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Innovations are the determinants of modern economic development. This Issue highlights the theme of innovation in business fields of the highest social importance.

Contents

IMPLEMENTATION OF MODERN INNOVATIVE PRACTICES IN THE ACTIVITIES OF EDUCATIONAL INSTITUTIONS

Svitlana Kyrylenko

Candidate of Pedagogical Sciences,

Head, Department of Innovation and

Research and Experimental Work,

Scientific Institute of

Education Content Modernization,

Kyiv, Ukraine

Abstract

The article examines the processes of reforming Ukrainian education, and the introduction of modern innovative practices in the activities of educational institutions, which is an urgent need today; the use of digital technologies in the learning process motivates students to study subjects with pleasure and perform various tasks, and proves the improvement of the quality of assimilation of educational material;

Modern methods and forms of educational activity of students are revealed, which organize learning in an interesting and effective way, which affects the process of acquiring knowledge by students of education, understanding of modern trends in the development of education; the ability to organize pedagogical activity on the basis of competence (forecasting, projecting, evaluation, etc.); to draw up individual educational routes for the development of a student as an individual, to manage the project activities of students.

The relevance of using innovative practices in lessons, and methods of implementing an integrative approach in education was revealed; the ability to constructively assess risks, make decisions, solve problems, and cooperate with other people, and the quality of education is considered the most important factor in the sustainable development of the country, its technological, economic, informational and moral security.

Keywords: innovative practices, European educational space, modern educational institutions, digitalization of education.

Formulation of the problem. Reforming the educational system of Ukraine in the direction of integration into the European educational space, the development of modern education involves the development and implementation of modern innovative educational practices, innovative systems, and learning technologies in the activities of educational institutions.

Despite the hostilities taking place in the country, innovative processes of educational restructuring are becoming urgent in terms of their scale, which require the transition of educational activities from traditional teaching methods, and passive accumulation of knowledge to motivated assimilation of scientific information and skills by students.

The Ukrainian school of the 21st century is the result of important changes taking place in the national education system in recent years. This is confirmed by the actual progressive development and relevance of the innovations of modern innovative practices and experiments in general secondary education institutions, which activated the cognitive and creative activity of children and are connected with the transition to the position of personally oriented pedagogy. Previously, the unconditional orientations of education were the formation of knowledge, skills, informational and social skills (qualities) of education seekers, which ensure “readiness for life”, which is understood as “the ability to adapt the personality to social circumstances”. According to T. Demydenko, “Now education is increasingly oriented towards the creation of such technologies and ways of influencing the student’s personality, which ensure a balance between social and individual needs, and which, by starting the mechanism of self-development (self-improvement, self-education), ensure the readiness of the child to realize own individuality and changes in society”. [3]

A significant number of institutions of general secondary education introduce new forms, methods, and technologies into educational activities, and, above all, modern innovative practices. Thanks to the variety of functions of educational technologies, the variability of their structure, the components of which are the latest approaches to the educational process, in particular interactive, information and communication technologies, digitalization of education,

as well as distance forms of the organization of education, which have now become especially relevant in Ukraine, the motivation of the participants of the educational process to education, the connection of the educational material with the real challenges of today is monitored.

Taking into account the peculiarities of the innovation policy of highly developed European and world countries, the latest research in education, because traditional pedagogical technologies do not provide the necessary level of education, a course for innovative development was determined in Ukraine, which was reflected in a number of legislative and regulatory documents, namely: laws of Ukraine “On education”, “On innovative activity”, “On priority areas of innovative activity”, etc., which state that “the main goal of the state innovation policy is to create socio-economic, organizational and legal conditions for the effective reproduction, development, and use of scientific - the technical potential of the country, ensuring the implementation of modern ecologically clean, safe, energy- and resource-saving technologies, production and sale of new types of competitive products”. [4, p. 2]

The introduction of innovative practices and modern technologies into the educational process of educational institutions aims to use innovations in the form of new methods, types of services, and organizational-technical and socio-economic solutions of a managerial or other nature, ensuring a high level of education, and harmonious human development.

One of the tasks of a modern school is to reveal the potential of all participants in the pedagogical process and to provide them with opportunities to show their creative abilities. In this regard, there is an urgent need for digitalization of the educational process, and the use of computer technology during the study of many disciplines of the school curriculum, because of changes in the world, society, legislation, new discoveries in science and technology, works of art are born every day. Therefore, the information presented in the textbook becomes outdated even during the publication of the textbook, and the study of individual disciplines or individual topics using innovative technologies, computer equipment and the latest information borrowed from the Internet is one of the ways to optimize and diversify educational process.

The purpose of writing the article is the study and analysis of the use of modern innovative practices in the education system and the determination of their impact on the development of students in general secondary education institutions.

Analysis of recent research and publications. The idea of implementing innovative technologies in education involves achieving the goal of high-quality education, that is, competitive education capable of providing each person with the conditions for independent achievement of one or another goal, and creative self-affirmation in various social spheres.

The analysis of recent studies shows that domestic and foreign researchers of the problems of pedagogical innovation O. Antonova, N. Bibik, M. Burgin, L. Vashchenko, L. Danylenko, I. Dychkivska, O. Dubasenyuk, Yu. Zavalevskyi, N. Klokar, characteristics such as “useful, progressive, positive, modern, advanced”; consider the educational innovative activity as a socio-pedagogical phenomenon, which is the most important feature of pedagogical work and characterizes the complex interrelationship of the teacher’s general culture, his creative potential and professional orientation.

According to L. Pukhovska, the determination of the requirements for innovative education, formulated in European and national documents, materials of expert groups, and works of individual scientists, makes it possible to characterize the features of the future innovative system of education and training, which will ensure:

• Creation of an educational environment that corresponds to the abilities, needs, and possibilities of the child's personality;

• Multi-level education in the form of a number of directions with educational programs that provide for different terms of study;

• New forms of organization and activity of educational institutions based on the distribution of functions between institutions of general secondary education, enterprises, and organizations included in the educational complex/cluster;

• Creation of support services for the continuous professional education process, such as adaptation, diagnostic, didactic, psychological centers, etc.;

• Improving the compatibility of national systems of vocational education and training by justifying and introducing the European Qualifications Framework and the National Qualifications Frameworks compatible with it, which will facilitate the permeability between different sectors of education, as well as ensure international recognition of qualification certificates;

• Raising the quality of education through the development of effective quality systems;

• Active use of innovative teaching methods and technologies; effective use in education of modern innovative practices and distance learning in the context of creating a single European space of open education. [8, pp.124-132]

Building innovative education, according to the scientist, is a “strategic goal of every EU member state. At the European level, the thematic network “Innovations in Vocational Education and Training”, launched in 2014 by the European Center for the Development of Vocational Education and Training (CEDEFOP), became an important tool for the spread of innovative educational practices, the leading idea of which is innovations in the labor market that provide new forms of education and training, contributing to its dynamism and innovation” [8].

The implementation of modern innovative practices in the educational process of educational institutions is the subject of intensive theoretical and practical research, which is characterized by an empirical focus, namely: the development and conduct of innovative lessons by teachers of various profiles, and theoretically - the creation and improvement of innovative and integrated courses, in some cases connecting numerous subjects, the study of which is provided by the curricula. However, innovativeness, as a didactic tool or system, must be embodied in educational subjects. The realization of the idea of creating innovative courses and lessons turns out to be not very easy, since innovative technologies make it possible to show students the “world as a whole”, overcoming the disciplinary diversity of scientific knowledge, and the freed-up study time due to this is used by the teacher for profile differentiation in education.

Modern learners of education obtain a significant amount of knowledge from Internet resources, since the motivation to study is often absent, which leads to a lack of thorough basic knowledge and skills, a superficial worldview, and the knowledge acquired online is mostly situational in nature. In order to prevent such a situation, as well as to prepare children for future professional challenges, teachers are suggested to pay significant attention to the digitalization of the educational process, to issues of using the Internet, as well as to the use of cloud technologies and their advantages, popular Google services in the study of educational subjects.

Considerable attention in our difficult times is given to the creation of a general school climate, and a wide range of support services that care about students. Effective partnerships

between the family and the educational institution are also important points because communication should be mutual, balanced, and constant. Parental participation in decisions related to learning, as well as the organization of school life, contributes to the transparency of educational activities, taking into account the real needs of the family, and creates a sense of responsibility for the educational process in students. ICT tools can support communication with parents (electronic diaries, newsletters, interactive websites). It is also important to cooperate with professionals and services in various fields, that is, the involvement of interested parties. [5]

The implementation of modern innovative practices allows both a departure from the classical lesson system and the application of project methodology, which allows the student to acquire the necessary knowledge by involving them in research activities since project or research activities are one of the mandatory components of the content part of each educational discipline. All children should master this technique, which allows them to develop their creative and individual abilities.

The purpose of conducting projects and research activities in educational institutions is the acquisition by the student of functional research skills as a universal way of assimilating reality; developing the child's ability to research the type of thinking; acting on the student's personal position in the educational process based on the acquisition of subjectively new knowledge (that is, self-acquired knowledge that is new and personally significant for a particular student). But in modern conditions, when the issue of reducing the educational load of children is urgent, the meaning of the concept "project, research activity of students" acquires a slightly different meaning. In it, the share of the career orientation component, the factors of the scientific novelty of the research, and projects decrease, and the content related to the understanding of project and research activities as a tool for improving the quality of education increases.

In order to confirm the results of the work carried out during the school year, students at the end of it present finished projects and introduce teachers, classmates, and parents to the results of their scientific research. Such activities are rightly recognized as innovations in education, because here, instead of the traditional role of a teacher, a teacher appears to students as a mentor, assistant, and older friend. Together with the child, he works on creating a technological research

map, determines the direction of activity, and selects methods, and experiments that will be conducted during the planned project.

It is the teacher who sets the forms and conditions for the project, and research activity, thanks to which the internal motivation is formed in the student to approach any problem (scientific or life plan) from a research, creative position. Therefore, one of the most important tasks is to solve the question of how to form internal motivation, i.e. internalization of the external need to find the unknown into an internal need. The teacher needs to find a balance between observing the scientific tradition (teaching students the culture of conducting research) and the novelty, originality, and vitality of posing the question. Solving such a problem creates a creative problem for the teacher himself, and what is most important is not to “pave and repeat” a “permanent” path in his pedagogical activity, using already familiar research methods and fix it, but to constantly find new tricks, otherwise, the student’s interest will be lost to the implementation of project and research activities. Internal motivation and interest in the research problem are the basis for the success of students’ research activities.

Innovative activity in educational institutions may include the development of new methods, methods, means, methods of teaching and upbringing, implementation of original programs, courses, testing of new textbooks, etc. Special attention is paid to the creation of remote interaction schemes between teacher and student, parents and children. At the same time, the classic lesson system can be preserved or modernized. The teacher’s task includes explaining unclear theoretical questions to students, providing assistance in case of complications, and certain obstacles in the implementation of transformations, and conducting and processing these sociological surveys because the main work on the project is done by the student himself, which allows him to gain new knowledge related to the subject of his research.

The introduction of innovative practices and the implementation of new vectors of education development requires the use of innovative pedagogical technologies, creative search for new or improved concepts, principles, and approaches to education, significant changes in the content, forms, and methods of education, upbringing, management of the pedagogical process. Thanks to the introduction of innovations, and interesting innovative methods, the child is gradually determined with the choice of his future professional activity, because it is a process of cognition,

with the help of which the accumulated knowledge and skills have a formative effect on the way of thinking, character or physical capacity of a young person. Departure from the traditional authoritarian system of education allows the harmonious development of the child's personality and facilitates the process of his social adaptation. During practical classes, students learn the ability to communicate, work in a team, be tolerant of the opponent's opinion, and gain significant social and communicative experience of adaptation in society.

Conclusions. So, it can be concluded that the implementation of modern innovative practices in the activities of educational institutions gives preference to the model of education that will improve children's practical skills, teach them to think, and enable them to adapt to the world of changes and complex events in Ukraine.

Implementation of modern innovative practices in the activities of educational institutions, and recognition of each school's right to work with original programs requires changes in the educational process, teachers who consciously take responsibility for each developing child. The result of a creative search for original, non-standard solutions to various pedagogical problems is new educational technologies, original ideas, forms and methods, and non-standard approaches.

Thanks to the active implementation in educational institutions of modern innovative practices, the use of Internet resources, online tools, and platforms, they provided the opportunity for full distance education for children in the conditions of military operations in the country and for students with special educational needs (comfortable conditions for development, acquiring new knowledge, acquiring skills, successful adaptation to modern social challenges).

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ASSESSMENT OF THE LEVEL OF DIGITAL AND INFORMATION TECHNOLOGIES APPLICATION IN COMPANIES PROVIDING MEDICAL SERVICES

Dmytro Diachkov

Doctor of Economics, Professor,

Department of Management named after I.A. Markina,

Poltava State Agrarian University,

Poltava, Ukraine

Synenko Vladyslav

Doctor of Economics, Associate Professor,

Department of Management named after I.A. Markina,

Poltava State Agrarian University,

Poltava, Ukraine

Danylko M. V.

Postgraduate,

International Scientific and Technical University

named after academician Yury Bugai

Kyiv, Ukraine

Abstract

The article examines the prerequisites and prospects for using and developing digital and information technologies at medical service enterprises. The study's focus is on the methods of assessing the level of digitalization and informatization of the states, territories (regions, districts, or clusters), particular spheres of activity of business entities and the population, including the

assessment of the level of medical service provision via using modern digital or IT tools. The assessment methods are defined and characterized. The article describes the author's methodology for assessing the level of using digital and information technologies at enterprises in the field of medical services. The developed author’s method is based on the identification of five groups of indicators characterizing the level of digital and information-communication technologies application in healthcare companies providing medical services, interaction between clients and providers of medical services in a digital online environment, the possibilities and availability for providers and clients to receive medical services using a digital online environment, the economic component of the digital and information-communication technologies application at enterprises that provide medical services, and a management system of digitization in the medical services sphere.

Keywords: digitalization management, healthcare services, indicators of evaluation of medical services, information and communication technologies, informatization of society medicine, the field of health care.

Formulation of the problem

The digital revolution influenced all spheres of state and social life, but it has had the greatest, most radical, and large-scale impact on the healthcare sphere. The global pandemic caused by the world spread of acute respiratory disease, the Covid-19 virus, has become a significant impetus for the digital transformation of the medical branch (Ilika, 2022). The digitalization process in this area is in constant development, and according to HIMSS, about 80% of healthcare systems plan to increase the number of investments in digital healthcare area over the next five years. The global healthcare services market reached nearly $7.5 trillion in 2022 and continues to grow. It is expected to exceed $9 trillion amount in 2026. In addition, the IT market in the healthcare sphere also demonstrates significant growth. According to Precedence Research, in 2022 it was $320 billion and by 2030, it can reach the amount of $857.6 billion. (Horiachko, 2023; Collins, 2023). In addition to the above, the digitalization of healthcare is a strategic task of the state – the digitalization processes are actively supported at all levels of government. The following modern trends in the development of medicine should be singled out as those that greatly stimulate the

creation of new innovative digital healthcare systems: the development of high-tech medical assistance; the creation of new means of controlling physiological parameters (for example, at present, a smart phone has become the basis of digital health for many); creation of implanted medical devices; the development and implementation of distance control tools, etc.; providing citizens with internet navigation systems designed for the health care system; prevention of diseases and formation of a healthy lifestyle with the help of innovative means, like clinical telemedicine, intelligent systems, medical information systems, m-Health (mobile health care and "medical internet of things (IoMT)", e-Health system; qualified/efficient evaluation and control of medical care quality; the possibility of implementing distance education elements; support of clinical scientific researches; distance purchase of medical drugs and products (Synenko, 2023).

The purpose of the study. The exceptional importance and relevance of the issue determine the purpose of this study, which implies the study of the state of digitization in medicine in general, the achievements, and prospects for the further development of relevant processes in the field of healthcare. But, first and foremost, it is aimed at determining the level of effectiveness of their implementation by both medical workers and patients.

Introduction

Comprehensive and all-around digitization of the healthcare system, the principal aim of which is improving the quality of the branch functioning, is primarily related to the creation of electronic medical databases, the implementation of new solutions in the field of Internet medicine and mobile medicine, ensuring the technical compatibility of systems, the use of large data arrays, etc. The quality level of medical services can be improved by increasing the rate of service personalization, boosting the effectiveness of interaction with consumers/patients, as well as improving the quality of service by offering patients digital solutions for omnichannel access, using mobile apps, portals, and personalized digital information kits. To improve the interaction between service providers and consumers, it is advisable to expand the use of such digital tools as social network data analysis, telemedicine, and virtual reality. Cyber security and risk management related to patients' personal and medical data are still in the focus of attention. The exponential development of several technologies is significantly changing the healthcare sphere

devising. Mostly, it is due to the development of such areas as synthetic biology, 3D printing, nanotechnology, accompanying diagnostics, etc. In the future, the work of medical institutions will improve due to the modification of medical care models, the introduction of digital technologies, artificial intelligence, and involving the integrated and high-quality development of human resources (Adakhovs'ka, Kryvenko, 2021).

The analysis of scientific sources on the issues of digital technologies implementation in various spheres of social life leads to the conclusion that to carry out all of the above, it is expedient to develop a methodology that would allow an integral determination of the level of digital and information technologies application at enterprises of medical services.

Presenting the main material

In the modern world today, there exist a significant number of methods for assessing the level of digitization or informatization of states, individual territories (regions, districts, and clusters), spheres of activity of economic entities and the population, and which also include the assessment of the provision of medical services performed using modern digital or IT tools. Among them are:

- The Digital Economy and Society Index (DESI) was developed in EU countries to determine the level of implementation and efficiency of the electronic systems used in the field of healthcare (European Commission, 2023). The DESI summarizes the indicators of the digital productivity in the countries of Europe and focuses on the five main areas of government policy, one of which is the provision of digital public services, including e-Health. Index e-Health shows the proportion of the population that has used health care services on the whole as compared to the services provided on the Internet, that is, those who didn't need to visit a doctor or some medical institution to get a prescription or the necessary consultation/advice. They got it online.

This index also involves the use of such indicators as:

Online search for health information, defined as the share of Internet users searching for health information (injuries, illnesses, nutrition, health improvement, etc.) in the last three months;

Appointment with a doctor via a website, defined as the share of Internet users who made an

appointment with a doctor via a website (for example, a hospital or a medical center) during the last three months;

GPs (the use of electronic networks to transfer prescriptions to pharmacists), defined as the proportion of general practitioners who use electronic networks to transfer prescriptions to pharmacists;

GPs (the use of electronic networks to share patient's health data with other healthcare providers and specialists), defined as the proportion of general practitioners who use electronic networks to share patient health data with other health service providers and specialists;

The method of assessing the level of digitization in medicine, suggested by the Ministry of Digital Transformation of Ukraine, in terms of determining the Index of Digital Transformation of the Regions of Ukraine (Ministry of Digital Transformation of Ukraine, 2023). This is an assessment of the sub-index "Development of the Internet" in shelters of medical institutions and the sub-index "Regime "Without Papers" with the relevant influence coefficients;

Method of determining the level of digitalization of medical services which focuses on the index of the information-communication technologies development, proposed by the International Telecommunication Union (Committed to Connecting the World, 2022), which takes into account the following indicators: the number of mobile cellular phone subscribers per 100 inhabitants, the number of active mobile broadband contracts per 100 inhabitants, international Internet bandwidth per Internet user (bit/s), the percentage of households with a computer, the percentage of households with Internet access, the percentage of persons, who use the Internet, the number of active contracts for mobile broadband access per 100 inhabitants, the number of contracts for fixed (wired) broadband access per 100 inhabitants;

The updated Network Readiness Index evaluation methodology (Portulans Institute, 2022), which reflects all current challenges to the formation of the information economy, considering it as a component of the information society. The problematic issues that are reflected in the assessments of the Global Index of Network Readiness comprise development of the digital potential of society, the formation of human capital based on the providing of digital knowledge and skills, overcoming the gap in access to information-communication technologies, ensuring trust in the latest digital systems, ensuring the security of cyberspace, increasing trust in

governments as to solving these issues, and identifying negative impacts of the information society development on the economy and quality of life. National and international strategies for the development of the healthcare management system and modern medicine ought to take them into account;

Since the medical industry is a specific area that inevitably uses personalized data of medical institutions, doctors, pharmacists, service personnel, and patients, it is fundamental to consider the indicators revealing the safety of the provision of services in the field of healthcare. The National Cyber Power Index, developed by the Robert and Rene Belfer Center for Science and International Affairs of Harvard University (Belfer Center for Science and International Affairs, Harvard Kennedy School, 2022), can provide an accurate and proper assessment of these aspects. The index comprises 29 indicators, including cyber-attacks attributed to certain cyber threat actors, data protection laws, technical standards and Internet governance, cyber investigations, cybercrime, etc. They can be partially applied in the assessment of healthcare security. These indicators are evaluated in context of eight goals: the application of supervision and monitoring practices at the national level with the participation of internal control groups; national program (strategy) of cyber security (cyber protection); information environment control and management; specialized activity of foreign intelligence on issues of national cyber security; the potential threat to destroy or disable the information and communication infrastructure and capability to level attack chances of the adversary; recognition and application of international specialized norms and technical standards.

The specified list of indices is not exhaustive at all. Each state also has its peculiar statistical standards that summarize certain information regarding a specific industry, the activity scope of economic entities, or territory. At the same time, there is no specified index for such a field as healthcare and the provision of medical services, which would allow integral determination of individual aspects of advantages or disadvantages in the choice of a development strategy. Thus, having summarized the information on the basic characteristics of the methods under consideration, we compiled the author’s list of indicators that can help to assess more accurately some aspects of the benefits of creating the digital environment in the medical services sphere. In our opinion, these indicators could provide the most objective and relevant analysis and allow assessing the level of digital and information technologies application at medical services

enterprises, as they are based on an integral indicator.

It is efficient to divide the entire system of indicators into separate sets that will characterize certain directions of digital and information technologies application at healthcare enterprises.

The first set of indicators will include those that characterize the level of information and communication technologies application in healthcare companies which provide medical services (Table 1).

Table 1: **Indicators that characterize the level of digital and information-communication technologies application in healthcare enterprises that provide medical services (X1) [author's development]**

Designation	Name of the indicator	Content of the indicator	Type of indicator
x_{11}	The coefficient of software's using for the provision of medical services	The ratio amount of used software to the total amount of software at enterprises in the field of medical services	Stimulator
x_{12}	The coefficient of technical and technological mean's use for providing medical services	The ratio of the number of used technical and technological means to the total number of technical and technological means at enterprises in the field of medical services	Stimulator
x_{13}	The coefficient of digital and communication tool's using for the provision of medical services	The ratio of the number of digital communication tools used to the total number of communication tools at enterprises in the field of medical services	Stimulator
x_{14}	The coefficient of software and technical management system's automation for the provision of medical services	The ratio of automated processes aimed at software and technical management system of providing medical services to the total number of processes aimed at managing the system of providing medical services	Stimulator
x_{15}	Coefficient of the software and technical management system component's innovativeness of providing medical services	The ratio of the latest software and digital tool's (which have been on the market for less than a year) use to the total number of software and technical tools used to provide medical services	Stimulator
x_{16}	The coefficient of personnel's qualification in the application of information and communication technologies at enterprises in the field of medical services	The ratio of personnel with qualifications and/or experience in the application of information and communication technologies at enterprises in the field of medical services to the total number of personnel	Stimulator

It is expedient to unite in the second set of indicators those that characterize the state of interaction between clients and providers of medical services via a digital online environment (Table 2).

Table 2: **Indicators that characterize the state of interaction between clients and providers of medical services via a digital online environment (X_2) [developed on the basis of the materials of *European Commission, 2023*]**

Designation	Name of the indicator	Content of the indicator	Type of indicator
x_{21}	Efficiency coefficient of online health information search	The ratio of Internet users who found information about health (injuries, diseases, nutrition, health improvement, etc.) to those who made relevant inquiries during a certain period of time	Stimulator
x_{22}	The coefficient of effectiveness digital technologies using for obtaining medical services	The ratio of patients who made an appointment with a doctor through a website, app (for example, a hospital or a medical center) to the total number of patients admitted during a certain time period	Stimulator
x_{23}	The coefficient of electronic networks using for the transmission of prescriptions to pharmacists	The ratio of general practitioners using electronic networks to transfer prescriptions to pharmacists to the total number of doctors	Stimulator
x_{24}	The coefficient of electronic networks using for the exchange of medical data of patients with other providers of medical services and specialists	The ratio of general practitioners who use electronic networks to exchange patient medical data with other health care providers and specialists to the total number of doctors	Stimulator
x_{25}	The coefficient of information and communication platform's functioning in the field of providing medical services	The ratio of information and communication platform's users in the field of medical provision to the total number of medical service's users	Stimulator
x_{26}	The coefficient of user's awareness in the application of information and communication technologies for obtaining medical services	The ratio of users who know how to apply information and communication technologies to receive medical services to the total number of users	Stimulator

x_{27}	The coefficient of personal's data protection when using information and communication technologies for obtaining medical services	The ratio of the number repelled attacks on the infringement of personal data when using information and communication technologies to obtain medical services to the total number of attacks	Stimulator

The next set deals with the indicators reflecting the possibilities and accessibility for suppliers and clients to receive medical services via a digital online environment. It reflects subsets of indicators of the Information and Communication Technologies Development Index. Their distribution by type is shown in Table 3.

Table 3: **Indicators that characterize the possibilities and accessibility for suppliers and clients to receive medical services via a digital online environment (X_3) [developed on the basis of *Committed to Connecting the World*, 2022]**

Designation	Name of the indicator	Content of the indicator	Type of indicator
x_{31}	The coefficient of mobile cellular phone subscribers	The ratio of the number of subscribers who have a mobile cell phone (smartphone) to the total number of residents of the territory	Stimulator
x_{32}	The coefficient of active mobile broadband contracts	The ratio of the number of subscribers who have active contracts for mobile broadband access to the total number of residents of the territory	Stimulator
x_{33}	The coefficient of Internet bandwidth per Internet user (bit/s)	The ratio of Internet bandwidth to the total number of Internet users in the territory	Stimulator
x_{34}	The coefficient of medical service providers who have a PC, smartphone, tablet, etc	The ratio of subjects providing medical services with a PC, smartphone, tablet, etc. to the total number of subjects providing medical services in the territory	Stimulator
x_{35}	The coefficient of subjects providing medical services with access to the Internet	The ratio of subjects providing medical services that have access to the Internet to the total number of subjects providing medical services in the territory	Stimulator
x_{36}	The coefficient of medical service's Internet users	The ratio of the user's number of medical services who use the Internet to the total population of the territory	Stimulator

x_{37}	The coefficient of fixed (wired) broadband contracts	The ratio of the number of contracts for fixed (wired) broadband access to the total number of residents of the territory	Stimulator
x_{38}	The coefficient of active mobile broadband contracts	The ratio of the number of active contracts for mobile broadband access to the total number of residents of the territory	Stimulator

According to the authors, it is advisable to introduce a group of indicators that will characterize the economic component of the digital and information-communication technologies application in the enterprises providing medical services. This set of indicators makes it possible to reveal several aspects of financing the digital and information-communication technologies development by the specified subjects (Table 4).

Table 4: **Indicators that characterize the economic component of the digital and information-communication technologies application in healthcare enterprises providing medical services (X_4) [author's development]**

Designation	Name of the indicator	Content of the indicator	Type of indicator
x_{41}	The coefficient of digital infrastructure's software component financing at enterprises in the field of medical services	The ratio of costs for the software component of the digital infrastructure to the total costs of the enterprise	Stimulator
x_{42}	The coefficient of digital infrastructure's technical component financing at enterprises in the field of medical services	The ratio of costs for the technical component of the digital infrastructure to the total costs of the enterprise	Stimulator
x_{43}	The coefficient of digital infrastructure's communication component financing at enterprises in the field of medical services	The ratio of costs for the technical communication component of the digital infrastructure to the total costs of the enterprise	Stimulator
x_{44}	The coefficient of innovative subsystem financing at enterprises in the field of medical services	The ratio of the costs of providing the innovative subsystem to the total costs of the enterprise	Stimulator

x_{45}	The coefficient of scientific and research subsystem financing at enterprises in the field of medical services	The ratio of the costs of providing the scientific and research subsystem to the total costs of the enterprise	Stimulator
x_{46}	The coefficient of financing in human capital, its qualification for the possibility of applying software, technical and communication components of the digital infrastructure at enterprises in the field of medical services	The ratio of costs for staff training for the possibility of using software, technical and communication components of the digital infrastructure at enterprises in the field of medical services to the total costs of the enterprise	Stimulator
x_{47}	The coefficient of financing of the enterprise's management subsystem in the field of providing medical services	The ratio of the costs of providing the management subsystem to the total costs of the enterprise	Stimulator
x_{48}	The coefficient of state support	The ratio of the share of state costs for the provision of software, technical and communication components of the digital infrastructure at enterprises in the field of medical services to the total costs of the enterprise	Stimulator
x_{49}	The coefficient of financing information security (personal data)	The ratio of the cost of technical support and software, information protection systems used to create information and communication protection to the total costs of the enterprise	Stimulator
x_{410}	The coefficient of digital technologies' application profitability of enterprises in the field of medical services	The ratio of net profit to revenues received during the provision of medical services with the help of an online digital environment	Stimulator

The last set is a group of indicators for evaluating the digitalization management system at healthcare enterprises providing medical services, which will reflect the peculiarities of managing the processes of information-communication technologies application by the specified subjects (Table 5).

Table 5: **The indicators for evaluating the digitalization management system of healthcare enterprises providing medical services (X_5) [developed on the basis of *Markina, Dyachkov, Zos-Kior, Syomych, 2021; Markina, Safonov, Zhylinska, Diachkov, Varaksina, 2018*]**

Designation	Name of the indicator	Content of the indicator	Type of indicator
x_{51}	The manageability coefficient of the digitalization management system of enterprises in the field of medical services	The ratio of the competencies possessed by the management personnel of the digitalization management system to the general competencies possessed by the head of the corresponding level	Stimulator
x_{52}	The coefficient of proprietary software factor	The ratio of the software developed by the employees of the enterprise, which is used to ensure the provision of medical services, to the general software	Stimulator
x_{53}	The coefficient of own technical means	The ratio of technical means developed by employees of the enterprise involved in providing medical services to the total number of technical means used	Stimulator
x_{54}	The coefficient of management system's flexibility by digitalization of the enterprise	The ability of the digitalization management system to quickly adapt the organizational structure to external and internal needs	Stimulator
x_{55}	Availability and relevance of the regulatory and legal support management system for digitalization of the enterprise	(From 0 to 1, where 0 – there is no regulatory and legal support for the digitalization management system of the enterprise; 0.33 – available outdated and outdated partially formalized legal support for the digitalization management system; 0.66 – available outdated fully formalized legal support for the digitalization management system; 1 – available current fully formalized legal support for the digitalization management system)	Stimulator
x_{56}	Availability of digitalization management system policy at the enterprise	(From 0 to 1, where 0 – there is no digitalization policy for the provision of medical services; 0.5 – the digitalization policy for the provision of medical services is available, but not formalized; 1 – there is an effective and efficient digitalization policy for the provision of medical services at the enterprise)	Stimulator

x_{57}	Availability of a digitalization strategy at the enterprise	(From 0 to 1, where 0 – there is no digitalization strategy; 0.33 – the digitalization strategy is present, but not formalized; 0.67 – the company's digitalization strategy is defined; 1 – the company's digitalization strategy is defined, which is integrated into the general strategy of the company's development)	Stimulator
x_{58}	Availability of a division of management of digitalization of medical services at the enterprise	(From 0 to 1, where 0 – there is no medical services digitization management unit at the enterprise; 0.5 – a medical services digitalization management unit is available, but not formalized; 1 – a formed and organizationally established medical services digitalization management unit	Stimulator

Conclusion

Currently, all the participants in the healthcare system and medical industry around the world are developing innovative and cost-effective service models based on modern technologies, both in medical institutions and outside them. They are based on the principles of delivering high-quality, cost-efficient, and smart healthcare. We observe a coherent reorientation from the volume of medical services to their worth for the consumer. The programs are developed and implemented to improve operational efficiency via modern technologies, aimed at managing population health, promoting a healthy lifestyle, and monitoring social determinants of healthcare. Thus, the method of assessing the level of digital and information technologies application based on five sets of indicators and analyzed in this study is relevant and significant. These integrated indicators sets cover various areas of digitalization activity of healthcare enterprises in providing medical services. This technique will make it possible to identify problem areas in the application of digital and information-communication means and technologies and their management, and also provide strategic prospects for their development by each subject of the healthcare system. Consequently, it will improve the quality of medical services in general.

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PERSONNEL SECURITY MANAGEMENT TAKING INTO ACCOUNT THE MODERN THREATS AND RISKS OF THE DEVELOPMENT OF AGRICULTURAL ENTERPRISES

Mykola Zos–Kior

Doctor of Economics, Professor,

I. Markina Department of Management,

Poltava State Agrarian University,

Poltava, Ukraine

Iryna Hnatenko

Doctor of Economics, Professor,

Department of Entrepreneurship and Business,

Kyiv National University of Technologies and Design,

Kyiv, Ukraine

Volodymyr Tkachenko

Philosophy Doctor in Management,

Poltava State Agrarian University,

Poltava, Ukraine

Safonov Yuriy

Doctor of Economic Sciences, Professor,

Deputy Director,

Scientific Institute of

Education Content Modernization,

Kyiv, Ukraine

Abstract

The study of the issue of personnel security management, taking into account modern threats and risks of the development of enterprises in the agri-food sector, is conditioned by the

lack of a single approach to the implementation of the algorithm of this process. In addition to the factors of personnel security formation, in the period of crises and bifurcations, the personal level of responsibility is especially important, in particular, in relation to corruption risks. Therefore, in order to obtain an objective assessment of the level of personnel security of the enterprise, it is advisable to monitor a large number of indicators that comprehensively analyze the state of the enterprise in the agri-food sector in order to fully take into account the systemic nature of its personnel security. This question in the context of the hysteresis of the management system of agri-food enterprises, taking into account the temporal factor, determines the relevance of the research topic. The proposed division of personnel security indicators provides grounds for the formation of separate indicators that would eliminate personnel risks by modes and attributes through the appropriate value base and in accordance with the signature of impulses for each level. For example, to ensure a high level of personnel security of agri-food enterprises, the necessary parameters are: staff stability, their educational and qualification level, labor discipline and social protection. Summarizing personnel security assessment methods, we systematize actions to neutralize and prevent risks at agri-food enterprises: prevention of theft, damage to property, and destructive actions by enterprise personnel; prevention of the negative impact on the economic security of insufficiently qualified employees of the enterprise, ineffective personnel management regarding the preservation and development of the intellectual potential of the enterprise; prevention of risks and threats related to personnel, their intellectual potential, labor relations in general, etc.

Keywords: management, personnel security, agri-food enterprises, threat, risk, corruption.

In addition to the factors that form personnel security (corruption, professional, informational, social and motivational security, life security, interpersonal security), in the period of crises and bifurcations, the personal level of responsibility is especially important (professional and personal competences, individual work performance, labor competitiveness of the employee, personal employee's labor responsibility, employee's rights and obligations). Therefore, in order to obtain an objective assessment of the level of personnel security of the

enterprise, it is advisable to monitor a large number of indicators that comprehensively analyze the state of the enterprise in the agri-food sector in order to fully take into account the systemic nature of its personnel security. This issue in the context of the hysteresis of the management system of agri-food enterprises, taking into account the temporal factor, determines the relevance of the research topic.

Literature Review

The state of protection of personnel security is determined mainly by two groups of indicators: indicators of personnel composition and realization of personnel potential, as well as indicators of risks and threats to personnel security. In the process of synthesizing an integral indicator, it is advisable to use an analytical method that is based on the selection of a set of coefficients, the determination of their limit values and weights, and the calculation of group indicators. This allows you to get a generalized integral indicator, the value of which corresponds to one of 4 security levels: high, medium, minimal or critical. It is for this reason that the coefficients of harmony and timeliness of salary payments, the ratio of the rates of growth of productivity and wages, financial losses due to the fault of employees and physical aging of personnel, as well as groups of indicators of social security of employees and safe working conditions are assigned to the indicators of personnel security. Thus, the integral assessment includes 6 groups of indicators: stability and loyalty of personnel, characteristics of the remuneration system, educational and intellectual level of employees, efficiency of personnel use, social security of personnel and safe working conditions (Arefieva O. V., Lytovchenko O. Yu., 2008; Bondarenko-Beregovych V. V., 2021; Burda I. Ya., 2011; Dub B. S., 2021; Zhivko Z. B., 2019; Zhydetska H. V., 2016; Ilyashenko O. V., 2016; Kravchenko O. O., 2020; Kurepin V. M., 2020; Meheda N. G., Marenich A. I., 2012; Poppypko Yu. A., 2016; Reverchuk N. Y., 2004; Fen K. S., 2018; Khalin S. V., 2019). The relevance of this issue increases in the context of the hysteresis of the management system of agro-food enterprises, taking into account the temporal factor.

The purpose of the article is to investigate personnel security in the context of the hysteresis of the management system of agri-food enterprises, taking into account the temporal

factor.

Materials and Methods

The decision of the tasks put in the article is carried out by means of such scientific and special methods of research: analysis and synthesis, systematization and generalization, dialectical approach.

Results

Yu. A. Poskrypko developed a methodology for determining the level of personnel security in the enterprise's economic security system based on its integral assessment by a group of indicators. According to the author's methodology, the assessment of the level of personnel security in the enterprise's economic security system depends on three main groups of parameters:

ESP = f (SP, SD, SL), (1)

where ESP – is the level of ensuring personnel security in the economic security system of the enterprise;

SP – indicators of the level of personnel security in the process of recruitment and adaptation of personnel;

SD – indicators of the level of personnel security in the process of personnel development and control;

SL – indicators of the level of personnel security in the process of motivation and formation of personnel loyalty (Poppypko Yu. A., 2016).

Yu. A. Poskrypko even determined the level of profitability of ensuring personnel security in the system of economic security of the enterprise, which is mainly influenced by the following indicators: the share of personnel who were hired, but resigned at their own will during the trial period (inverse dependence), the specific weight of costs on personnel training and development and the specific weight of the premium and bonus parts of wages) (Poppypko Yu. A., 2016). The parameters of the specific weight of personnel training costs and premium and bonus parts of

wages, according to the research of this author, reveal the greatest influence on the level of profitability of providing personnel security in the economic security system of the enterprise, therefore, in his opinion, the development of personnel through training and improvement of the motivational mechanism of enterprises can to be considered as key components of the mechanism for ensuring personnel security in the system of economic security of an agri-food enterprise (Poppypko Yu. A., 2016).

According to O. O. Kravchenko's research, personnel security in the management system of agri-food enterprises should be oriented on a number of indicators formed on the basis of personnel risk elimination:

- Labor force mobility (employee movement indexes; employee admission and exit level indexes; employee dismissal indexes for reasons; workforce supply and demand indexes);

- Use of labor force (indices of the use of working time of employees; indices of the number of workers who were in conditions of forced part-time employment; indices of the level of forced part-time employment; indices of loss of working time due to being in conditions of forced part-time employment);

- Wage level (indexes of the average monthly nominal wage; indices of the average monthly real wage; indices of the average monthly wage of full-time employees; indices of the number of employees whose wages are paid within the subsistence minimum; specific weight of the structural components of the wage fund; indices of the average monthly wage for hours worked);

- The state of wage payments (indices of arrears to the population from the payment of wages and social benefits; indices of arrears from the payment of wages; ratio of the amount of arrears from the payment of wages to the wage fund; indices of arrears from the payment of wages to employees of economically active enterprises at the expense of budget funds);

- The state of registered collective agreements, labor disputes and strikes (indices of the number of registered collective agreements; indices of the number of employees covered by collective agreements; indices of the number of collective labor disputes) (Kravchenko O. O., 2020).

Thus, taking into account the need for the complementary influence of formal and

informal institutions, S. M. Ilyashenko describes the assessment of the economic security of the enterprise by its components: intellectual - various indicators of staff turnover, the level of scientific research and design work, personnel education, etc.; personnel - similar to the previous one, their combination is possible (Dub B. S., 2021; Ilyashenko O. V., 2016). The main groups of criteria directly in personnel security are indicators of: the numerical composition of the personnel and its dynamics; qualifications and intellectual potential; efficiency of personnel use; qualities of the motivational system (Zhivko Z. B., 2019).

According to Z. B. Zhivko, explicit negative actions in relation to the interests of personnel security objects, which require preventive fixing in the relevant indicators to avoid institutional traps and prevent opportunistic behavior, are the following: deviation of the values of the established control indicators from the limit in the negative direction; an increase in the amplitude of the dynamics of the established indicators by values greater than permissible; occurrence of unexplained financial, technological and informational phenomena and processes; occurrence of force majeure circumstances; unclear or negative behavior of individual employees and their groups; the occurrence of conflict situations between internal and external business entities; suspicious interest on the part of external subjects in the activities of the company, division, object, its personnel, management, information, material means and funds; facts of embezzlement, damage to property, disappearance of money and documents, other illegal actions; attempts of unauthorized access and use of internal information; the emergence of problems of personal safety of employees, etc. (Zhivko Z. B., 2019)

Many special methods and technologies are used in practice for the assessment and identification of various risks, their elimination, aggregation and formation of a foresight map of mutations and mimicry in the economic and temporal content of development. This is also a method of spontaneous identification/detection of possible risks and research of business processes in order to identify internal and external factors of risk occurrence and their impact on the enterprise of the agro-food sector. Surveys based on specially developed questionnaires, as well as industry analysis, technical audits and inspections are popular. Market research, modeling of interdependencies, statistical and threat analysis, SWOT, PEST, PESTLE FMEA analysis, tree of events and errors are used to assess risks. Risks are identified by brainstorming based on their classification. Sometimes a series of interviews are conducted, based on pre-designed questions.

A useful risk identification tool is the Delphi method, which allows you to reach a consensus and conduct a preliminary safety analysis, form a list of threats and risks taking into account the characteristics of materials, equipment used or produced in a given process or industry, operating conditions and the relationship between components management systems of agro-food enterprises. ISO/IEC 31010:2009 suggests using HAZOP (hazard and operability study), that is, a structured and systematic study of the reaction of a system, process, procedure or product to a change in key parameters (Bondarenko-Beregovych V. V., 2021).

In particular, with regard to the HAZOP method, in the study of personnel safety, each part of the project is analyzed in order to identify deviations that may occur as a result of achieving the desired performance, their potential causes and possible consequences. A simplified alternative to the HAZOP study is a structured what-if analysis. A more generalizing tool is also used - "scenario analysis", which includes the analysis and evaluation of possible options, including based on the development of descriptive models of future expectations. Possible future scenarios are created through imagination or extrapolation, and various risks are analyzed with the assumption that these scenarios can be realized. One of the widely used methods of system risk analysis is the "Event Tree", in which an initial failure analysis is performed to determine the causes and consequences of a possible future failure for the overall system risk or reliability. Event tree analysis uses similar logic and calculations as error tree analysis, but the approach is different. In the latter case, a deductive approach is used (from a system failure to its causes), while in the event tree analysis, an inductive approach is used (from a standard failure to its consequences). Another semi-quantitative method that allows you to assess the risks associated with an undesirable event or scenario is the analysis of the levels of reliability of protection means, which determines the adequacy of control measures and risk mitigation. Other quantitative methods that can be used to assess personnel risk in agri-food enterprises are Markov analysis, Monte Carlo simulation, sensitivity analysis, scenario analysis, FN-curves, Bayesian statistics and Bayesian networks, human reliability analysis and risk indices. The well-known auditing company Deloitte has developed a risk management concept that includes 9 principles of building a Risk Intelligent organization (Bondarenko-Beregovych V. V., 2021).

The concept of Risk Intelligent-enterprise involves the application of a single definition of

risk, which can equally be used to preserve or increase the value of an enterprise in the agro-food sector. At the same time, the enterprise of the agri-food sector uses a single model of risk management that takes into account all the internal needs of the enterprise of the agro-food sector. The concept of Risk Intelligent-enterprise is built on the basis of a clear definition and formalization of the key role, area of responsibility and authority for risk management. Building a Risk Intelligent enterprise is based on the creation of a single environment that supports the activities of all divisions and business functions in the field of risk management. Employees responsible for the implementation of the concept of Risk Intelligent-enterprise must possess all the necessary skills and abilities regarding risk management and be responsible for the development, implementation and support of risk management. Within the framework of the Concept, the joint responsibility of all structural divisions for the implementation of risk management programs is assumed, and individual business processes (cross-cutting functions: finance, information technology, personnel management) must provide the necessary volume of support for the risk management system. At the same time, constant control over the risk management system is carried out, including for the purpose of identifying and eliminating its shortcomings (Bondarenko-Beregovych V. V., 2021).

According to V. V. Bondarenko-Beregovych, regarding the method of determining the integral indicator of personnel security of an agri-food enterprise, social indicators of economic security should be used: the level of remuneration in relation to the average indicator for the industry or the economy as a whole, the level of salary arrears, loss of workers time, the structure of personnel potential (age, qualification) (Bondarenko-Beregovych V. V., 2021). Disturbing the specified set of indicators, in the general list of indicators for monitoring and evaluating the security system, among internal threats, the author singles out: outdated methods and forms of communication, distortion of information; non-fulfillment of production norms, non-compliance with technological requirements and quality standards; rheumatism, damage; conflicts, non-fulfillment of agreements, unauthorized leakage of information; misappropriation of funds, violations of the regulator's requirements, both conscious (falsification of documents) and unconscious (errors) (Bondarenko-Beregovych V. V., 2021).

Specifically, regarding indicators of personnel and intellectual security (the author combines personnel and intellectual security in his research, considering them inseparable due to

the modern features of the development of the knowledge economy): labor productivity; personnel turnover ratio; salary return ratio; coefficient of educational level; the share of costs for internal (external) research work in the total costs of production; coefficient of the share of costs for personnel management (Bondarenko-Beregovych V. V., 2021).

The approach proposed by Yu. Pockpypko, in which the sub-systems of the indicators of personnel safety in the context of the stages of management by pepconal at agricultural enterprises are highlighted of the leisure sphere, namely: indicators of full provision of personnel safety in the hiring process and personnel adaptation (complex implementation of evaluation technologies in the hiring process employee, part of employee who was hired, but did not pass the probationary period due to non-compliance of qualification with the requirements of time or for other reasons, part of employee who was hired, but being released at his own will by the train of the experienced tempo, the part of the personnel, which was accepted for work, but he pushed hard discipline with the help of a demanding pace, the specific weight of expenses for attracting personnel in the total amount of expenses for ensuring personnel safety); indicators of full assurance of personnel safety in the process of training and personnel control (the part of the personnel that did not request attestation, the part of the personnel that used the training and training programs, the part of the personnel that There was a capital complaint against the company, a part of the company, which created a threat to human security the company due to violation or abuse, the specific weight of training costs and the use of personnel in the total amount of costs for ensuring personnel safety); indicators of the full provision of personnel safety in the process of motivation and formation of employee loyalty (part of the employee who is fired or was fired for any reason, full satisfaction of the employee, full loyalty and personnel, the level of participation of personnel, the specific weight of premium and bonus shares in the structure of the fund to pay the employee) (Kurepin V. M., 2020).

The researcher V. M. Kurepin presented an automatic generalization of the set of indicators for assessing the personnel safety of the enterprise and its respective components:

1) Safety of life activity: level of organization of side forces; coefficient of study discipline; the share of the expenditure on the coverage of work in the general expenditure on the public sector; injury frequency coefficient; the number of employees employed in conditions that

do not meet sanitary and hygienic standards; the rate of recovery of the coefficient of professional satisfaction of the customer; creation of the actual fund of the 1st employee and the maximum possible; weave the side hair through the needle.

2) Social-motivational: the specific weight of welfare in the production process; the rate of recovery of the average monthly maintenance fee; the coefficient of the ratio of the average salary to the average salary by industry; the ratio of the rate of return of the fund to the payment of salary and profit; a part of the additional salary in the morning; the number of employees receiving a pension; Productivity of paper; the ratio of the rate of recovery of productivity and salary; flow coefficient of personnel; payment capacity; the share of expenses for cultural and household services of employees in general expenses for public utilities; the rate of recovery of the housing and utility service utilization rate; a part of the social events in the general room will be paid for by the public; the level of social security of employees; the number of employees who work under the conditions of partial part-time work; number of freelancers and part-time workers.

3) Professional: the coefficient of open staff; share of employees trained in new professions at the company; part of the personnel engaged in research and development works; part of the cost of education and qualification improvement; coefficient of invention; coefficient of personnel growth; the possibility of spending on sales; the number of employees who have completed vocational training or increased their qualifications; training schedule for one employee; staffing ratio.

4) Anti-conflict security: the level of organizational culture development; level of customer loyalty; the level of conflict in the enterprise; degree of employee satisfaction with work; the level of social pressure on the enterprise; the level of cohesion of the training team; the degree of satisfaction of employees with the style of entrepreneurship; part of established conflicts (Kurepin V. M., 2020).

The author argues these conclusions with a systematic analysis and generalization of the components of personnel security, among which he singles out in particular: information security; physical security; technological security; global security; financial security; administrative-independent security; aesthetic safety; intellectual security; pension security;

national security; anti-conflict security; psychological and communication safety (Kurepin V. M., 2020).

The author H. V. Zhydetska generally distinguishes 6 levels of security: owners, shareholders; top management, leadership; personnel; organization of business processes; operational activity of the enterprise; accounting, analysis, audit (Zhydetska H. V., 2016).

This division provides grounds for the formation of separate indicators that would eliminate personnel risks by modes and attributes through the appropriate basis of value and in accordance with the signature of impulses for each level. For example, to ensure a high level of personnel security of agri-food enterprises, the following parameters are necessary: staff stability, their educational and qualification level, labor discipline and social protection (Zhydetska H. V., 2016). And to assess the risk, for example, of official abuse (according to the Midot method), it is advisable to use the following indicators: openness, embezzlement, organizational tolerance, corporate norms (Poppypko Yu. A., 2016).

Conclusion

Summarizing the demonstrated methods of personnel security assessment, we systematize actions to neutralize and prevent risks to personnel security of enterprises in the agri-food sector:

- Prevention of corruption, fraud, damage to property and destructive actions by the company's personnel;

- Prevention of the negative impact on the economic security of insufficiently qualified employees of the enterprise, ineffective personnel management regarding the preservation and development of the intellectual potential of the enterprise;

- Prevention of risks and threats related to personnel, their intellectual potential and labor relations in general;

- Prevention of official abuse and fraud by employees (unauthorized access, attempts to hack the network, sale of information to competitors, etc.), kidnapping and blackmail of managers/key specialists;

- Prevention of damage to equipment, leakage of commercial information, cybercrime,

appropriation of company assets;

- Prevention of theft of financial and material and technical means, destruction of property and valuables, disclosure, loss, leakage, distortion/destruction of official information, malfunction of technical means; provision of production activities, including means of informatization.

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PSYCHOLOGICAL AND PEDAGOGICAL ASPECT OF SCIENTIFIC AND METHODOLOGICAL PROVISION OF INNOVATIVE ACTIVITIES IN INSTITUTIONS OF GENERAL SECONDARY EDUCATION

Olga Kijan

Candidate of Pedagogical Sciences,

Head, Department of Innovative Activity

and Research and Experimental Work,

Scientific Institute of Education Content Modernization,

Kyiv, Ukraine

Abstract

The article presents generalized psychological and pedagogical views of innovative educational processes, the essence of which is the renewal of the pedagogical process, the introduction of new formations into the traditional education system, its renewal, which is characterized by increased attention to the individual, directing the efforts of teachers to the development of the creative potential of participants in the educational process.

The vectors of education development that require the use of innovative pedagogical technologies, the creative search for new or improved systems, models, principles, approaches to education, significant changes in the content, forms, and methods of education, upbringing, management of the educational pedagogical process in innovative institutions of general secondary education are specified.

The state of the modern system of secondary education, which is in need, is analyzed introduction of innovations, modern methods of educational and methodological support, training of a teacher who will be able not only to accept all the challenges of education but also to become an active participant in changes, the relationship of the professional growth of the teacher with the innovative activities of the educational institution.

The psychological and pedagogical aspects of the innovative activity of the general secondary education institution are outlined, and the concept of “practically oriented education”

is revealed, which is characterized by the active involvement of teachers in innovative activities, the teacher's readiness to improve professional skills, innovative thinking, innovative culture, and self-development.

Attention is drawn to the fact that today requires school education to direct the psychological and pedagogical service of educational institutions to search for effective ways of providing assistance to educators in the implementation of modern innovative implementations since the national education system is largely determined by the innovative development of pedagogical education, which fulfills the important task of staffing all link of education and must meet public demands, take into account world trends and recommendations of international organizations regarding the training of highly qualified pedagogical workers who are able to solve complex tasks and learning problems, specified in the Concept of the Development of Pedagogical Education, Education, and Development, which involves conducting research and/or implementing innovations.

Keywords: aspect, psychological-pedagogical aspect, innovative activity, innovative thinking, innovative culture, pedagogical innovations, scientific and methodological support, the institution of general secondary education.

Formulation of the problem. The modern stage of education development in the conditions of the unfavorable influence of economic and socio-cultural factors is characterized by the search for ways, methods, and means of self-improvement, self-development, and self-actualization of a creative and competitive personality. As stated in the Concept of the Development of Pedagogical Education, "the training of pedagogical workers must meet public demands, take into account world trends and recommendations of international organizations, regarding the training of highly qualified pedagogical workers for all components of education, who are able to solve complex tasks and problems of learning, education, and development, which involves conducting research and/or implementing innovations".

Pedagogical teams of educational institutions must be ready to participate in the creation and implementation of the latest methods (technologies) of teaching and education, to combine their own pedagogical activity at a high professional level with the dissemination of best

practices, expert activities and mentoring based on their own pedagogical experience. Reformation and innovative activities are the only way to become a competitive and innovative educational institution in the modern educational space.

Education is the comprehensive development of an individual, his talents, intellectual, creative, and physical abilities; the formation of values necessary for successful self-realization, education of citizens who are capable of conscious choice. The development of the education system in Ukraine is determined by the Constitution of Ukraine, the Laws of Ukraine “On Education”, “On Comprehensive General Secondary Education”, and the Concept of “New Ukrainian School”, therefore every teaching staff of an educational institution strives to create conditions for the comprehensive development of students, to give them the opportunity to express themselves and self-determination, to provide scientific-theoretical, practical and general cultural training. to create a favorable psychological and comfortable environment for those seeking education. One of the priority directions of the modern educational system of Ukraine, which is confirmed by modern state laws and regulatory documents, is the orientation of teachers to personal responsibility for the quality of providing educational services and the transition to the practical implementation of a person-oriented model of education and upbringing.

Analysis of recent research and publications. The modern institution of general secondary education and society increasingly need a teacher who is ready to work in an innovative mode, even in the conditions of martial law. Therefore, researchers and scientists pay considerable attention to the study of the role of the teacher, his personal, methodical, and technological readiness as a subject of innovative activity in research on educational innovation.

Domestic and foreign scientists are actively developing the problems of the sociocultural foundations of innovative activity, focusing attention on the subjects of innovative transformations (H. Vasyanovych, I. Zyazyun, A. Yevtodyuk, Yu. Karpova, V. Kremen, M. Podimov, M. Potashnyk, K. Rogers, T. Rogova, P. Sauch, etc.) and aimed at the humanistic nature of the relationships of all participants in the educational process: interaction, mutual understanding, dialogue (I. Beh, L. Vozniuk, I. Dychkivska, A. Kapska, N. Osukhova, I. Pidlasy, S. Kharchenko, etc.).

In recent years, the number of studies, including dissertations, devoted to the preparation

of teachers for innovative activities, the development of their innovative and creative potential, readiness for the implementation of innovative pedagogical systems, and management of innovative processes has increased (I. Bogdanova, I. Gavrish, L. Danylenko, T Demyanchuk, O. Dubaseniuk, N. Duka, I. Ermakov, O. Kobernyk, D. Mazokha, I. Pidlasy, L. Podymova, O. Popova, O. Shapran).

Fundamental issues of professional and pedagogical training of educational personnel and the formation of teachers' readiness for professional activity are considered by A. Boyko, O. Gluzman, S. Goncharenko, G. Grebenyuk, V. Yevdokimov, I. Zyazyun, L. Koval, V. Kovalev, L. Kondrashova, Z. Levchuk, O. Mishchenko, O. Moroz, V. Shcherbina and others.

A. Yermolenko, T. Makhinya, Z. Ryabova, V. Oliynyka, F. Frekh, K. Clayton, O. James, and D. Karen define readiness for innovative activity as an internal force that forms the innovative position of a teacher. In terms of structure, it is a complex integrative formation that encompasses various qualities, properties, knowledge, and skills of an individual. As one of the important components of professional readiness, it is a prerequisite for the successful activity of a teacher, the maximum realization of his capabilities, the disclosure of creative potential, and ensuring the effectiveness of the implementation of innovative pedagogical technologies.

Innovations in pedagogy reflect a complex and long-term process. V. Zakharchenko, S. Kalashnikova, V. Kremen, V. Lugovoi, A. Stavytskyi, Yu. Rashkevich, Zh. Talanova and others note that "educational (pedagogical) innovations are the result of a creative search for original, non-standard solutions to various pedagogical problems". The direct product of creative search can be educational technologies, original educational ideas, forms, and methods of education, and non-standard approaches in management. A by-product of innovation as a process of creative activity is the growth of the teacher's and manager's pedagogical skill, the level of his innovative culture, and design thinking. The creative search leads to the development of a holistic system of the teacher's personality, which significantly affects the personality of the student, who values teachers who introduce innovations more. [6]

At such lessons, they work more actively, and the desire to test their own capabilities in innovative activities is awakened in them. In the innovative institution of general secondary education, an intensive rethinking of values is underway, stereotypes of pedagogical thinking are

being overcome, and deep systemic transformations are being carried out, which relate to all aspects of the modernization of the educational process through new approaches to educational and methodological and resource provision, and institutions in which pedagogical and student teams are experimenting, test, implement new pedagogical ideas, theories, technologies, can be considered innovative.

Many studies conducted in educational institutions confirm the view that there is a significant gap between the adoption of innovations and their implementation. In most cases, there is even a wide gap between the introduction of new methods, technologies, and support for such innovations, as many of them have not been implemented, or have not been implemented in accordance with the regulatory framework.

Highlighting previously unresolved parts of the overall problem. The psychological-pedagogical aspect of the scientific-methodological support of innovative processes in institutions of general secondary education requires the mobilization of efforts to find effective ways of self-improvement of the professional skills of each teacher. The psychological-pedagogical service of an educational institution cannot remain aloof from the modernization innovations taking place in education, since the modern conditions of innovative activity of educational institutions affect changes in priorities in the activities of the psychological-pedagogical service of the institution, which must make efforts to shift them from the psychological-pedagogical accompanying students to the psychological and pedagogical support of teachers and their educational and methodological support. This will help to understand not only what needs to be changed, but also the psychology of the modern teacher and student. Sociological research data confirm that more than 87% of teachers are busy searching for new approaches, means, and forms of educational activity in general secondary education institutions.

Under such conditions, the innovative activity becomes an integral factor in the development of the professional development of each teacher and his educational and methodological support, a social order is formed for new approaches in the system of pedagogical education, new pedagogical thinking, and a new attitude toward the teacher towards his professional activity.

The purpose of the article is to substantiate the psychological and pedagogical aspects of

scientific and methodological support for innovative activities in general secondary education institutions; determination of effective areas of psychological and pedagogical support of innovative educational activities in an educational institution and disclosure the features of professional improvement of a teacher with the help of a system of educational and methodological support.

Presenting main material. The main goal of the educational institution is the continuous process of increasing the efficiency of the educational process while taking into account the needs of society, as well as the needs of the person seeking education. Application of the latest achievements of pedagogy and psychology, use of innovative learning technologies, computerization of the educational process; a high level of education, innovative culture, ability to creative work, professional development contributes to the formation of professional and moral life motivation, an active civic and professional position. Under such conditions, the qualification and successful performance of professional tasks depends on the quality of interaction with people in specific sociocultural and professional situations, therefore it is so important that each educational institution has its own position and ways of improving educational and methodological support, which is a set of documents that contain a system description of the educational process and subject to implementation in practice.

Educational and methodological support of the institution of general secondary education defines a system of analytical, organizational, diagnostic, search, research, scientific and practical, and informational activities, which is based on the achievements of modern science and pedagogical experience and acts as a didactic means of managing the training of teachers, an information model of the educational system, defines the structure and displays the elements of the process.

“Ensuring the educational process with high-quality scientific and methodical developments (work programs of educational disciplines, practice programs, materials for conducting practical classes, textbooks, training aids, handbooks, methodical recommendations, etc.) is an important component of ensuring the quality of the innovative educational process - V. Riznyk notes. Therefore, at the present stage, an equally urgent issue is the study of the problem, the development of the psychological-pedagogical aspect of scientific and methodological

support for the implementation of innovative activities, the formation of the readiness of members of the teaching staff for innovative search, corrective means of self-improvement and the development of the teacher's creative potential, which should be given considerable attention.

S. Vitvitska expresses the correct opinion that “innovation is not just the creation and implementation of innovations, it is changes that are of a significant nature, accompanied by changes in the style of activity, the way of thinking of its subjects. The determinant of novelty refers not only to time but also to the qualitative characteristics of changes”. [1, pp. 237–242]

The innovative orientation of education is one of the psychological and pedagogical aspects of building an information society, the result of the realization of trends and awareness of the growing role of innovative processes.

Innovations in the education system are gaining a mass character and are implemented on the basis of the application of new ideas, consistent implementation of innovative models, and learning technologies. Therefore, there is an objective need for the formation of an innovative culture of the teacher’s personality.

Ukrainian psychologist V. Panok emphasizes that “...based on the basic principles of providing psychological and socio-pedagogical services for all participants in the educational process of the educational institution. This principle provides for the construction of such organizational models of psychological services that could ensure the provision of psychological and socio-pedagogical assistance to all subjects of the educational process. To reveal this opinion, it is worth using the principle of scientificity, which means that all the activities of the psychological and pedagogical service are based on scientific approaches, methodology, and principles of scientific psychology. The methods, techniques, and technologies used in the activities of psychological and pedagogical service specialists must be scientifically based, valid, and reliable”. [1, pp. 237–242]

This is traced in the combination of the best pedagogical and psychological heritage of science and practice of the past with the latest, innovative, technological research, which is the main idea of the pedagogical concept of Academician I. Zyazyun - updated education today needs a competitive teacher. “Education” the outstanding teacher-scientist and philosopher I. Zyazyun convinces, “is not possible without the Teacher, whose name is associated with victories

and defeats. He always embodied the wisdom of social consciousness and had an unparalleled influence on the entire society. He was always a citizen and a professional, a mentor, a guide to the future". [3, pp. 24–31]

In other words, the innovative thinking of the teacher, his innovative culture, should be based on ensuring the need for the formation of students' thinking. Educational innovations and services provided by an innovative institution of general secondary education should not only be exciting for students but also contribute to the delegation of the child's capabilities and abilities from the point of view of the "resources-processes-priorities" model [3, p. 111].

Since the implementation of innovations begins with the activity of the teacher, the pedagogical team, an important direction is the preparation of the teacher for the perception of innovative activity and his attitude to innovations. Each teaching team must choose psychological and pedagogical aspects, the solution of which will help the successful implementation of innovations. All innovative processes in the institution of general education begin with the innovative thinking of the management of the educational institution; innovative administrative management style; high level of organizational culture; the motivation of the teaching staff for innovative activities and reforming the management mechanisms of pedagogical systems and processes.

The psychological-pedagogical aspect of the scientific-methodological support of innovative activity in institutions of general secondary education consists of help, in the form of supervision or interview, conducting educational seminars, and training, since innovativeness characterizes the professional skill of each teacher. A special role in the organization of psychological and pedagogical support is played by non-traditional forms of work with teachers: pedagogues- councils, pedagogues-disputes, pedagogues-trainings, business games, role-playing games, seminars-workshops, co-working spaces, professional debates, schools of pedagogical experience and methodological skills, which consider the implementation of innovative pedagogical technologies, methods, interactive methods, methods and forms of work; conducting research work; approval of scientific methodical and educational literature; dissemination of pedagogical experience; informing about innovations, conducting conferences, methodological seminars, pedagogical readings in educational institutions, methodological support for innovative

activities, encouraging innovative teachers and creating pedagogical conditions for the formation and application of innovative technologies, informing by holding various competitions, encouraging the use of pedagogical innovations, performance analysis the introduction of pedagogical technologies and their impact on the effectiveness of the educational process, by placing presentation materials on the pages of electronic publications. After all, researchers associate the new pedagogy with such characteristics as useful, progressive, positive, modern, and advanced. The preparation of teachers for innovative activities is the process of forming the personality of a teacher who is aware of the purpose of innovations, has a perfect command of pedagogical techniques, and achieves effectiveness in work.

Cases of innovative pedagogical findings are created for methodical assistance to teachers, and methodological recommendations for their use are developed. Such forms of work provide an opportunity to activate the creative search of teachers, to transform the collective into like-minded people, ready to perceive and implement innovative pedagogical technologies with the aim of forming their “innovative culture” and “innovative behavior”. The success of the implementation of educational technologies depends on the psychological readiness of pedagogical workers for innovative activities.

The phenomenon of the concept of “personal readiness for activity” is primarily manifested in a person’s ability to organize, perform, and regulate activity. In addition, scientists believe that readiness for activity is determined by many factors, the most important of which are the system of methods and goals, the availability of professional knowledge and skills, the direct involvement of the individual in the activity, in the process of which the needs, interests, and motives for acquiring essential, significant, most modern knowledge and abilities.

Components of a person’s psychological readiness for professional activity: motivational (psychological attitude, interest, attitude, need for success), cognitive-operational (knowledge of the subject, methods, and means of activity, understanding of tasks and their assessment), emotional (sense of responsibility, confidence in success), volitional (self-control, focus on the task), as well as professionally important personality qualities and professional self-awareness. A teacher’s readiness for innovation is a component of readiness for professional activity and includes psychological, theoretical, and practical aspects. Scientists include motivational,

creative, technological, and reflective components in the structure of readiness of a teacher-innovator, which have a clearly defined psychological basis and are an important condition for the professional and personal self-realization of a teacher.

Therefore, the work of methodical services regarding educational and methodological support of institutions of general secondary education today mostly concentrates on the spread of pedagogical innovations, and the search for optimal forms of organization of the educational process and implementation of innovative activities is a condition for the effective development of an innovative institution of general secondary education. One of the important tasks of innovative development is the renewal of the psychological and pedagogical service by improving the scientific and methodological support of the educational process.

Conclusions from this study and perspectives. The main goal of educational and methodological support is the development of managers and pedagogical workers of general secondary education institutions of relevant knowledge, skills, abilities, qualities, and motivation, which contribute to innovative activity, which is characterized by the systematic introduction of qualitative changes in management and educational processes. Because the preparation of a teacher for the implementation of innovative practice is the potential of the teacher's professional competence, which allows for a relatively small period of time to solve the task of intensive formation and development of abilities, which are necessary for the realization of professional and personal self-determination as a necessary condition for the productive growth of the creative potential of the teacher’s personality. The formation of pedagogical competence, which affects the creative development and professional growth of the teacher, is another stage of solving urgent problems in the implementation of innovations.

It is the individual-psychological and emotional-volitional characteristics of the teacher that determine the teacher's psychological readiness or unreadiness for innovative activities. A priority factor for the success of the innovative activity is the teacher’s awareness of the practical significance of various innovations in the education system, not only on a professional level but also on a personal level.

Since the psychological and pedagogical aspect is not fully covered in the research. in particular, the question of the specifics of the development of the innovative activity of the

teacher in the institutions of general secondary education. Ambiguity, complexity, and multifaceted phenomenon of innovative activity require new approaches to its analysis.

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CREATING A SAFE SCHOOL: KEY PRINCIPLES OF IMPROVING THE QUALIFICATIONS OF TEACHERS

Klokar Nataliia

Doctor of Pedagogical Science, Professor,

Scientific Institute of

Education Content Modernization,

Kyiv, Ukraine

Abstract

Among the numerous issues of the functioning of the field of education that need to be solved, one of the most important is the preparation of teachers to work in the conditions of new challenges. The article reveals the key principles of the development of an educational program for improving the qualifications of teachers to create a safe and healthy educational environment of the armed forces in the conditions of emergency, conflict situations, and hostilities. Attention is focused on taking into account classical and modern principles of andragogy in the process of building such a program, compliance of its content and forms with modern challenges, taking into account the results of foreign and domestic research on the issue of creating a safe educational institution, best practices, requests and needs of teachers.

Keywords: safe institution, emergencies, hostilities, educational program of professional development, principles of andragogy, content and forms of education.

Formulation of the problem

The issue of the safety of the participants in the educational process of the general secondary education institution (hereinafter referred to as the General Secondary Education Institution), the provision of equal and proper conditions for obtaining an education and the organization of a safe educational environment is extremely relevant for the functioning of the General Secondary Education Institution in emergency situations and hostilities. Among the

numerous normative-legal, material-technical, economic, and financial problems that need to be solved, one of the most important is the preparation of teachers and managers to create a safe and healthy educational environment for SEN, which will contribute to the effective implementation of various forms of education, compliance with safe conditions of education.

The purpose of the study: is to reveal the key principles of the development of an educational program for improving the qualifications of teachers and leaders on the issue of creating a safe and healthy educational environment of the armed forces in the conditions of emergency, conflict situations, and hostilities.

Introduction. Advanced training was and remains one of the most massive and effective forms of training teachers for changes, development of their professional competences, and acquired a new sound in the process of modernization of education in Ukraine [1]. Deepening of knowledge on the key foundations of state policy in the field of education, study of the current legal documents regulating the activity of the sector and general secondary education, as well as the changes and additions adopted to them regarding the functioning of educational institutions in the conditions of martial law, should form in the audience a deep understanding the importance and urgency of the development of professional competences in the matter of creating a safe and healthy educational environment in order to ensure the quality of education, the preservation of life and health of participants in the educational process.

Presenting the main material

A characteristic feature of the state policy of Ukraine in the conditions of conflicts, emergency situations and hostilities was the adoption of a number of normative legal acts on ensuring equal, proper and safe conditions for obtaining an education and organizing a safe educational environment in educational institutions of various levels, in particular, the Law of Ukraine "On Amendments to Certain Laws of Ukraine Regarding State Guarantees in the Conditions of martial law, state of emergency or state of emergency" (2022), Concept of security of educational institutions (2023), Procedure and conditions for granting subventions (with

amendments) from the state budget to local budgets for the provision of safe conditions in general secondary education institutions (2023). PPE require special attention in the context of preserving the life and health of participants in the educational process, as they are the most massive in terms of their number (12,929) and the amount of coverage of participants in the educational process (3,985,866 students, 387,988 teachers) and, accordingly, have their own specifics building an effective model of a safe school and organizing the educational process. As of March 2023, they teach in the usual mode (full-time), units. institutions – 4,475 (34.6%); teach remotely, unit – 3,975 (30.7%); teach mixed, unit – 4,479 (34.7%) [2]. Taking into account the complexity and urgency of the process of transforming each school into a safe educational institution, the primary priority for solving the task at the level of the local community and the ZZSO is the preparation of teachers and managers to create a safe and healthy educational environment, which should be based on taking into account domestic and foreign scientific developments and the best practitioners on the issue of creating a safe school. Such a task in the conditions of the institution's autonomy can be solved by the efforts of the administration in cooperation with subjects of professional development, primarily regional institutions of postgraduate pedagogical education.

The issue of safety of educational institutions, preservation of life and health of participants in the educational process constantly remains in the field of view of the international community.

In today's conditions, in addition to the UN Convention on the Rights of the Child (1989), it is worth considering a number of relevant international acts that regulate children's safety, including: the Declaration on the safety of schools, which was opened for approval in 2015 at the international conference of the Global Coalition for the Protection education against attacks (Oslo, Norway); UN Security Council Resolution 2427 (2018) on measures to protect children during armed conflicts; UN Security Council resolution 2601 (2021), which focuses directly on the link between education and peace and security and emphasizes the invaluable role that education plays for individuals and societies, in particular as a vital safe space. The use of the main provisions of the Council of Europe project "Protection of children's rights during the war and in the post-war period in Ukraine", aimed at increasing the effectiveness of mechanisms for creating child-friendly conditions, is also essential for the formation of a valuable component of

the professional competences of teachers and leaders of ZZSO on the issue of creating a safe school and justice procedures, as well as on increasing the potential of various target groups of specialists working for and with children and will be implemented within the framework of the Council of Europe Action Plan for Ukraine "Resilience, Recovery and Reconstruction" (2023-2026). The UNICEF representative office in Ukraine has prepared recommendations "Safe schools in Ukraine: a conceptual note for the Ministry of Education and Science of Ukraine", which presents a number of considerations regarding the place of safe schools in the process of reforming the education sector.

State structures of Ukraine, together with communities of various levels, are implementing a number of projects aimed at creating a safe educational institution, preserving the life and health of participants in the educational process. So, to improve the partnership and communication of the police, rescuers, educational institutions, the community, parental and student governance, the Ministry of Internal Affairs of Ukraine, the Juvenile Police of Ukraine, the Ministry of Education and Science of Ukraine and the Ministry of Regions, with the participation of the Educational Ombudsman, the Association of Cities of Ukraine, the All-Ukrainian Association of United territorial communities and UNICEF Ukraine and the NGO "Safe Educational Space" launched the "Safety Educator" pilot project, the purpose of which is to introduce a responsible person in educational institutions, whose powers will include the functions of creating a safe environment in educational institutions for children and teachers during the educational period process The Ministry of Internal Affairs of Ukraine launched the project "Safe educational environment in conditions of war" (2022), which provides for the implementation of a number of preventive measures for the safety of participants in the educational process. The Analytical Center of the Association of Women Lawyers of Ukraine, revealing the issue of the security of the educational process, emphasizes its special relevance when one or another region falls into a zone of conflict, military aggression, occupation and emphasizes the key principles of creating a safe educational environment based on international law.

The official websites of the Ministry of Education and Science of Ukraine, DNU "Institute of Development of Education", information resource Osvita.ua constantly publish relevant materials on the creation and functioning of a safe educational institution. On the page of

the official websites of almost all subjects of professional development, there is a section that reveals the issue of creating a safe and healthy educational environment of the institution, and provides methodological advice to teachers and managers on work in this direction.

The question of creating a safe educational institution is substantiated in numerous works of foreign researchers and practitioners, which, for the most part, reveal the problem of the growing threat of shootings in schools. Thus, the Georgia Federal University Research Faculty Center for School Safety, School Climate, and Classroom Management, an interdisciplinary research center focused on both research and outreach/service projects related to school safety, school violence prevention, school climate, classroom management and related issues [3]. American researchers Amanda B. Nickerson, Ryan Renda, Shane Jimerson, Nancy G. Guerra, in "Safe Places to Learn: Advances in Safe School Research and Practice," discuss the existing disagreements among researchers, policy makers, and the general public regarding school safety and how best to achieve the goal of making schools safe [4]. Fast Facts on School Safety: Research by Margaret Sumney and Harold Jordan concluded that creating a school environment based on trust and respect is a vital step in effectively preventing violent attacks on school communities [5]. On the pages of the US Department of Justice's Research, Development and Evaluation Agency, which conducts scientific research to improve knowledge and understanding of crime and justice issues through science, Mary Pauline Carlton's materials on school safety are published as a new area of research. The author claims that schools should have a systematic and coordinated approach to gathering and processing information about threats, adequate response and documentation of responses. [6]

The question of a safe educational institution is in the field of view of domestic researchers who consider various aspects of the problem, in particular: theoretical aspects of designing a safe educational environment of educational institutions (Misyak Yu.V.), organization of the educational process in the conditions of martial law (Bazhenkov E.V.), psychological, ecological, informational aspects of a safe educational environment (N.R. Berezyuk), formation of a psychologically safe educational environment in a general educational institution (G.M. Meshko, O.I. Meshko), psychological safety of the educational environment: essence and conditions of creation (O. I. Bondarchuk), modeling of a safe educational environment (Vodolazska T. V.), a safe educational environment for children with PLO under

martial law (Gurgula T. V.), the structure of a safe educational environment in a higher military educational institution (Nechypor N. M.) and others. The question of organizing a safe educational environment as a modern challenge is revealed in various ways in the scientific, methodical, and information collection of the Ternopil OKIPPO [7], among which are the professional development of pedagogical workers of community educational institutions in the conditions of the challenges of martial law (Zagnibida N.M.), the practice of training teachers in Sumy oblast to create a safe and healthy educational environment (V.M. Uspenska). The study "Respect and safety: monitoring of educational institutions' websites in Ukraine" conducted in partnership with the NGO "Center for a Better Internet" is aimed at identifying problems related to the dangerous dissemination of personal information (personal data) on the sites and pages in social networks of general secondary education institutions of Ukraine " and DNU "Institute of Modernization of the Content of Education" with the support of "Counterpart International" [8].

The analysis of foreign and domestic research and practices provides grounds for the conclusion that the issue of training teachers and heads of PPE for creating a safe PPE requires further study.

The subject of our research, which covered 748 trainees - pedagogical and scientific-pedagogical workers of ZZSO and higher school (PC courses in various forms and directions, participation in regional, all-Ukrainian scientific and methodical events in the period 2021-2023), is the issue of professional development of pedagogical and managerial personnel in the process of professional development for the creation of a safe, barrier-free and healthy educational environment of the ZZSO. Based on the results of the work, it was confirmed that the preparation of PC courses needs to take into account, first of all, the specifics of the adult category, the use of forms and content of education, built on both classical principles (Malcolm Knowles) and the main provisions of modern andragogy, such as:

- The key role in the educational process belongs to the learner;

- Priority of self-education, self-study;

- The content and forms of education are built on the results of studying the requests and needs of the students of the respective categories;

- Practical focus of training, awareness of the importance of acquired new knowledge,

developed skills and abilities, their actualization in the student's practical activities;

- Use of the professional and life experience of the trainees, adjustment of the acquired professional experience in accordance with the challenges of the time;

- An individual approach to learning taking into account the socio-psychological characteristics of each student, taking into account his age characteristics;

- Differentiation and electivity, which involves giving the student the right to freely choose the content and forms of education;

- Strengthening the role of motivation for the professional and personal development of the listener, using reflection as a process of self-awareness in professional activity;

- Providing feedback between the trainee and the subject of professional development;

- Focus of training on the continuous development of the student's personality as a professional and citizen.

In the process of scientific research, at the first stage of our work, a number of questions (questionnaires, interviews, surveys) were studied that reveal the students' vision and understanding of the importance of creating a safe school, the degree of readiness to carry out such work, knowledge of regulatory and legal acts, motivation for further development of professional competences on the issue of creating a safe PPE, etc. So,

- 97% of listeners answered that the issue of safety of participants is educational

of the process is of primary importance for the functioning of the Armed Forces in the conditions of emergency, conflict situations, and hostilities;

- 54% are ready to carry out work on creating a safe PPE;

- 58% – know the normative legal acts that regulate the issue

creation of a safe school, however, clarifications are needed regarding the changes and additions that were adopted during the martial law period;

- 85% - have a desire to take PC courses on the issue of creation a safe and healthy educational environment of the ZZSO.

Taking into account the existing request for the training of teachers and heads of PPE

for the work of creating a safe educational institution, it is important to prepare an appropriate educational program of PC, which should provide for the solution of a number of actual tasks that will help students in their practical activities. The program should focus on the development of both general and professional competencies of trainees in accordance with the Professional Standards for the professions "Head (Director) of PPE", "Pedagogue of PPE". In this context, guided by the key principles of andragogy and taking into account the results of scientific research and best practices, it is important to provide most of the hours for conducting practical classes and guided independent work of students.

In the process of preparing the PC educational program on creating a safe PPE, it is worth taking into account the results of an experimental study in the part of studying the opinion of PC course participants regarding the content of such a program. Thus, 86% of respondents pointed to the need to update knowledge on the legal framework for creating a safe school; 74% believe that PC courses should clarify the concept of "infrastructure of PPE" in terms of creating a safe educational environment; 67% want to update their knowledge of psychological support, taking into account the impact of military aggression, conflict and emergency situations on the participants of the educational process, studying modern methods of their psychological support; 79% are concerned about resource provision for the needs of inclusive education and the organizational model of distance learning for students with special educational needs; 75% want to delve deeper into the issue of implementing a network form of education in the conditions of martial law; 61% would like to update their knowledge of health-saving technologies in education; the greatest interest in the creation of a safe 33CO (93%) arouses among listeners the issue of children's safety on the Internet, in particular, dangerous Internet challenges, their impact on the mental and physical health of children and adolescents, cooperation with parents.

Therefore, the main content of the PC educational program should take into account the modern trends of education in Ukraine, the peculiarities of its functioning in the conditions of martial law, and include for study topical issues of concern to practitioners, in particular:

- Regulatory and legal support for the implementation of the tasks of the National

strategies for building a safe and healthy educational environment in ZZSO. It is worth considering the factors that led to the creation of a safe educational institution at the level of the state, regions, local communities and schools; regulatory and legal documents, changes to them,

regulating the security of educational institutions, the possibility of implementing a network form of education.

- International legal acts regulating the issue of safety of educational institutions, experience of creating a safe educational environment, implementation of health-preserving technologies, prevention and counteraction of negative phenomena in the environment of children and adolescents, interaction of educational institutions and parents in solving the specified tasks, training of teachers for professional activity in conditions of hostilities, emergencies, conflicts situations, etc.

- The creation of a safe infrastructure of ZZSO as a set of its components (structures, buildings, systems and services) in their interconnection, necessary for functioning and providing comfortable, reliable and safe conditions for participants of the educational process; architectural accessibility, arrangement of existing and construction of new protective structures of civil protection of educational institutions, provision of minimum requirements for the proper organization of the educational process in protective structures: arrangement of a safe space in the institution (shelter, emergency exits); implementation of mine safety measures (informing students, joint activities with the involvement of the State Emergency Service); the scheme of evacuation of participants in the educational process and the algorithm of actions of employees and students of the institution during evacuation; organization of safe transportation of students and teachers to/from ZZSO; establishment of cooperation with the services of the National Police, the Ministry of Internal Affairs, the State Emergency Service, intersectoral interaction and the involvement of social institutions.

- Prevention and countermeasures against negative security phenomena in educational environment, provision of effective psychological support of participants in the educational process in emergency, conflict situations, military operations; strengthening the police presence in educational institutions with the provision of effective police services to prevent the commission of offenses by participants in the educational process and in relation to them; introduction of a system of early warning and evacuation of participants in the educational process in case of an attack, risk of an attack on an educational institution or other danger; transformation of the psychological service of the education system and psychological support, taking into account the impact of military aggression, emergency and conflict situations on the

participants of the educational process.

- Development of professional competences of the staff of the Ministry of Education and Culture on the issue of creation and observance of safety by the participants of the educational process: a model of the organization of systematic training of the participants of the educational process in various forms in the conditions of emergency situations; implementation of current educational training programs on life safety, civil protection, pre-medical assistance, psychological support of participants in the educational process, stress resistance, countering socio-psychological threats; the organization and content of the work of ZZSO on the formation of the competence of children, parents and pedagogical workers regarding safe behavior in the digital space and the potential danger associated with irresponsible attitude to the use of the Internet.

- Creation of safe, barrier-free and inclusive educational environments for students with special needs; resource support for the needs of inclusive education in emergency situations (normative-legal, program-methodical, informational, material-technical); implementation of partnership pedagogy, establishment of a favorable social and emotional climate in ZZSO and class team, Internet space; creation of barrier-free physical space for safe movement and comfortable stay of children (elevators, ramps, lifts, appropriate lighting, noise insulation, etc.); an organizational model for providing distance learning for students with special educational needs; provision of psychological-pedagogical and correctional-developmental services, teaching aids to persons with special educational needs.

- The use of health-saving technologies aimed at the complexity of the development of physical culture and the strengthening of motor activity, the development of a system of healthy nutrition, proper medical care of students and employees of educational institutions, taking into account the peculiarities of training in conditions of emergency, conflict situations, and hostilities; risks to the health, development and well-being of children as a result of uncontrolled and irresponsible use of information and digital technologies (contact risks, content risks, behavioral risks, health risks, etc.), the most dangerous Internet challenges, their impact on mental and physical health of children and adolescents; cooperation with parents as the most effective way to protect children in the digital environment.

An important component of the PC educational program should be the guided independent work of students, aimed at improving the practical skills of teachers and leaders in creating a safe space of PPE in the conditions of emergency, conflict situations, and hostilities. In this context, it is worth predicting a number of tasks for further deepening of knowledge on the regulatory and legal support for the creation of a safe and healthy space of PPE, modeling situations, deployment of research and development work, which are designed to develop the skills of critical thinking, reflection, analysis of complex situations, and making the right management decisions.

Conclusions

The urgency of solving the problem of transforming each educational institution into a safe one for all participants in the educational process is undeniable. The study of requests and needs of teachers and managers showed their deep interest in developing their professional competences in the issue of creating a safe PPE through training in PC courses. The success of such training will depend on the quality of the proposed PC educational program, the relevance of its content construction, which should take into account classical and modern principles of andragogy, international experience and best domestic practices, be based on the use of innovative educational technologies. First of all, such a program should reveal the current trends in the development of education in Ukraine, the peculiarities of its functioning in the conditions of martial law, emergency and conflict situations, and include important questions that provide answers to the requests and needs of practitioners.

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3401 Townsend Blvd. Suite 204. Jacksonville, FL 32277

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Phone: +1-904-428-3807

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