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ASPECTS OF THE CONCEPT "COMPUTER LITERACY" IN THE CONDITIONS OF HIGHER PROFESSIONAL PEDAGOGICAL EDUCATION

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For young professionals information and communication technologies open access to knowledge, provide completely new opportunities for the acquisition of professional knowledge and creativity, and they are introduced to the values of world culture. Therefore, the formation of the information culture of the younger generation is a very important task.

The effectiveness of the widespread use of computers and, ultimately, the prospects for scientific, technical, economic and social development of society depends on how successfully the task of computer literacy is solved among young people. An important role in solving this problem belongs to pedagogical science. A university graduate should have a high degree of upbringing and education, should be ready for self-development and self-realization, feel comfortable in the information environment. It is substantiated that mastering computer literacy changes the psychological parameters of a person, the type of thinking, which in turn allows a person to acquire information competence and information culture.

Stressing the importance of developing the urgent problems of computerization, G. L. Smolyan writes: "Computing technology today penetrates deeply into the structure of human activity, transforms the content and nature of work and learning, poses new challenges for the development of human intelligence and personality, has a serious impact on people's world outlook and ideological concepts give rise to new ways and forms of organizing scientific research" [1].

Of particular importance is the computerization in the conditions of higher professional pedagogical education, which is associated with the need to train specialists who can use computer technology in their professional activities. Analysis of the scientific literature has shown that the computerization of education is determined by the following factors:

- the requirement to improve the quality of training highly qualified specialists who are able to solve complex scientific and technical issues related to the operation and maintenance of computer equipment and the creation of software;
- the need to solve the problem of computer literacy;
- internal needs of the education system itself - the need to improve the quality of the educational process; management optimization in education; improvement of scientific and pedagogical research, increasing the impact of their results on teaching practice [2].

The main approaches to computerization and informatisation of education, on the one hand, and the requirements for training specialists who know how to use computer technology in their professional activities, on the other hand, make the issue of forming computer literacy of university students urgent. In addition, this issue should be considered in terms of the readiness of the individual to self-educational activities through the use of information computer technologies.

In the educational process, computers begin to be used not only in teaching students of mathematical or natural science faculties, but also in teaching humanities students (statistical processing, databases from historians and lawyers, processing texts from philologists, etc.). Computers are widely used for independent and research work of students and teachers.

Thus, the computerization of education is a complex of measures aimed at solving the following tasks:

- the provision of computer technologies for the educational process in educational institutions;
- psychological and pedagogical substantiation of the use of computer technology in the learning process;
- computerization of management processes;
- equipping educational institutions with computer equipment.

The extensive computerization and informatization of production, the pace of technological and scientific and technological progress have led to the fact that in these conditions the change of criteria for professional competence, and therefore social priorities, will inevitably occur several times during the period of active life of one generation. Therefore, it is necessary to focus on the development of a person's creative qualities, his abilities for independent actions under conditions of uncertainty, for acquiring new knowledge and skills in modern methods of obtaining, accumulating, classifying and transmitting information.

The essence of informatization of education is that in any school, university, the student must have access to any electronic information on the subject being studied, regardless of its location (all kinds of databases and knowledge, archives, etc.). Students and teachers, in turn, must have certain skills to select the necessary information, be able to process it for presentation to other people, and therefore the concept of information culture is increasingly used in literature [3]. The formation of computer literacy is one of the most pressing problems of our time. The effectiveness of the widespread use of computer technology, and, ultimately, the prospects for scientific, technical, economic and social development of society depends on how successfully it will be solved. An important role in solving this problem belongs to pedagogical science. A necessary condition for constructing an optimal educational process in pedagogy and computer engineering is a concrete and scientifically based definition of the content of the concept "computer literacy" [4].

The concept of "computer literacy" appeared and became widespread since the mid-70s, which was associated with the development of microprocessor technology and the emergence of personal computers. The task of mastering computer literacy has become one of the main goals of education.

Consider the essence of the concepts of "literacy" and "computer literacy."

Literacy (from the Greek. Grammata - reading and writing) – the degree of a person's reading and writing skills in the native language in accordance with the norms of grammar and spelling and is one of the most important indicators of the cultural level of the population [5]. The specific content of the concept of "literacy" varies at different stages of the economic and political development of a country. To calculate the literacy level, different methods can be used.

In the pedagogical context, the concept of "literacy" is interpreted as a person's ability to speak and write in accordance with the norms of the literary language, in accordance with the grammatical norms of the native language. One of the basic indicators of the socio- cultural development of the population, and in relation to the school - one of the most important conditions and indicators of the quality of education. But, according to GM Kodjaspirova, "literacy has a broader interpretation - as a certain degree of knowledge in one area or another and the ability to apply it" [6].

Despite the fact that in the 80-90s, many works appeared (E.P. Ershov, A.A. Kuznetsov, V.M. Monakhov, E.I. Mashbitz, S.A. Khristochevsky and others), in which, one way or another, the concept of "computer literacy" is considered, there is no clear and reasonable definition of it in the literature. In contrast to conventional literacy, the concept of "computer literacy" is formed in a short time and changes with the development of technology and software. In addition, solving the problem of mastering computer literacy requires considerable investment in education. In this regard, it seems appropriate to clarify the concept of "computer literacy" as a pedagogical category, to establish links between it and more general concepts such as "literacy", "functional literacy", to conduct a pedagogical analysis of the content and structure of computer literacy and on its basis determine the process of its formation.

One of the reasons for the difficulty in defining computer literacy is that this concept has several aspects, each of which deserves a separate consideration. In our opinion, it is necessary to distinguish the following types of computer literacy:

a) Household computer literacy - the widespread use of computing in the home: microprocessors embedded in various devices, automation of the service sector. The "literacy" necessary for this is the acquisition of practical skills in dealing with new PCs, but this requires the development of specially didactic techniques.

b) Professional computer literacy - with the use of BT will be associated with an increasing number of occupations, however, the nature will be different, from simple data entry to developing new hardware and software. Therefore, the content of professional computer literacy is specific to each profession.

c) Mastering the computer as an intellectual means - PCs are a means of providing access and various information, the creation of texts, images and sound images, data banks. The formation of the necessary computer literacy for this is to turn a computer into a kind of external organ of thinking and memory, which can be effectively used in solving a wide range of tasks.

The listed types of computer literacy are not mutually exclusive - they are closely interrelated and partially overlap.

G.G. Vorobev, V.A. Kaymin, V.Yu. Militarev, E.P. Smirnov, S.A. Christochevsky put forward in the first place the ability to handle information, namely:

- a) to reveal the information missing to solve the problem;
- b) to carry out its search with the help of new information technology tools;
- c) to select the necessary information from the entire information array;
- d) to save information in the computer's memory;
- e) to process the information;
- e) to transmit the information using telecommunications;
- g) to use effectively the information obtained in the activities [7].

In our study, computer literacy means the knowledge of using computer technology, an understanding of the fundamentals of computer science and the importance of information technology in society. This is a set of minimal knowledge and skills of a person using electronic-processor technology in everyday and professional activities in order to solve algorithmic problems, store, process and use various types of information using software, as well as the ability to find and perceive information using computer technology, create objects, and establish links in the hypermedia.

In order to successfully diagnose the development of the personality quality we are studying, it is necessary to determine its criteria and indicators of these criteria. Based on the analysis of various points of view (L.Ye. Balashov, V.A. Belikov, V.I. Zagvyazinsky, T.E. Klimova, etc.), we came to the conclusion that the criteria are the qualities, properties and attributes of the studied subject which make it possible to judge its state and level of functioning and development. Indicators are the quantitative and qualitative characteristics of the formation of each property, a sign of the object being studied, that is, a measure of the formation of a particular criterion.

In pedagogy and sociology there are general requirements for the selection and justification of criteria, which, taking into account the object of our research, are as follows:

- the criteria should reflect the basic laws of the formation of the personality of the student;
- using the criteria, links should be established between all components of the studied process of organizing educational and cognitive activity during the formation of adult computer literacy;
- criteria must be disclosed through a number of indicators, as the manifestation of which shows a greater or lesser degree of severity of this criterion;
- since we are talking about the formation of generalized skills, the criteria should reflect the dynamics of the measured quality in time and space; quality indicators should act in unity with quantitative (L.Ye. Balashov, V.A. Belikov, A.G. Zdravomyslov, T.E. Klimova, etc.) [8].

The process of forming computer literacy of students in educational and cognitive activity, which we study, is quite complex both in substantive and procedural aspects. This complexity is reflected in the components of computer literacy. Therefore, we need a set of criterion indicators for each of the components. As a result of a theoretical study, we identified three components of computer literacy: psychological, technical and technological, and heuristic.

The psychological component is a psychological readiness for the development of technical means, the presence of motives for the learning process and the absence of fear of the new. Includes the following criteria:

- motivational value readiness for computer activity;
- anxiety (an indicator is the degree of anxiety).

Technical and technological component contains the ability to navigate the computer's operating system, use general-purpose programs for information processing, and professional activities, the ability to navigate in databases, spreadsheets. It consists of technological, operational-technical and technological readiness for computer activity. Indicators are the fullness and strength of knowledge, awareness of practical skills.

Heuristic component - the ability to creatively approach self-study, independent study of software to solve current problems in school, work or in life. Criteria can be considered creative activity, improvement of their knowledge and skills on the basis of self-analysis. The quality of the development of the criteria of this component is characterized by the indicator of the volume of external assistance of the teacher in the course of the proposed tasks.

In determining the following evaluation levels are used as a computer literacy formation:

– copying- reproducing level - a student can reproduce this or that task according to a given algorithm without analyzing the causes and effects of his actions. The student further uses the proposed algorithm, without changing any of the steps. Anxiety is observed when changing the "scenery".

– The productive-interpretive level - the student has skills in working with user programs, knows their structure and features. Able to consciously apply their skills in school and life.

– constructive and creative - a high level of formation of skills and abilities, there is an interest in a deeper, detailed self-study of the programs necessary for the student to succeed in school, work and life.

To determine computer literacy as a component of teacher training, it is necessary to clarify what specific components computer literacy consists of. A specialist with a high level of computer literacy needs to know the general principles of computer design and operation. its logical and functional structure, the main directions of their use in their professional activities, be able to independently put and decide with using a computer, simple tasks for computing, managing, modeling, storing and information processing. Considering the rapid development of the software industry, the intensive development of various software packages, we have assumed that the vast majority of future computer users will not independently prepare programs for solving their own production problems. And this means that the general educational value in part of computer literacy have that knowledge and skills that allow you to confidently use a computer and apply a limited set of off-the-shelf software tools: working with text and graphic editors, spreadsheets, notebook and etc.

The next aspect of computer literacy is related to skills to seek, accumulate and process information of the most diverse kind – at the form of tables, figures, drawings and various descriptions, draw them in text, network, find and receive them from various sources, systematize, recycle and use for solving various practical problems. To master computer literacy requires skills to work with databases and information retrieval systems for technology and mechanics, history and literature, monuments of architecture and works of art, philology and languages, biology and geography and other academic subjects and disciplines. The future specialist must be taught, not only to work with these databases but also fill them with information, conduct its search and analysis, look for errors and find the right solutions. However, today the problem of the formation of the ideological component of the information culture of a person is more relevant, which is based on the definition of the information activity of a person as a socially significant, ethical way of life in the information space.

After analyzing the above, we can conclude that the process of forming a computer-literate person is complex and multifaceted. In the development and implementation of the educational process, first of all, you need to take into account the age, individual characteristics and the specifics of the future profession of the student. In this regard, the urgent task of education the search and justification of effective ways of teaching and cognitive activity of students in the conditions of computer training, i.e. solving such problems as: the formation of motivation and cognitive interest in learning; the establishment of a rational, pedagogically justified dialogue between students and a computer and the assimilation of relevant educational information; a combination of individual, group and collective forms of computer learning; enhance learning and cognitive activity; establishing optimal proportions between computer and traditional learning.

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