

Interdisciplinary approach to the problem of health-saving information and educational environment: a view from Russia

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Abstract. The article examines the phenomenon of the information and educational environment through the prism of medical and psychological aspects of its health-saving component, which is one of the most pressing issues in the system of modern education, requiring the closest attention of scientists and practitioners, scrupulous study and adoption of adequate measures; special attention is paid to the technologies of personality-oriented learning, taking into account the needs of the trainee's personality in the context of the informatization of education and based on health and rehabilitation work with them with the aim of improving the health and well-being of the subjects of the educational process. The work was carried out within the framework of the State task for the Program of Fundamental Scientific Research of the State Academies of Sciences for 2013-2020 (in the part of RAO) (approved by the Decree of the Government of the Russian Federation of December 3, 2012 No. 2237-р) on the theme: "Development of the Informatization of Education in the Context information security of the person "(state registration (№ 14.07.00.20.01.04).

1 Introduction

The modern model of education shifts the emphasis from the formation of knowledge, skills and habits of trainees to the integral development of the individual. In these conditions, the social and pedagogical significance of the formation of the value relationship of trainees to health in the process of educational activity, which determines whether their life goals and aspirations are realized. New forms of education, informatization of education [1], new pedagogical technologies are accompanied by an increase in the teaching load and worsen the health of trainees.

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2 Methods

At the same time, up to now, the structure of health disorders of both trainers and trainees has not been sufficiently studied in terms of innovative programs:

- there is no system of differentiated medical and psychological support for trainees studying in different conditions;
- there are not enough medical and psychological recommendations for the selection of trainees in profile groups and medical and psychological control over them in the process of training in programs of increased complexity;
- there are no specific features of the implementation of health and rehabilitation activities with trainees;
- the new requirements as to the structure and content of education, taking into account the health of the trainees, the requirements for information and communication technologies (hereinafter referred to as "ICT"), applied outside the educational institution and within the framework of the information and communication subject environment (hereinafter - ICPS), are not defined their specific negative impact on the health of trainees [2, 3, 4].

3 Research

Informatization of education and its opportunities in terms of interactive information interaction between participants of the pedagogical process make it possible to optimize the correlation between the needs of the individual and their capabilities that determine their well-being and can be achieved by goals and means of education (A.V. Morozov) [2]. At the same time, for the time being only an educational institution can be a place where it is possible to conduct effective health and rehabilitation work. A major disadvantage of most available health saving technologies is their group orientation and low targeting for a specific student or group of students, the personal characteristics of students that can significantly improve the effectiveness of these programs are not taken into account or used. Speaking about personality-oriented learning, we can talk about the need for a personal-oriented educational environment and personal-oriented health preservation [5].

Activities in conditions of an unfavourable educational environment can weaken or enhance the overall impact of education on the nature of the manifestations of certain properties of each type of personality, which necessitates a differentiated approach to the medical and sanitary-hygienic support of the educational process, the integration in the educational process of specialized students for a particular group rehabilitation methods and formation of a profiled health-saving infrastructure institution. When developing modern educational resources used in teaching with the use of ICT, it is necessary to proceed from the features of their presentation for different groups of users with different focus of mental activity, level of visual acuity, hearing, etc. [6].

Of all the variety of existing methods of teaching, more attention is paid to interactive methods in a health-saving educational environment. Under the health-saving information and educational environment (hereinafter referred to as the ITS), we mean specially organized conditions for information interaction between educational purposes in an educational institution, aimed at preserving, developing and developing the individual health of the participants in the pedagogical process, forming an effective model of social relations and positive communication [7].

The relevance of this approach to the organization and conduct of educational activities at the present stage is confirmed by the materials presented in the report "The Health of the Children of Russia as a Factor of National Security" FGBU "Scientific Center for Children's Health" of the Ministry of Health of the Russian Federation [8]. In particular, the

report notes negative trends in the health status of schoolchildren, due to high training loads, chronic stress, hypodynamia and deterioration in the quality of nutrition [9].

It has been established that in the period 1992-2002 the level of prevalence of functional deviations of students in primary schools increased by 84.7%, chronic diseases - by 83.8%. For students in senior schools, the corresponding figures are 73.8% and 39.6% [10]. The structure of illness in children in primary schools is characterized by the prevalence of the pathology of the locomotor system - 24%. Diseases of the digestive system were ranked 2nd - 19%, 3rd - diseases of the nervous system and mental sphere [NCHRM of the Ministry of Health of the Russian Federation].

Disorders of the musculoskeletal system, the nervous system and the psychic sphere, the endocrine system and the metabolism are among the functional dysfunctions. Often the school environment itself harms children's health: school furniture, indoor lighting do not correspond with children's physiology, non-compliance with hygienic modes of work on computers leads to the formation of neuropsychiatric disorders and eye diseases [5].

Products of children's assortment often do not meet the requirements for safety and toxicity, printed products, textbooks - in terms of the quality of printing, paper and font sizes [4]. As a result, we have a situation when a practically healthy child joins year 1, and by the end of their studies they have two or even three chronic diseases [10].

At the same time, Russia has already passed the stage of extensive development of informatization, including in the sphere of education and enters the era of its intensification [7]. In the framework of the topic under consideration, the following data are of particular interest. The proportion of people who have children under the age of 15, who rated the quality of educational services received by their children in educational institutions as unsatisfactory is 10.1% [11]. In terms of the ability of children aged 9-18 years to work a personal computer, the percentage for the total number of children at the corresponding age is 91% and 93.9% [12] in 2011 and 2016.

Table 1. Ability of children aged 9-18 to work a personal computer, as a percentage of the total number of children at the appropriate age 1) [12].

	2011	2014	2016
Children aged 9 - 18 years - total	100	100	100
those			
that possess the skills of working with a personal computer, as a percentage of the total number of children at the appropriate age	91,0	92,7	93,9
¹⁾ Based on the results of the Comprehensive Observation of Living Conditions of the Population			

Table 2. Ability of children aged 9-18 to work a personal computer, as a percentage of the total number of children at the appropriate age 1), RF, Districts [13].

	Children aged 9 - 18 years - total	that possess the skills of working with a personal computer, as a percentage of the total number of children at the appropriate age
2011		
Russian Federation	100	91,0
Central Federal District,	100	95,6
North-West Federal District	100	95,7
Southern Federal District	100	90,7
North Caucasian Federal District	100	60,3

Volga Federal District	100	94,6
Ural Federal District	100	97,9
Siberian Federal District	100	88,2
Far Eastern Federal District	100	92,8
2014		
Russian Federation	100	92,7
Central Federal District,	100	94,8
North-West Federal District	100	95,9
Southern Federal District	100	91,5
North Caucasian Federal District	100	72,7
Volga Federal District	100	95,5
Ural Federal District	100	94,3
Siberian Federal District	100	95,0
Far Eastern Federal District	100	91,4
2016		
Russian Federation	100	93,9
Central Federal District,	100	94,7
North-West Federal District	100	97,1
Southern Federal District	100	94,4
North Caucasian Federal District	100	81,0
Volga Federal District	100	96,2
Ural Federal District	100	96,6
Siberian Federal District	100	94,0
Far Eastern Federal District	100	92,0

Table 3. The distribution of children aged 15 to 18 years according to the frequency and purpose of using the Internet, as a percentage of the total number of children at the appropriate age [14].

	2011	2014	2016
Children aged 15-18 years who have the opportunity to access the Internet - in total	100	100	100
of them			
by the availability of devices for Internet access			
a personal computer and / or a laptop computer	88,9	-	-
personal computer	-	71,1	67,5
laptop	-	43,7	39,2
mobile phone	37,9	58,7	77,4
other	1,0	1,6	4,9
undefined	0,3	-	0,0
by frequency of access to the Internet			
constantly (more than once a week)	83,8	91,5	94,0
from time to time	14,8	2,9	2,2
do not use	1,3	0,4	0,2
by purpose of using the Internet			
search or performance of paid work, dispatch of information	1,6	2,4	2,8

obtaining information, processing documents on the websites of state authorities, state institutions and departments	6,5	4,7	4,9
search for information about goods and services for everyday life, order goods (place bookings), submit your own ads	11,6	14,2	19,2
financial transactions (payment for services, transfer of money)	1,1	3,9	7,7
distance learning on a compulsory or additional program, use of electronic libraries, encyclopaedias, etc.	35,7	65,6	63,8
reading news articles, articles	43,0	40,3	46,6
communication on social networks to maintain personal contacts and exchange information, correspondence with relatives and friends	85,6	88,1	90,2
discussion of social and political issues, participation in Internet events, opinion polls, etc.	3,9	7,2	7,8
downloading movies, music and games, playing online games, etc.	66,9	73,3	73,1
for other purposes	14,5	12,4	11,6

For all the negative dynamics of the state of health of the child population, for the overwhelming majority of them at the age of 15 and more, good health is one of the most relevant basic values [15].

4 Conclusion

The medical and psychological requirements for the health-saving ICPS of the educational institution are inseparable from the organizational ones aimed at their provision and integration into the learning process. In general, they represent a set of conditions that are necessary and recommended to ensure the implementation of appropriate educational programs.

One of the main trends of modern education in the context of its informatization is the wide use of meta-subject links and the special courses formed on their basis on the basis of traditional and information technologies of education. Issues of health savings are also meta-subjective and integrate into the whole content of modern education. In this case, the instructor, considering the content of a particular subject, uses the content and technologies of other subjects (for example, life safety in terms of the foundations of a healthy lifestyle) and ICT for presenting the content of the subject and ensuring the on-line control of its assimilation. Issues of preservation and development of health, while integrating into other branches of knowledge, are not abstract, but specific and controlled. The resulting knowledge is synthesized into new meta-subject content, which has a clear health-saving orientation in accordance with the individual needs of the trainee, form the so-called "information culture".

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