

Інноваційні напрямки теоретичних і прикладних педагогічних досліджень в умовах війни (досвід України)

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Анотація. Інноваційні напрями теоретичних і прикладних педагогічних досліджень системи освіти в умовах війни дають можливість регулювати навчання, підвищуючи ефективність навчального процесу. Інноваційна поведінка не пропонує учневі адаптуватися до нових умов навчальної взаємодії, вона орієнтована на формування власної індивідуальності, саморозвиток. Важливо розуміти, що інноваційна освіта – це перш за все шлях до виховання гармонійної особистості. Метою інноваційної діяльності вчителя є зміна особистості учня порівняно з традиційною системою, що було зумовлено, як одну з головних причин, вимушеною перебудовою, пов'язаною з війною. Ці зміни стають можливими завдяки впровадженню в професійну діяльність нових напрямків теоретичних і прикладних педагогічних досліджень. Розвиток вміння знаходити мотивацію своїх дій, самостійно орієнтуватися в отриманій інформації, формування творчого нестандартного мислення, розвиток учнів за рахунок максимального розкриття їх природних здібностей, використання останніх досягнень науки і практики. - основні цілі освітньої інноватики. Загальновідомо, що сучасна традиційна освіта передбачає перевантаження навчальних дисциплін надлишковою інформацією. В інноваційній освіті управління навчальним процесом організовано таким чином, що вчитель виконує роль тьютора (наставника). Оволодіння аналітичним мисленням, саморозвиток, самовдосконалення стає пріоритетним завданням інноваційної освіти. Для оцінювання якості знань при використанні інноваційних технологій навчання можуть залучатися експерти – фахівці, які можуть оцінювати

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інноваційні програми. Усе вищезазначене дає можливість отримати якісну освіту в умовах війни в Україні та зумовлює необхідність подальших наукових досліджень.

Ключові слова: теоретичні дослідження, педагогічні дослідження, воєнний час, дистанційна освіта, Україна, розвиток, досвід, трансформація.

Innovative directions of theoretical and applied pedagogical research in the conditions of war (Ukrainian experience)

Annotation. Innovative directions of theoretical and applied pedagogical research in education in war conditions provide an opportunity to regulate learning, increasing the effectiveness of the educational process. Innovative behavior does not offer the student to adapt to new conditions of educational interaction, it is focused on the formation of one's own individuality, self-development. It is important to understand that innovative education is first of all a way to educate a harmonious personality. The goal of the teacher's innovative activity is to change the student's personality compared to the traditional system, which was determined, as one of the main reasons, by the forced restructuring associated with the war. These changes become possible through the introduction of new areas of theoretical and applied pedagogical research into professional activity. The development of the ability to find motivation for one's actions, to independently navigate the received information, the formation of creative non-standard thinking, the development of students due to the maximum disclosure of their natural abilities, using the latest achievements of science and practice - the main goals of educational innovation. It is common knowledge that modern traditional education involves overloading educational disciplines with excessive information. In innovative education, management of the educational process is organized in such a way that the teacher performs the role of a tutor (mentor). Mastering analytical thinking, self-development, self-improvement becomes the priority task of innovative education. To evaluate the quality of knowledge when using innovative learning technologies, experts can be involved - specialists who can evaluate innovative programs. All of the above provides an opportunity to obtain a quality education in the conditions of war in Ukraine and determines the need for further research.

Keywords: research, theoretical research, pedagogical research, war time, distance education, Ukraine, development, experience, transformation.

Introduction

Formulation of the problem in general. Reforming the educational system of Ukraine in the conditions of war involves the development and implementation of innovative educational systems and technologies. The level of implementation of the technological approach is one of the most important criteria for determining the competitiveness and prestige of an educational institution, since educational technologies ensure systematicity, purposefulness, efficiency, and effectiveness of its activities. Thanks to the technology of education, the motivation of the participants of the educational process to study increases, the connection of the educational material with the real challenges of today is monitored. The diversity of the functions of educational technologies is explained by the variability of their structure, the components of which are, in addition to the traditional ones, the latest means of the educational process, in particular interactive, information and communication technologies, as well as distance forms of the organization of learning, which have now gained particular popularity in Ukraine, the countries of the European Union and the world in as a whole. The expediency of using a technological approach is obvious.

Analysis of recent research and publications. The issue of the innovative development of the theoretical and pedagogical research in accordance with the requirements of the

information society in the period of war in Ukraine and the necessity of the distance education has been lively discussed in the scientific discourse. Among the latest publications in this area, it is worth noting such European researchers as V. Davis, N. Longworth, H. Harteyer and L. Vegimont, J. Keyes, D. Orr, D. Van Damme, E. Panitsidis. The works of such scientists as I. Bezzub, H. Viter and O. Kucheruk, O. Gotko and O. Chaikovska, R. Gurevich, I. Dotsenko, O. Zhornova, M. Kislova, S. Semerikov, K. Slovak are known in Ukraine. Despite a significant number of scientific works, the question of the innovation in theoretical and applied pedagogical research in the conditions of war in Ukraine requires further analyses.

Formulation of the goals of the article. The main task of the article is to analyze the specific features of the theoretical and pedagogical research in the conditions of war in Ukraine and the their implementation in the distance education of children during the war time.

Highlighting previously unsolved problems. In modern Ukrainian education, there is no specific and generally accepted concept of innovative activity. Moreover, there is no clear thesaurus of innovative activity, its separate terms are ambiguous and blurred, which creates an illusion of banality and a general understanding of what "innovation" is, and hence another illusion that only the lazy do not "engage" in innovation, especially in education. Based on the existing definitions, it can be considered that innovative education is based on the integration of the most modern and effective educational technologies with intensive scientific research activities, on the connections of university science with the needs of social and economic practice, on the interdisciplinary nature of education. One of the leading ideas of the "New Ukrainian School" concept consists in reforming education precisely in the direction of its innovative nature, aimed not so much at the transfer of knowledge that is constantly becoming outdated, but at the acquisition of basic competencies that allow further - if necessary - to acquire knowledge independently.

Results

In the modern conditions of war, namely from the beginning of February 2022, the development of the world economy, the following stages of the innovation process can be defined: I. Strategic marketing or fundamental and exploratory research. The main tasks of strategic marketing are to identify the possibility of creating a new product based on the needs and desires of consumers, analyzing the market situation; forecasting trends in the development of industries; finding a market segment that is not occupied by a competitor organization; determination of the main parameters of competition and competitive advantages of the product. II. Idea generation and their filtering means the analysis and selection of new ideas revealed as a result of strategic marketing and scientific research.

After selecting various ideas, it is necessary to filter them in order to exclude inappropriate ones. Filtering of ideas is carried out according to the appropriate criteria for evaluating ideas, their importance (level of novelty and competitiveness of the future product; availability of resources; profitability and payback period; level of investment; degree of risk, etc.). III. Applied research is research that is carried out with the aim of practical use of filtering results of fundamental and research works in relation to specific tasks. The results of applied research are patentable schemes, scientific recommendations that prove the technical possibility of creating new machines and devices or applying new production technologies. IV. Technical development - direct use of the results of applied research. The material result of this stage is drawings, projects, standards, instructions, experimental samples. V. Trial marketing - market testing of a new product. The main purpose of trial marketing is to reveal the features of using the new product and the problems of its sale, as well as to determine the production program. VI. Development of innovations includes the following stages: technical development; economic development; production of the installation series (batch); release of the first industrial series. VII. Production and sales - launch of production of a new product or wide use

of new technological processes; ends with sale, transportation, distribution and distribution to consumers. VIII. Consumption (use) and service innovation. IX. Decommissioning and disposal of the object of innovation After that, its functions are performed by the product of the next generation and, thus, the spiral development process is implemented. The set of all stages of the innovation process is called the innovation life cycle. The limit duration of the life cycle of an innovative product is mainly determined by the term of its moral and physical wear or the appearance of new, more efficient models of products [1, p.17-37].

The essence of the post-industrial information society has become significant changes in all spheres of human life. The spread of innovative technologies in the field of education has become an objective pattern determined by the new philosophy of education. Innovations should be considered as effective and effective innovations in the content, methods, means and forms of education and personal training, in the management of the education system, in the organization of the educational process, in the structure of educational institutions. Innovations became especially relevant with the beginning of a large-scale war unleashed by the Russian Federation on the territory of Ukraine, when it became vital to make quick, non-standard, essentially innovative decisions.

Fundamental research is aimed at discovering the regularities of the pedagogical process, at creating general theoretical concepts of pedagogical science. They substantiate the methodology and history of science and are aimed at the expansion and deepening of scientific knowledge, determine the directions of scientific research, and create a basis for applied and practical research. Criteria for evaluation of fundamental research[2]:

- theoretical significance of the obtained results – their influence on the development of theory, transformation and changes of our ideas on the most important issues of education, upbringing, history and methodology of pedagogy;
- probability – discovered facts, phenomena, processes, relationships between phenomena and processes, formulated regularities should objectively reflect and characterize reality;
 - heuristics – fundamental research has a prognostic character, that is, it opens up new opportunities for further research;
- validity and relevance. Applied research, in contrast to fundamental research, on which they should be based, is characterized not only by a narrower problem, a definition for the study of individual partial problems of learning, education and personality development of pupils or students, their cognitive interests, management of the educational process, but also by the fact that they do not involve identifying patterns. The main criteria for evaluating applied research:
- relevance – compliance with the social order, where the trend of the development of general educational institutions, their needs, the lack of development of this problem in pedagogical science is expressed; needs of practice that cause difficulties arising in educational practice;
- practical value of the results of scientific work;
- reliability and reasonableness – the methodology of applied research is based on the results of fundamental research, on a variety of pedagogical experience;
- the novelty of applied research, which makes it possible to enrich the arsenal of content, forms, methods, and means of educational activities. Practical studies are based on applied studies and have the task of bringing the results of these studies to practice. Practical research includes the creation of programs, textbooks, methodological recommendations for teachers and other tools without which the educational process cannot be carried out.

Practical research should not only provide relevant, scientifically based results, but also offer them to practice in a form available for implementation. The main criteria for evaluating

practical research: availability for practical implementation, probability and availability, practical value, practical value, relevance.

Table 3

The main components of the innovation process

The name of the component	The description of the component
Innovation	The result of the introduction of new knowledge, its implementation in new or improved products that are sold on the market, or in a new or improved technological process used in practical activities.
Innovation is a new idea, new knowledge	The result of completed scientific research, research and development, other scientific and technical achievements
Diffusion of innovation	The process of spreading an already mastered, implemented innovation, that is, the application of innovative products, services, technologies in new places and conditions. In the modern conditions of development of the world economy, it is possible to define the following stages of the innovation process

Source: created by author based on [3, p.220]

The development of pedagogical technologies should not be considered as an evolutionary-gradual, planned and consistent process, on the contrary, it was accompanied by certain bursts from time to time. First, the base of pedagogical technology was expanding. In addition to audiovisual education and programmed learning, the foundation of pedagogical technology was built up by informatics, the theory of telecommunications, pedagogical qualimetry (scientifically based assessment and systematic diagnosis of professional activity), system analysis and pedagogical sciences (psychology of learning, theory of cognitive activity control, organization of the educational process, scientific organization of pedagogical labor).

Secondly, the methodological basis of pedagogical technology was changing, a transition from verbal to audiovisual teaching was carried out[6, p.52-54].

Thirdly, active training of professional technologist teachers began. The mass production of the latest audio-visual equipment, such as the VCR, the carousel frame projector, the polyscreen, the electronic board, the circuit mounting rail system, the notebook board for writing with a felt-tip pen, sound and image synchronizers, etc., became widespread. During this period, the technology of the educational process was developed on the basis of a systematic approach, and researchers understood pedagogical technology as the study, development and application of the principles of optimizing the educational process based on the latest achievements of science and technology.

Therefore, modern society needs a specialist with a different typological personality structure, who would be capable of self-development and self-determination in various difficult situations, could clearly define his role in professional activity, be open to accepting the professional experience of others, capable of reflection and psychologically ready to perform professional activity and the use of educational innovations [7].

Meanwhile, the development of a higher school with its established patterns, principles, forms and methods of learning does not always respond promptly to the latest educational technologies in a higher educational institution, and sometimes it holds back the introduction

of new methods and methods of learning. The development of pedagogical science and applied aspects of teaching methods are not always correlated; the first often remains too academic, the second too practical. Therefore, an intermediate link is necessary, which would make it possible to really connect theory with practice. In our opinion, the functions of applied didactics can be taken over by educational technology. The functioning of the education system in the conditions of martial law is characterized by an intensive search for new approaches to learning, innovative forms of organization of the educational process, effective pedagogical and information technologies. That is why supporting the active implementation of innovations in the education sector during the war became one of the key areas of work of the Ministry of Education and Science of Ukraine and its divisions [12, p.42-52]. It is worth noting that in this difficult time, educators themselves have become more active in searching for ways to solve problems in the organization of training for education seekers. Many educational institutions have opened freely accessible platforms with their educational materials. For example, students from all over Ukraine who have access to the Internet can, after registration, use the materials of the Optima school, an online educational platform from the scientific Lyceum named after Klyma Churyumov. The team of the Grand-Expo online school for the period of martial law in Ukraine opened access to 532 case lessons that help children learn, develop, distract themselves from problems related to the war, and spend time with benefit. During the period of martial law, "Atmospherna Shkola" offers to join the "Listener" package free of charge [8, p.14-23].

Distance education center A+ conducts lessons in ZOOM for all children of Ukraine. In the conditions of the war, the issue of creating a comfortable educational environment and organizing the educational process becomes important, especially for those children who have suffered psychological trauma. In order to provide psycho-emotional support to the population during the war, to train teaching staff in working with children, the National Program of Mental Health and Psychosocial Assistance was launched with the support of the First Lady of Ukraine Olena Zelenska [5, p.21-31]. To help specialists of the psychological service of the education system of Ukraine, an end-to-end training program for extracurricular health education "Fundamentals of life safety in the conditions of hostilities" and methodological recommendations for this program were developed, the best practices of psychological and pedagogical support and support of participants in the educational process in the conditions of hostilities were disseminated and of armed conflicts, namely: "Stress as a resource", "Psychological support and accompaniment of adults and children in crisis situations: workshop", "Peculiarities of the organization of distance education during martial law", "First psychological aid to participants in the educational process during and after completion military actions", "Self-help under stress", "Hands of peace", etc.

With the beginning of the aggression of the Russian Federation against Ukraine, we can note that there are many requests for psychological support for children in war conditions, provision of psychological help, in particular emergency, overcoming stress, experiencing loss, grief, sadness and suffering, psychotherapeutic work with children who have lost parents, home, health and suffered injuries, survived bombings, became refugees, internally displaced persons. On the initiative of the First Lady of Ukraine Olena Zelenska regarding the National Program for Mental Health Protection and Psychosocial Support, in accordance with the Decree of the Cabinet of Ministers of Ukraine dated May 7, 2022 No. 539, the Ministry of Education and Culture of Ukraine became a member of the working group formed by the Ministry of Health as the coordinator of the program in Interdepartmental Coordinating Council for the Protection of Mental Health and the Provision of Psychological Assistance to Persons Victims of Armed Aggression by the Russian Federation against Ukraine, with the involvement of WHO experts, leading Ukrainian and international experts in the field of mental health (Order of the Ministry of Health dated 20.06 .2022 No. 1052)[9, p.12-15]. In July of this year, the advanced training

course "First psychological aid to participants in the educational process during and after the end of hostilities" developed by the State Scientific Institution "Institute of Modernization of the Content of Education" of the Ministry of Education and Science of Ukraine as part of the National Program of Psychological Health of Ukrainians, on the initiative of First Lady of Ukraine Olena Zelenska. The specified course was created according to the blended learning model, which includes: 10 multimedia lessons in the international SCORM format. Additional materials and practical trainings will help raise the professional level of teaching staff in educational institutions and master modern technologies of psychological first aid according to Save the Children manuals, as well as familiarize teachers with the recommendations of the International Standing Committee (IASC) on referral. The course, approved by the Academic Council of the State Scientific Institution "Institute for Modernization of the Content of Education" of the Ministry of Education and Science of Ukraine, received a positive review from the World Health Organization (WHO)[11, p.11-19].

Conclusion

It can be concluded that the introduction of information and computer technologies in Ukraine should take place taking into account modern world trends and the use of technical, technological and educational tools that already exist in the global educational environment. So, in the course of the conducted reconnaissance, we characterized some of the leading ones global approaches to the symbiosis of information and computer technologies and of the educational process, which, in our opinion, can be integrated and in the development of a new education system in Ukraine. Nowadays, especially, during the war, Ukraine has a difficult task in terms of modernization the national education system in the field of the task of ensuring compliance with the main approaches, principles and tools of the educational process to the modern requirements of the transition in the era information society. We have to take ahead of schedule to adopt the best global models and forms of using information and computer technologies in educational institutions, to invest funds and efforts in the development of the domestic innovative ICT product, put in focus educational reforms, technology and informatization of the educational process, in order not to be left out of the world's progress towards the global information society [4, p.489-495].

The specified task requires a radical revision of the established ones approaches to the organization of national education systems, traditionally built according to the triad "preschool education" - "basic secondary education" - "higher education" and the main direction is to provide a certain set of knowledge, necessary for the transition to the next stage of life. After all, it's already today it is not enough to get certain knowledge once, which should be enough "for everything life". It is time to change the very paradigm of education, in which the main prerogative comprehensive informatization of educational systems and institutions is becoming, total computerization of the educational process and its integration with the national one and the worldwide Internet. The introduction of information and computer technologies in Ukraine has occur at an anticipatory pace and occur simultaneously on all links of the educational process: from preschool education to training scientific personnel and "universities of the third age". The main task informatization of education - to create conditions when the possession of information and computer technologies becomes the main competence requirement for every person at every stage of his life [10, p.17-22]. Thus, during development and the use of innovative pedagogical technology should take into account the following selection factors and design: goals, tasks of mastering an educational discipline (module, topic); nature, the sequence of mastering the disciplines of the educational program; level of methodological competence teacher; the level of educational and cognitive activity of students; external conditions (time, production, economic, etc.); laboriousness of the educational process, ergonomic requirements; the degree of complexity of the content technological training. One of

the promising directions in the future scientific intelligence is the coverage of the methodology of development, application and evaluation of the main competency-oriented technologies for training future qualified workers in professional (vocational and technical) education.

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