new innovative technologies in the organization and conduct of training remains one of the main requirements of modern teaching. The basis of a modern military education system is a high-quality and high-tech environment.

The level of improvement of the content of education in the modern information technology environment is one of the important conditions for training a specialist who can meet such requirements. In an informed society, the content of education refers to the system of scientific ideas, knowledge, practical skills and competencies required to be acquired, as well as the formation of a broad outlook. A group of authors such as DMGritskov, PVSisoev and MNYevstigneev described the teacher's competence in information and communication technologies as "mastering new information technologies, understanding their application in the educational process, critical thinking about disseminated information." gives [5].

At the end of the training, FPPiK trainees were asked to evaluate the quality of the lessons and list topics that would be useful for future work in the field departments. All respondents were asked to provide practical training on how to fire a Kalashnikov assault rifle and a Makarov pistol, how to properly prepare for shooting, how to aim and shoot, and how to identify shooting errors. Respondents showed no interest in the material part of the Dragunov sniper rifle, Kalashnikov light machine gun, bottom and anti-tank grenades, handguns, and other types of weapons. In this regard, we believe that in the theoretical part of the working program on the development of firearms should be removed topics related to all types of weapons, except for Makarov pistols and Kalashnikov assault rifles, and the released training hours should be given to practical training. shooting from this type of weapon.

In general, to increase the readiness of cadets of higher military educational institutions for shooting training, it is necessary to increase the number of hours for anti-shooting training before the introduction of two scheduled lessons per week in the program.

Preparation and special exercises are determined throughout the training period, taking into account the specifics of the future service activities of cadets. At the beginning of the development of each new exercise, cadets learn the conditions for its implementation, and then master the necessary actions. Classes will be held at this stage of preparation. In addition, cadets improve their skills and strengthen them by repeating them several times, and only at the final stage - practical shooting.

In the final year it is necessary to introduce the subject "Shooting in extreme conditions", which is mandatory for all cadets. In the classroom, young professionals mimic situations they may encounter in their professional careers while performing service and combat missions. Particular attention should be paid to the spiritual training of cadets, aimed at developing the necessary activity, endurance and readiness to take reasonable initiative in complex extreme situations.

So far, there is no single science-based methodology for teaching girls to shoot, so teachers are faced with the task of developing a differentiated teaching methodology that takes into account their psychological and physiological characteristics.

In our opinion, it is recommended to shoot the girls in the early stages of shooting from a Makarov pistol from a stop, with both hands, at close range (10–15 m), as well as the use of Skatt optoelectronic simulator.

One of the effective components of the learning process is the independent work of cadets. Increasing the scope of this work in the structure of educational activities allows to differentiate professional training as much as possible, to approach each trainee individually, taking into account his physical and mental characteristics.

One of the possible ways to use independent work in the process of training cadets to shoot Makarov pistols is to practice with training weapons and without cartridges. This type of training involves the formation and improvement of cadets' motor skills and shooting skills during the repetition of the same movements with a weapon.

In cartridge-free sessions, trainees work consistently: elements of shooting technique; to receive; "empty" shooting after training and performing a complex exercise in general. The use of this method in the shooting process gives positive results.

Advanced technical training aids are used for the cadets' multifaceted shooting training: an electronic shooting simulator ("Skatt") with a computer and an interactive target set (interactive shooting range). Scutt allows you to use a Makarov pistol in a variety of ways to "shoot" a training target, which is to teach cadets basic shooting skills and to technically improve the skills and abilities of shooters who use weapons reliably. opens up a wide range of possibilities. The computer connected to the "pistol target" system immediately displays information about the nature of the target on the display screen, automatically analyzes the trigger processing, graphically determines the state of front and rear view relative to the target. during aiming and shooting, the imaginary arrow indicates where it hits the target. These features allow you to detect shooting errors in the early stages of training, objectively monitor the movements of listeners during the shooting process, reduce the time to form stable dynamic stereotypes of arrow placement, targeting, processing and marking. Practice has shown that this approach reduces the psychological burden, qualitatively accelerates the acquisition of strong weapon skills, especially among cadets with weak nervous activity, as well as among girls.

Using a Scatt shooting simulator saves ammunition consumption. Its only drawback is that the student does not turn back and hear the sound of bullets. In the penitentiary system, high results in shooting can be achieved only through regular training, using innovative techniques and proven training methods in performing various tactical exercises as close as possible to real situations. One of these methods is the use of an interactive target complex in teaching.

The special software of the interactive shooting range includes: marks and exercises in accordance with the orders and instructions on preparation for shooting; special static and dynamic symbols; interactive video exercises with a non-linear development of a plot that mimics a combat situation; interactive exercises that allow the target environment to change depending on the position of the shooter in the room; the ability to create, destroy, change paths; the ability to choose the type of precipitation intensity, time of day, wind direction, direction of gravity, and more.

The set of interactive target shooting exercises combines previously acquired skills and is designed to teach a variety of exercises and practical situations that are as close as possible to the realities of operational and service activities in the penitentiary system using military firearms.

A non-traditional learning tool - crossword puzzles - helps cadets master the material part of a Makarov pistol faster. In the classroom, each trainee is given a ticket with crossword puzzles and is



asked to answer questions using literature, posters, and visual aids. The process of mastering and memorizing learning material occurs rapidly in the form of a relaxed game [4].

In addition, quizzes will be held on topics covered in the control classes to increase interest in the subject being studied. It helps to develop the spirit of collectivism, to increase the personal responsibility of each cadet to his peers, so each training group prepares for such classes with great diligence and interest.

At the end of the training, the level of theoretical training of students is checked using a specially designed program using personal computers. It contains questions that cover the entire training material on the material part of the Makarov pistol. Each trainee must answer 20 questions correctly.

The use of multimedia technologies and computer graphics in the educational process helps to make the learning process interactive. In particular, Macromedia Flash MX is used to design, test and model educational, production and technical processes. Despite the government's emphasis on the creation and development of scientific, technical and technological innovations in the military field, the training is limited to PowerPoint presentations. Presentations can provide general information, but when training on the type of weapon, it is not possible to see how the parts and mechanisms that belong to that weapon work and how they work. It is advisable to use Macromedia Flash MX as a solution to this problem. The development of interactive programs using Macromedia Flash MX and the introduction of these programs into the military education system is of great importance. It is advisable to create interactive animations using the program Macromedia Flash MX and regularly implement them in the educational process of higher military education. This will radically change the system of military education and give future officers a better understanding of the content of the training [6].

In this process, it is necessary to improve the professional competence of future officers in training, to create the necessary pedagogical conditions for their professional and personal development in higher military education, to develop the basis for the formation of professional competence of future officers and to improve their professional competence. there are important tasks in scientific research, such as substantiating the criteria that determine the degree.

Before highlighting the role of information and communication technologies in improving the shooting competence of future officers of higher military education, think about the importance of electronic simulators directly related to information and communication technologies. Let us consider some of the views of the scholars who have stated. In particular, the world champion in pistol shooting, Olympic medalist, Honored Coach of the Russian Federation L.M. Weinstein said that the use of electronic simulators without the use of ammunition is a form of highly effective training [7].

According to Kryuchin, Director of the International Confederation of Practical Shooting in the Russian Federation (IPSC), laser shooting simulators are convenient and effective for training shooting techniques from submachine guns and various weapons without the use of ammunition. and 50-80% of the training process efficiency [8].

In support of the above, I found it necessary to provide information about some of the modern shooting simulators that are now recognized by the world community. In particular, the KNUT shooting simulator, which was found to be effective for use by the Army of the Russian Federation. PSO-1), RPK-74 machine guns (RPK 200 series), PKM ("Pecheneg"), PGO-7V3, RPG-26, GP-25 (GP-30) firearms - It is possible to shoot without the use of drugs [9].

Manufactured by Kongsberg Defense Systems and widely used in the armies of a number of foreign

countries today, the Gunner skill trainer is designed to be used in training classrooms and in the form of a weapon. designed for full movement in a combat car park.

The SCATT firing simulator is set up to work with the simulator, which constantly monitors the movement of the weapon against the target with high accuracy. The information from the sensor enters the computer modified by the Scatt program, and the point directed in the background of the target is displayed as a trajectory of motion. The shooting time is recorded in a round shape on the screen, and all information about the target and the coordinates of the shot is stored in computer memory for further analysis [10].

The LASER RUBEJ shooting simulator allows the shooter to aim at the target, track and display the target, and make adjustments to the shooting results with the help of the rubei simulators [11].

The STRELLES is a shooting simulator designed to improve shooting skills and to perform the following exercises: shooting in different positions (lying down, knees, standing) [12].

The RUBIN shooting simulator allows you to change the position of the shot and shoot from both the position and the dynamics, as well as train multiple listeners at the same time and monitor the results and provide audio information about the result [13 ]. Allows you to automatically calculate the total result of the shooting. At the same time, practical shooting techniques and rules in the shooting simulator also allow you to learn to follow the rules of safety when shooting from firearms. Electronic simulators are the most effective way to learn how to shoot weapons, how to use ammunition and how to prevent the risk of injury, and the types and conditions of this exercise are close to real combat conditions. E-simulators allow learners to learn how to hold a weapon in order, what to consider when aiming precisely, how to focus on exercise in the first place, and complete freedom of movement on the firing range. will give.

The above-mentioned modern electronic shooting simulators provide the following opportunities for future officers of higher military educational institutions:

have a realistic idea of educational scenarios in solving tasks;

conduct diagnostics while monitoring learners' behavior;

see the actual results of the task performed by the learners;

repetition of previously simulated situations;

Analyze the exercises performed by the trainees, summarize the results of the analysis before the next session, as well as the shortcomings.

When considering the advantages and ways to develop the use of information and communication technologies in the system of shooting training, the widespread use of such systems in the training of trainees and cadets of higher military educational institutions will increase the tactical and technical elements of combat conflict. We can conclude that it allows. The main directions of e-simulators, which are directly related to information and communication technologies, are directly related to the development prospects of the industry.

The evolution of information and communication technologies in the field of firearms will serve to improve all areas of developing society. This, in turn, determines the ways and means by which knowledge, skills, and competencies are developed. The most effective solutions for learning to shoot from simple weapons include the introduction of new electronic shooting simulators into the learning process.

The practice of using information and communication technologies shows that students and cadets of higher military educational institutions are very interested in computerized shooting simulators, so independent work on shooting simulators can lead to different levels of shooting. significantly improves and stabilizes the results of trainees and trainees. The results of all types of shooting, both in combat operations and in training, are directly related to morale.

One of the most important and undoubted advantages of electronic shooting simulators and complexes is that they develop the ability to manage the mental and psychological state of the shooter.

The experience of using computerized shooting simulators not only tells us that the elements of shooting training are an integral part of psychophysiological and technical training, but also helps to develop specific qualities such as endurance, reaction and alertness of the musculoskeletal system.

Information and communication technology helps to evaluate the mistakes made during the shooting process and allows you to repeat the process and develop the necessary media skills in memory.

Over the past 20 years, various types of electronic shooting simulators and complexes have emerged in the electronic technology market, which can be conditionally divided into different electronic marking systems and sensors designed for them, including 2D and 3D images. projection systems, these technologies in turn allow us to describe the situation in three views. 3D devices called Future Tires provide the learner with a realistic picture of the battle, for example, the process of clashing with terrorists and the release of captives from terrorists and the search for criminal gangs. there is an opportunity to feel reality through the sounds of guns. These training exercises will also improve the trainees' combat skills in future service.

The process of introducing information and communication technologies in education will set new requirements for the training of future officers in higher military education. Prospective officers in higher military education have an integrated knowledge in the field of information technology and telecommunications, the ability to easily direct the flow of global information, skillfully find and process the necessary information, and then make decisions based on them. must have the skills to use.

However, despite the fact that the process of informatization of education is accelerating, we are all concerned about the lack of skills in the use of information and communication technologies in solving professional problems.

One of the most important tasks of the higher education system today is to develop the competence of information and communication technologies in future officers in higher military education. By information and communication technologies, we mean not only the accumulation of knowledge and skills formed in the process of teaching computer science, but also a set of modern information and communication technologies, as well as the personal and professional characteristics of the specialist.

Obtaining educational and methodological and scientific information with the help of information and communication technologies, organization of operational consulting, design of research activities, virtual training (seminars, lectures) in real time It was possible to transfer. Another educational tool of information and communication technologies is electronic publications, on the basis of which individual educational material can be a factor for in-depth study and mastering.



## Conclusion

In summary, the computer provides the results and assesses the knowledge of the trainees. At the same time, no one doubts its objectivity.

Firearms instructors develop in cadets high moral and ethical, stable psychological and excellent combat and physical qualities, they are specialists who know the weapons well and can correctly perform service-combat tasks in extreme situations. must be brought up. All of this can only be achieved in complex ways in a targeted learning process.

Thus, the training of military personnel of higher military educational institutions to act in extreme conditions is a complex and multi-stage process, the task of firefighting instructors is to train cadets in any service and combat using firearms. training of specialists capable of solving tasks.

In conclusion, it should be noted that the rapid introduction of information and communication technologies in the education system, based on today's requirements and key tasks, will further improve the quality and efficiency of education. Further capacity building of our national army Radical change of the system of military education The role of modern information and communication technologies is invaluable not only in higher military education, but also in trainings to improve the knowledge of servicemen of all our Armed Forces. . Therefore, the improvement of information and communication technology competencies of future officers in higher military education and the development of this field will create the basis for them to find their rightful place in professional activities.

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