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## INNOVATIVE DEVELOPMENT OF TECHNOLOGIES IN TRAINING FUTURE LAW ENFORCEMENT SPECIALISTS

**Abstract.** The article examines the issue of effective use of information technologies in the educational process of universities of internal affairs of Ukraine with the aim of forming in subjects the skills and abilities necessary for the use of modern information technologies in the practical activities of a law enforcement specialist, improving the skills of professional work with computer devices and networks, electronic document circulation, information systems for the use of digital technologies in the practical activity of combating crime. At the same time, the authors analyzed the content of educational disciplines directly aimed at the formation and development of information and communication competence and proposed changes to work programs in accordance with active reforms in legislation, changes in information and communication systems of various bodies due to the introduction of martial law in Ukraine. The relevance of the introduction of electives in the field of "cyber security" into the educational process is substantiated. The analysis of professional disciplines with the systematic application of digital technologies was carried out: the use of relevant virtual simulators, software and hardware complexes, laser simulators. An important place in the professional training of future law enforcement specialists is occupied by the use of modern information and interactive technologies in professional disciplines,

which involves the activation of the cognitive activity of cadets, ensuring a high level of professional competence and the ability for professional development. In the future, it is planned to investigate in detail the possibilities of applying the experience of developed countries in higher education institutions of Ukraine to improve the system of professional training of specialists in the security and defense sector.

**Keywords:** information technologies, teaching aids, educational process, professional training, law enforcement activities, University of Internal Affairs.

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## ІННОВАЦІЙНИЙ РОЗРОБОК ТЕХНОЛОГІЙ ПІДГОТОВКИ МАЙБУТНІХ ФАХІВЦІВ ПРАВООХОРОННОЇ ДІЯЛЬНОСТІ

**Анотація.** У статті досліджено питання ефективного використання інформаційних технологій у навчальному процесі університетів внутрішніх справ України з метою формування у суб'єктів умінь і навичок, необхідних для використання сучасних інформаційних технологій у практичній діяльності фахівця правоохоронної галузі, підвищення кваліфікації професійної роботи з комп'ютерними пристроями та мережами, електронним документообігом, інформаційними системами для використання цифрових технологій у практичній діяльності по боротьбі зі злочинністю. Водночас авторами проаналізовано зміст навчальних дисциплін, безпосередньо спрямованих на формування та розвиток інформаційно-комунікаційної компетентності та запропоновано зміни до робочих програм відповідно до діючих реформ у законодавстві, змін в інформаційно-комунікаційних системах різних органів внаслідок введення військового стану в Україні.

Обґрунтовано актуальність впровадження в навчальний процес факультативів за напрямом «кібербезпека». Проведено аналіз фахових дисциплін із системним застосуванням цифрових технологій: використання відповідних віртуальних симуляторів, програмно-технічних комплексів, лазерних симуляторів. Вагоме місце у професійній підготовці майбутніх правоохоронців посідає використання сучасних інформаційних та інтерактивних технологій при викладанні фахових дисциплін, що передбачає активізацію пізнавальної діяльності курсантів, забезпечення високого рівня професійної компетентності та здатності до професійної діяльності. розвитку. Надалі планується детально дослідити можливості застосування досвіду розвинених країн у вищих навчальних закладах України для вдосконалення системи професійної підготовки фахівців сектору безпеки й оборони.

**Ключові слова:** інформаційні технології, засоби навчання, навчальний процес, професійна підготовка, правоохоронна діяльність, університет внутрішніх справ.

**Statement of the problem.** High-quality education is the most important issue for the development of society, and practically oriented professional training of future law enforcement specialists in the field of information technology (IT) use is now extremely important to ensure a high level of security in society, proper countermeasures against crime. Especially now, in 2022, in the conditions of constantly existing and potential threats in the field of cyber security, the legal and organizational foundations of ensuring the protection of vital interests of citizens, society and the state, national interests of Ukraine in cyberspace determine the importance of IT in law enforcement activities. This determines the need to find effective ways and methods for timely prevention of threats and their destructive consequences, as well as maintaining such a defense potential of our state that will guarantee its security and sovereignty [1]. An important factor is the formation in subjects of training of the abilities and skills necessary for the use of modern IT in the practical activities of a law enforcement specialist, improving the skills of professional work with computer devices and networks, electronic document management, information systems for the use of digital technologies in the practical fight against crime.

**Analysis of recent research and publications.** The analysis of scientific and methodological works confirms that the problem of improving the quality of professional training of future police officers by means of information technologies is the subject of research by many scientists of Ukraine. The peculiarities of the use of IT in law enforcement activities and their consideration in the organization of the educational process of higher education institutions in order to improve it were considered by scientists: G. Artyushin [1], V. Bondarenko [2], I. Katerynychuk [6],

R. Mishenyuk [7], A. Movchan [8], E. Nazymko [13], R. Pavlenko [9], K. Tushko [1], O. Fedorenko [10], V. Khakhanovsky [11], A. Shklyar [12] and others.

We agree with A. Movchan [8] that the creation of complexes for computer and analytical intelligence and equipping the operative and information-analytical units of the National Police with them requires the improvement of the system of training specialists who possess both legal and special technical knowledge in the field of information technologies. It should be emphasized that the ability to perform information and analytical work is needed not only by employees of information and analytical units, but also by all subjects of operative and investigative activity, without exception, who perform information and analytical work as a special operative and investigative function. At the same time, the scientist notes that, in most cases, the professional level of operative units does not meet modern requirements, insufficient attention is paid to the use of the latest information technologies, which has a negative impact on obtaining operational intelligence.

The problem of information provision of law enforcement agencies of Ukraine, as noted by I. Katerynychuk [6], is the issue of training personnel for these agencies, who would combine a high level of knowledge, abilities and skills both in the legal field and in the field of information technologies. This is explained by the fact that the training of specialists involves training at the user level in the field of information technologies, which is not enough for effective activity in the field of information support of law enforcement agencies, as well as the basics of legal knowledge of specialists in technical sciences. Attempts to combine all the necessary knowledge, abilities and skills during higher education for one reason or another have not yet ended with a positive result. Therefore, the specified problem is still waiting to be solved.

Scientist Fedorenko O. [10] singles out the following modern trends in improving the process of professional training of future police officers: the use of information technologies in the educational process; use of multimedia learning tools; use of interactive methods and forms of conducting training classes.

At the same time, Pavlenko R. [9] claims that information, communication and audiovisual technologies are the foundation for building the structure of a new educational environment, organizing a new type of educational space. In order to improve the educational process, the scientist recommends creating situational centers and using them during the study of special disciplines. The situational center is a kind of laboratory for expert research of simulated and simulated situations, which are specially created by the teacher. As the researcher notes, situational modeling provides an opportunity to implement tasks related to rapid monitoring of data, analysis of trends in the development of the situation, forecasting and modeling of behavior at the strategic and operational levels.

**The aim of the article.** Based on the analysis of scientific and pedagogical intelligence, our own experience and taking into account the rapid development and implementation of digital technologies in all spheres of our lives, we consider it appropriate to improve the professional training of future law enforcement specialists using information technology tools.

**An example of the basic material.** The modern world is characterized by the rapid development of information technologies, the creation and development of new methods and means of transferring, storing and processing information, and the complete computerization of society. Information technologies are being actively implemented in law enforcement activities. For example, the activities of patrol police inspectors directly include the use of digital technologies: the use of information technologies when working with databases during patrols, the use of radio communication and video recording in the work of patrol officers, maintaining official documentation, familiarization with the new provisions of the Traffic Rules, road registration - traffic accidents, etc.

The educational program "Law enforcement activities (police)" at the Donetsk State University of Internal Affairs provides for the study of the disciplines "Information technologies", "Information support of professional activity", the main purpose of which is the formation of cadets' knowledge, skills and abilities to clearly set goals, evaluate the results of task performance, to determine logical connections between phenomena and concepts, to plan and organize the performance of professional tasks with the help of information and technological devices and processes, etc. As a result of such an organization of the educational process, future law enforcement officers form an informative component of professional competence, as its important and relevant component [1].

Graduates of higher education in the field of knowledge 26 "Civil security" in the specialty 262 "Law enforcement activities" of the educational program "Law enforcement activities" of the Uzhhorod National University of Higher Education and Research in the process of studying the discipline "Information law" study the main sources of information law, institutes of information law, modes of access to information, members of the information society, acquire the skills to use available and accessible information databases for professional activities, learn to critically analyze the information contained in them and evaluate it.

Disciplines directly aimed at teaching students how to work with information technologies in law enforcement activities are related to such subjects as "Constitutional law", "Life safety and occupational health", "Ukrainian professional language", "Foreign language", etc. and is the basis for studying the disciplines "Information support of internal affairs bodies"; "Legal statistics"; "Legal documentation"; "Fundamentals of management in internal affairs bodies"; "Operational investigative activities" and others.

Understanding the insufficient amount of allocated hours and the limited coverage of topics in the above disciplines of information and communication technologies, with the aim of improving the professional training of future law enforcement specialists by means of information technologies, universities of internal affairs introduce electives into the educational process. For example, the Dnipropetrovsk State University of Internal Affairs practices optional courses on cyber security. The relevance of cyber security electives is extremely important, since according to the National Police of Ukraine, there is a clear trend of an increase in the number of cybercrimes. So, if 2,900 crimes were committed in 2015, then in 2019, for comparison, more than 4,000 cybercrimes were committed in Ukraine [4]. The issue of cyber security in the conditions of martial law is especially relevant. In Ukraine, the cyber police face such crimes as online fraud, theft of funds from bank cards, from bank accounts when using client banks, interference with electronic computers, gaining access to personal data, etc. [4].

On the importance and necessity of creating electives in the format of mixed education in such subjects as digital marketing, cyber security, entrepreneurship, etc. emphasizes the Ministry and the Digital Transformation Committee of Ukraine, which plans

radically "digitalize" Ukrainian education. For this purpose, the Ministry and the Digital Transformation Committee of Ukraine developed 4 main tasks: 100% electronic document flow; provision of educational institutions with e-textbooks and online educational resources; giving students and parents access to digitized lesson plans, lesson materials, as well as the schedule and grades in the e-diary; creation of electives in the format of mixed education [4].

Information technologies are actively implemented in the teaching of professional disciplines. Specialists in the field of fire training note that exercises using virtual simulators have an extremely powerful educational and developmental impact [2]. One of the types of simulators that is actively used in fire training classes of future law enforcement officers is a laser shooting range, where the use of computer games with a specially prepared plot is provided as targets. Therefore, the shooter can influence the development of the interactive plot thanks to his accurate shots. The use of modern innovative technologies makes it possible to use real firearms in the educational process [2].

Electronic software and hardware educational and training shooting complex Interactive multimedia laser shooting range "Rubin-U" and its modifications are actively used by educational institutions of the Ministry of Internal Affairs and the National Guard (Lviv, Kharkiv, Zaporizhzhia, Zolochiv); military departments (Sumy, Mykolaiv); combat units of the Armed Forces of Ukraine (Khmelnyskyi, Zaporizhzhia, Zhytomyr); security units of the NPP of Ukraine; non-departmental security units of the Dnipro Cascade HPP (Vyshhorod, Zaporizhzhia); military

lyceums (Sumy, Kyiv); public organizations (GO "White Wolf Center for Special Tactical Training" (Kyiv), shooting club "Polygon" (Zaporizhia), Training Center "SOT" (Chernihiv), etc. [5]. Among the advantages of "RUBIN -U" can include: high injury safety, ammunition saving mode, universality of training, the possibility of designing training exercises, high throughput of training subjects, variety of programmed small arms, availability of more than 25 shooting programs and designers, mobility of the laser shooting range.

The use of information technologies in universities of internal affairs of Ukraine contribute to the active implementation of interactive teaching methods (lecture-discussion, group dialogues, role-playing, situational modeling, brainstorming, debate, training games) with the aim of forming professionally important skills and abilities, because they allow modeling the conditions of future professional activity [1].

Therefore, a characteristic feature of the use of information technologies in law enforcement activities is the provision of organization and activation of the educational and cognitive activities of future police officers, the development of professional skills, which combines the provision of feedback, the implementation of automated diagnostics, monitoring, control of knowledge, skills and abilities; interactivity (situational, business games, training classes, practical tasks, seminar classes); optimization of the educational process by reducing reproductive actions and operations when teaching initial material and saturation with information resources; increasing information competence as an important component of the professional competence of future police officers [12].

Optimizing the professional training of investigators, criminal investigation workers, precinct police inspectors, psychologists, experts in the field of countering cybercrimes is possible under the condition of introducing modern interactive and information technologies into the educational process, which provide for the activation of the cognitive activity of cadets, ensuring a high level of professional competence and the ability for professional development, giving educational and cognitive activity a creative, research direction [12].

The concept of reforming education in the Ministry of Internal Affairs of Ukraine is based on certain principles. One of the defining principles is the use of the latest technologies during the training of law enforcement specialists, taking as an example the best practices of training law enforcement agencies of developed countries using the latest technical means of training law enforcement specialists. Thus, the Federal Law Enforcement Training Center in the United States of America is looking for and developing alternative educational technologies, especially computer simulations and simulations, augmenting existing teaching methods [3].

Decree No. 64/2022 "On the introduction of martial law in Ukraine" of February 24, 2022 also influenced the need to make appropriate adjustments to

educational disciplines that are directly related to information technologies. For example, in the discipline "Information support of professional activity" for cadets of the 2nd year of the specialty "262 Law enforcement" and students of the 3rd year of the specialty 081 "Law" of the Donetsk State University of Internal Affairs in topic No. 4 "Risks and threats in the field of information provision" a subtopic was added " Cybersecurity in the conditions of martial law" and consideration of changes to the Criminal Code of Ukraine regarding increasing the effectiveness of the fight against cybercrime in the conditions of martial law is envisaged. Topic No. 8 "Information and analytical support for law-making and law enforcement activities" includes consideration of information and analytical support under martial law conditions, and topic No. 5 "Computer technologies in legal activity" provides for the study of the features of state registration and functioning of unified and state registers, the holder of which is the Ministry of Justice, under martial law. During the training of the discipline "Information support of professional activity", it is also planned to familiarize students with the following new legal acts: On amendments to the Criminal Code of Ukraine to improve the effectiveness of combating cybercrime in the conditions of martial law: Law of Ukraine dated 03/24/2022 No. 2149 - IX; On amendments to some laws of Ukraine regarding the ban on the production and distribution of information products aimed at promoting the actions of the aggressor state: Law of Ukraine 2109-IX dated 03.03.2022; On amendments to some legislative acts of Ukraine regarding the strengthening of criminal liability for the production and distribution of prohibited information products: Law of Ukraine 2110-IX dated 03.03.2022; On amendments to the Criminal Procedure Code of Ukraine and the Law of Ukraine "On Electronic Communications" regarding increasing the effectiveness of pretrial investigation "on hot tracks" and countering cyberattacks: Law of Ukraine 2137-IX dated 15.03.2022; On amendments to Article 114-2 of the Criminal Code of Ukraine regarding improvement of liability for unauthorized dissemination of information on means of countering armed aggression of the Russian Federation: Law of Ukraine 2178-IX dated 04/01/2022; On amendments to the Law of Ukraine "On Electronic Communications" regarding improving the efficiency of the organization of the work of suppliers of electronic communication networks and/or services under martial law: Law of Ukraine 2240-IX dated 03.05.2022; Some issues of state registration and operation of unified and state registers, the holder of which is the Ministry of Justice, in the conditions of martial law: Decree of the Cabinet of Ministers of Ukraine of March 6, 2022 No. 209; Some issues of ensuring the functioning of information and communication systems, electronic communication systems, and public electronic registers under martial law conditions: Resolution of the Cabinet of Ministers of Ukraine dated March 12, 2022 No. 263 and others.

Taking into account active reforms in legislation, changes in information systems of various fields, there should be corresponding changes in the content of educational disciplines related to the study of network information technologies and their use in professional law enforcement activities, electronic document management software, risks and threats in the field of information provision, computer technologies in legal activity, information means as a source of information regarding the circumstances of the crime, information and analytical provision of law-making and law-enforcement activities, including under conditions of martial law, etc. Separate emphasis should be placed on the study of cyber security under martial law, preventing the exponential increase in cyber attacks in Ukraine.

**Conclusions.** The introduction of distance learning and martial law accelerated the creation and active implementation of specialized electronic courses, electronic databases of educational materials, and virtual simulators in the training of future law enforcement officers. It is expedient to take into account and introduce the considered modern trends of improving the process of training future police officers for professional activity into the educational process of the law enforcement institution. In the future, it is planned to investigate in detail the possibilities of applying the experience of developed countries in higher education institutions of Ukraine to improve the system of professional training of specialists in the security and defense sector.

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