ІННОВАЦІЇ В ОСВІТІ

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THE BOUNDARIES OF THE INFORMATION PEDAGOGY IMPLEMENTATION IN THE CONTEXT OF THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE EDUCATIONAL PROCESS

МЕЖІ РЕАЛІЗАЦІЇ ІНФОРМАЦІЙНОЇ ПЕДАГОГІКИ В КОНТЕКСТІ ВИКОРИСТАННЯ ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНИХ ТЕХНОЛОГІЙ В НАВЧАЛЬНОМУ ПРОЦЕСІ

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Urgency of the research. *At the current stage of the development of education, the use of information and communication technologies (ICT) in education has become a process mediated, and sometimes not controlled. It is proved that the introduction of information and communication, digital, electronic resources and technologies facilitates the intensification of the educational process. However, they carry certain dangers. So, without their thorough analysis and identification of certain limits to the implementation of information pedagogy, as a type of pedagogy, which is due to the functioning of information resources, and their development, the consequences of such a fetishization of technological progress can be irreversible not only for education, but for society as a whole.*

Target setting. *In pedagogical science, the question of the measured, balanced, methodically competent use of*

Актуальність дослідження. *На сучасному етапі розвитку освіти використання інформаційно-комунікаційних технологій (ІКТ) у навчанні стало процесом опосередкованим, а подекуди і не контрольованим. Доведеним залишається той факт, що впровадження інформаційно-комунікаційних, цифрових, електронних ресурсів та технологій сприяє інтенсифікації навчального процесу. Разом з тим, вони несуть у собі певні небезпеки. А отже, без їх ґрунтовного аналізу і виявленню певних меж реалізації інформаційної педагогіки, як типу педагогіки, що зумовлений закономірностями функціонування інформаційних ресурсів та їх розвитку, бо наслідки такого фетишизування технологічного прогресу можуть бути не зворотними не тільки для освіти, а і для суспільства взагалі.*

Постановка проблеми. *В педагогічній науці досі лишається проблемним питання виваженого, збалансованого, методично-*

information and communication technologies in the educational process still remains a problematic issue. This problem concerns not only the classroom sessions, but also self-preparation, self-knowledge, leisure time, and the like.

Actual scientific researches and issues analysis. *Studies of the use of ICT in the educational process are studied by such modern Ukrainian scientists as: V. Bykov, A. Hurzhii, M. Zhaldak, A. Kudin, N. Morze, O. Spirin, S. Yashanov, who have their own scientific schools, and continue research in this direction. The following philosophers: V. Andrushchenko, V. Bekh, V. Voronkova, L. Drotianko, V. Kremin, V. Nechytailo, N. Polishchuk, O. Skubashevska, A. Yaroshenko and other famous Ukrainian scientists, are engaged in conceptualization and theoretical analysis of the processes of informatization of education.*

The research objectives *are to determine the boundaries, possibilities and contradictions of the process of implementing information pedagogy in Ukraine in the context of using ICT as an educational technology.*

The statement of basic materials. *The external (cyber-, internet-, social network addiction, cyber plagiarism, life virtualization, video game addiction, information manipulation, depersonalization and so on) and internal boundaries (psychological and physical loads) are identified, and the optimal parameters (the information culture, didactic soundness, controllability, material and technical security, ergonomics, etc.) for the implementation of the tasks*

грамотного використання інформаційно-комунікаційних технологій в навчальному процесі. Ця проблема стосується не лише аудиторних занять, а й самостійної підготовки, самопізнання, дозвілля тощо.

Аналіз останніх досліджень і публікацій. *Дослідженнями використання ІКТ в навчальному процесі займаються такі сучасні українські вчені: В. Биков, А. Гуржій, М. Жалдак, А. Кудін, Н. Морзе, О. Спірін, С. Яшанов, які мають свої наукові школи, що продовжують дослідження в даному напрямі. Концептуалізацією та теоретичним аналізом процесів інформатизації освіти займаються наступні філософи: В. Андрущенко, В. Бех, В. Воронкова, Л. Дротянко, В. Кремінь, В. Нечитайло, Н. Поліщук, О. Скубашевська, А. Ярошенко та інші відомі українські вчені.*

Постановка завдання. *Визначити межі, можливості та суперечності процесу реалізації інформаційної педагогіки в Україні в контексті використання ІКТ як освітньої технології.*

Виклад основного матеріалу. *Виокремлено зовнішні (кібер-, інтернет-, соціально-мережева залежність, кібер-плагіаторство, віртуалізація життя, ігроманія, інформаційна маніпуляція, знеособлення тощо), внутрішні межі (нервово-психічне та фізичне навантаження) та визначено оптимальні параметри (інформаційна культура, дидактична обґрунтованість, контрольованість, матеріально-*

and principles of information pedagogy in the context of the use of information and communication technologies in the educational process are defined.

Conclusions. *The implementation of information pedagogy in the context of using ICT is made possible by determining the optimal parameters: the formation of an information, network, virtual culture; modernization of educational and cognitive activity; organization of control and self-control; the formation of ergonomic thinking; a combination of traditional and new information and educational technologies of education.*

Keywords: *information pedagogy, information and communication technologies, educational process, information society.*

технічна забезпеченість, ергономіка тощо) реалізації завдань та принципів інформаційної педагогіки в контексті використання інформаційно-комунікаційних технологій в навчальному процесі.

Висновки. *Реалізація інформаційної педагогіки в контексті використання ІКТ уможливлюється за рахунок визначення оптимальних параметрів: формування інформаційної, мережевої, віртуальної культури; модернізація освітньо-пізнавальної діяльності; організація контролю й самоконтролю; формування ергономічного мислення; поєднання традиційних і нових інформаційно-освітніх технологій навчання.*

Ключові слова: *інформаційна педагогіка, інформацій-комунікаційні технології, навчальний процес, інформаційне суспільство.*

Urgency of the research. At the current stage of the development of education, the use of information and communication technologies (ICT) in education has become a process mediated, and sometimes not controlled. It is proved that the introduction of information and communication, digital, electronic resources and technologies facilitates the intensification of the educational process. However, they carry certain dangers. So, without their thorough analysis and identification of certain limits to the implementation of information pedagogy, as a type of pedagogy, which is due to the functioning of information resources, and their development, the consequences of such a fetishization of technological progress can be irreversible not only for education, but for society as a whole.

Meanwhile, the modernization of education, the change of classical pedagogical forms, methods, means and even content, is carried out precisely through the implementation of information (electronic, digital) pedagogy, the phenomenon of which is still not sufficiently studied by

the scientific community. The scientific substantiation of the consequences, prospects, opportunities for the formation and implementation of information (electronic, digital) pedagogy is a pressing and urgent task for many humanitarian area of scientific directions (educational philosophy, social philosophy, social communications, personality psychology and communications, learning theory, methods, information and communication technologies in education, etc.).

In addition, urgency of the research is also attributable to integration processes in the global educational space such as: automation, informatization, globalization, internationalization, multicultural and polycultural aspects and so on and so forth.

Target setting. Today, almost every child and mature personality have the opportunity to use one or other information and communication technology, access to the Internet. Naturally, a new type of culture is being formed, which is called differently: information culture, virtual culture, network culture, which is essentially a component of the corresponding cultural phenomenon of modern society. In pedagogical science, the question of the measured, balanced, methodically competent use of information and communication technologies in the educational process still remains a problematic issue. This problem concerns not only the classroom sessions, but also self-preparation, self-knowledge, leisure time, and the like. So, the problem of safe measurement of the use of ICT in the educational process and its challenges in identifying the optimal parameters for the implementation of information pedagogy requires updating.

Actual scientific researches and issues analysis. Studies of the use of ICT in the educational process are studied by such modern Ukrainian scientists as: V. Bykov, A. Hurzhii, M. Zhaldak, A. Kudin, N. Morze, O. Spirin, S. Yashanov, who have their own scientific schools, and continue research in this direction. Considering the system of open education, academician V. Bykov and his co-authors in numerous papers talking about e-pedagogy; e-learning technology; distance education; lifelong education and even a digital humanistic pedagogy. A. Kudin introduced the innovative project “Electronic Pedagogy” at the National Pedagogical Dragomanov University. Academician M. Zhaldak and representatives of his scientific school continue to work on the creation and implementation of educational software tools, improving the methodological system of training teachers of mathematics and

computer science. Over the improvement of educational systems using information-computer and software work such scientists as: Yu. Horoshko, N. Morze, L. Makarenko, S. Serhiienko, S. Spirin, S. Yashanov and other scientists who are researching information and communication technologies in education.

The following philosophers: V. Andrushchenko, V. Bekh, V. Voronkova, L. Drotianko, V. Kremin, V. Nechytailo, N. Polishchuk, O. Skubashevska, A. Yaroshenko and other famous Ukrainian scientists, are engaged in conceptualization and theoretical analysis of the processes of informatization of education. According to these experts, it is the study and justification of the theoretical and methodological foundations of globalization, informatization, virtualization, distance and other epochal changes in education will contribute to the modernization of the education system.

The research objective is to determine the boundaries, possibilities and contradictions of the process of implementing information pedagogy in Ukraine in the context of using ICT as an educational technology.

The statement of basic materials. Comprehensive computerization and informatization of education as a global, worldwide process and multifaceted changes in the life of society as a whole (organization of labor, leisure time, process of knowledge and research), determine the general accessibility of daily life and mastering information and communication technologies. Informatization of social processes means an increase in the volume of information flows, the consumption of information services, an increase in the role of means of access to information in human activities, where education is one of its leading components. Explore the limits of information pedagogy; we are talking about information as a source of knowledge, which is the leading goal of any educational process, where information and communication technologies are learning tools. So, while agreeing with the opinion of other scientists about digital and e-pedagogy, nevertheless, we will consider “information pedagogy with logical-methodological and ideological significance, as a type of pedagogy, the nature and content of which are determined by the laws of the functioning of information resources”, which work is provided by ICT.

The practice of using ICT in education has demonstrated both the positive and negative consequences of such implementation. The use of modern ICT in educational institutions makes it possible to significantly

increase the efficiency of the educational process and free all of the participants in the educational process from a large volume of non-creative work. However, the uncontrolled use of information and communication technologies is accompanied by some phenomena that have a very negative impact on the physical condition of a person and his mental activity. These phenomena can be outlined outside the use of information and communication technologies, conventionally naming them “external” and “internal” boundaries.

Internal boundaries. The internal boundaries of the informatization of the learning process are those that directly affect the physical and mental health of a person. The most dangerous impact that a person experiences in the process of introducing information pedagogy is the negative impact of ICT on the body and the physical well-being of consumers of information services and users of software products. The consequences of this will be: exacerbation of chronic diseases, functional disorders in the nervous, skeletal, circulatory, immune and other systems, general fatigue, blurred vision. That is, when non-compliance with the principles of ergonomics, hygiene requirements and mode of operation, “ergonomic” diseases appear. New diseases associated, in particular, with the influence of computers, peripheral devices and other modern gadgets on the health of those who work with them, doctors began to call this term.

In the modern scientific search at the theoretical level, such scientists as: V. Horashchuk, S. Kyrenko, V. Klymova, H. Kryvosheieva, V. Skumin, L. Tatarnikava and others, are engaged in the development of a health culture.

The intensive use of ICT in the educational process requires careful and responsible consideration of the issues of safety of pupils and students, teachers and lecturer. And it also requires the development of appropriate recommendations, the implementation of which will protect the physical and mental health of people from the negative impact of hardware and software information and communication technologies.

“Compliance with the medical and pedagogical requirements for the use of ICT in the learning process involves: meeting the sanitary and hygienic requirements for equipping workplaces, including monitoring the state and functional characteristics of computer equipment; ensuring electrical safety during the educational process, compliance with the mode of lighting, ventilation, air conditioning and ionization of air; introduction to the educational process of exercises for vision, knuckles

and neck, pauses of psychological rest, relaxation exercises; observance of psychological, pedagogical and sanitary-hygienic recommendations when creating and applying in practice educational electronic resources; the formation of a health-preserving component of the IC-competence; the implementation of interdisciplinary integrations healthy preserving the content of academic disciplines; creating a favorable psychological atmosphere during the course of the educational class" [4, c. 226].

The use of computer equipment and ICT tools in the educational process in Ukraine is governed by the following documents: State Standards of Ukraine "Software programs EOM", State Sanitary Rules And Regulations "The device and equipment of classrooms of computer equipment in educational institutions and the mode of work of students on personal computers (SSRR 5.5.009-98)", by order of the State Labor Inspectorate of Ukraine No. 81 of 03/16/2004 "Safety rules during educational process in the classroom of computer science in educational institutions of the system of general secondary education", "Regulations on the organization of work on labor protection of participants in the educational process in educational institutions", approved by order of the MES of Ukraine No. 563 of August 1, 2001, "Regulations on the Cabinet of Informatics and Information and Communication Technologies for Teaching General Education Institutions", approved by the order of the MES of Ukraine No. 407 of 20.05.2004. It should be noted that these documents relate mainly to general educational institutions and given the year of introduction of these documents, their relevance is highly questionable.

External boundaries. The situation with the external boundaries of the introduction of information technology in the educational process is much more complicated. In the modern information society, it is no longer possible to imagine a situation in which electronic information resources will be ignored, but this, in turn, places additional external boundaries for the organization of the educational process.

According to Kh. Turetska, addiction to visual-virtual means prevents one from obtaining the necessary experience in operating with real objects, disorients a person in the surrounding reality, and forms a gap between reality and fantasy. This prevents the socialization of a person and the establishment of social ties. After all, virtual space is illusory. In it, each person creates a fantastic world for himself, where he

sees himself as a wizard with outstanding abilities, where nothing can be beyond you [5].

Thus, we attribute the following negative phenomena to the external boundaries of ICT use:

1) The lack of information, network, virtual culture;
2) Awareness that the ICT is not a convenient tool for solving scientific, educational tasks, but as a "world entertainment show" not only for children (which is to a certain extent natural), but also for adults;
3) Uncontrolled and unproductive use of ICT tools - an information overload;
4) The dangers of cyberspace (desocialization, cybercrime, cyber plagiarism, cyber sexual addiction, video game addiction);
5) Information manipulation (mass media influence, false information).

Specifying the educational issues it is impossible not to notice the lack of real communication between the teacher and the pupil/ student, which will make the formation of practical competencies and professional skills impossible.

Thus, in spite of the fact that the opportunities provided to society by the ICT and the Internet are truly enormous, a wide range of dangers it generates is also noticeable. Obtaining undoubted advantages from the use of information systems that are built on the basis of global computer networks, society is gradually becoming dependent on their normal functioning. This fact forces us to develop new approaches to protecting the interests of the individuals, society, and the state in this area.

Of course, in modern conditions it is impossible (and wrong) to isolate a young person from the use of network resources. However, they should form ways to neutralize the negative information impact of information networks. The interested participation of adults, who give an objective assessment of the incoming information and filter it, will allow orienting the young person in the information flow correctly. The state should not remain aloof from the problem. There is a need to define strict criteria for the admissibility of placing certain types of information in networks. Despite the fact that the territory of the global network is considered to be the "Territory of Freedom", it is worthwhile to develop working mechanisms for restricting access to individual sites for different age groups of the Internet audience. In part, this is already being implemented in Ukraine. It is necessary to legislate the

responsibility of site owners for the content of the posted information materials and their accuracy. And it is very important that the illegal processes that occur in the global information-computer networks, receive adequate opposition from law enforcement agencies.

Optimal parameters for the information pedagogy application. The information pedagogy implementation in the context of the use of the ICT in the educational process, along with the advantages, has certain risks. Given the risks, it is necessary to comply with the relevant requirements. So, O. Ishchenko [1] highlights the following optimal conditions for the use of information technology in the educational process:

- The material and technical base (the existence of computers, equipment and internet connection) is needed;
- Information culture, where the relevant training of teachers to use ICT and the level of user abilities of pupil/ student becomes important;
- The presence of significant pedagogical experience and the ability to effectively implement modern educational technologies and methods;
- Availability of appropriate pedagogical software that would meet the curricula of relevant disciplines.

Undoubtedly, information and communication technologies have a fairly significant impact on the person, so the level of positive or negative must be corrected by: increasing the level of information culture and computer literacy; pedagogical control and regulation of the impact of information and communication technologies not only in an educational institution, but also in the family; adherence to the system of didactic conditions and principles. Therefore, the educational community is faced with the task of finding and substantiating ways to organize the learning and cognitive process in the context of information pedagogy.

So, there is a primary need to create a holistic information and communication educational space, which would cover different age groups of the population, and also meet the requirements of different levels of information competence of a full-fledged person in a developed information society.

The effective functioning of computer-oriented tools is possible if the system of didactic conditions is adhered to: the purposefulness and the correlation between subjects from the standpoint of the formation of the foundations of the information culture of students; the consistent

and gradual inclusion of students in work with new teaching aids; the choice of teaching methods by teachers, taking into account the didactic possibilities of the computer [6].

Given the current level of use of information and communication technologies in the Ukrainian educational space, information pedagogy requires substantially new measures to resolve the contradiction between technical advances and the environmental safety of the opportunities presented.

The main tasks of information pedagogy within the informatization of the educational process in Ukraine are:

- The creation of a unified information scientific and educational environment;
- The equipping of educational institutions with the computer hardware, software and internet connection;
- The provision of participants in the educational process with the means (hardware, software) and technologies for the exchange, storage, processing of information;
- The creation of methodological support in electronic form (electronic textbooks, simulators, programs for independent work, etc.);
- The creation of an enabling ergonomic conditions;
- The training of qualified moderators of the educational process.

The information revolution, scientific and technical progress and, as a consequence, the emergence of the newest information and communication (electronic, digital) technologies, the Internet, and artificial intelligence have irrevocably changed our life and future. Corresponding changes have occurred and continue to occur in the surrounding world, culture, economy, industry, education and the learning process itself. Modern Ukrainian education is in a critical condition, because the curriculum, hardware and software training, methods and even the competence of educators are several time [3].

The educational process in Ukraine can be described in the form of such an allegory: “A candle teaches an energy-saving light bulb” or “A typewriter teaches a computer”. Therefore, in today's conditions, a modern teacher should be fluent not only in his own subject, but also have a fairly high level of skills in working with ICT in the learning process, while being correct in regard to both methodological and psychological recommendations for using a certain technology.

Taking into account the aspiration of Ukraine to enter the European economic and cultural space, we can draw several interrelated conclusions on the problems of the development of information education and enlightenment.

Firstly, it is necessary to develop a state strategy of informatization, the key points of which should be the tools to convey to the public the idea of the need to improve information literacy and competence. As well as providing this process with legislative, regulatory, organizational, financial, ideological and other mechanisms. The main among these mechanisms should be developed a system of continuous information education throughout life, which was based on European innovative, organizational and pedagogical educational foundations.

Democratization and innovative attitude to all dimensions of the educational process can allow Ukraine to reduce the organizational, material and financial, and the gap of outlook and values that exists between our country and the developed countries of Europe in the development of information and communication literacy, competence and culture, which is the first and the main prerequisite for the country's competitiveness in the socio-economic and socio-cultural dimensions of the European and global space.

Secondly, one of the most important tasks facing society is the diversification of material and financial sources and organizational and functional forms of information education, which is implemented on the principles of lifelong education. This means that the state must first of all develop and legally approve a clear strategy of informatization of the national space, establish clear and understandable norms and rules for all its subjects create preferential conditions for subjects of informational, educational and pedagogical activity.

Thirdly, one of the most important moments in the development of lifelong information education in the course of life is to ensure its systemic nature, as well as to provide staffing and educational potential. The problem here is that different subjects of education have different levels of information literacy when entering the system, and also set themselves different goals that they want to achieve in the process of lifelong learning.

This means that Ukraine needs to intensify training and retraining of personnel, both in terms of information and communication literacy

and competence, and teachers who meet the requirements of modern information education and pedagogy during life [2].

Only under such conditions a significant breakthrough in Ukrainian society in terms of the growth of the information culture of the population is possible, without which Ukraine can in no way compete with European countries both in the economic sphere and in the sociocultural dimension.

Conclusions. In the process of research, we found that to solve this complex, but urgent task, a scientific search and substantiation of the methods, forms, and ways of organizing the educational and cognitive activity of all participants in the educational process in the context of information pedagogy is needed. Research has proven that modern problems, in particular, the formation of motivation and cognitive interest, the establishment of rationally, pedagogically, psychologically, morally, ethically, ergonomically justified dialogue "man – machine" is very important.

The implementation of information pedagogy in the context of using ICT is made possible by determining the optimal parameters: the formation of an information, network, virtual culture; modernization of educational and cognitive activity; organization of control and self-control; the formation of ergonomic thinking; a combination of traditional and new information and educational technologies of education.

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