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PSYCHOLOGICAL AND PEDAGOGICAL ASPECTS OF TEACHING THE SUBJECT "INFORMATION TECHNOLOGIES IN PRIMARY GRADES" THROUGH AN ELECTRONIC LEARNING ENVIRONMENT

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Abstract: In the article the necessity to perfect primary school teachers' training in the sphere of use of information and communication technologies is proved. The author's definition of ICT-competence of the teacher of a primary school is made and the model of its formation is described.

Keywords: ICT-competence, primary school teachers' training, information and communication technologies.

The process of informatization of the domestic education system has been going on for more than 25 years. During this time, significant changes have occurred in equipping schools with computer and multimedia equipment, significant progress has been made in the development of software for the educational process of primary schools, experience has been accumulated in teaching a propaedeutic course in computer science, and systematic work is being carried out on the information and communication training of primary school teachers. But, despite this, the expected productive didactic and technological changes in the educational process of primary school have not yet occurred. Sincerely believing in the great educational opportunities of information and communication technologies (ICT) and realizing the demand for their use in practice, many primary school teachers are alarmed about their professional incompetence in matters of their use.

The educational standard of the new generation identifies the objective need to prepare primary school students for life and activities in the information society, and emphasizes the importance of the informatization process in the domestic education system [4]. Informatization of primary education is a complex dynamic process, the tasks of which at this moment are: increasing the efficiency of the learning process for younger schoolchildren based on the use of electronic educational resources while respecting the age and psychological and pedagogical characteristics of children of this age; the formation of computer literacy among primary school students as a necessary component of the educational, cognitive and educational process of school education; the use of ICT as a leading tool for universal educational activities [3]; creation in primary school of methodological conditions for students to master information literacy and elements of information culture, the formation and effective use of the information and educational environment by each participant in the educational process [5].

The solution to all of the above problems of informatization of primary education falls on the shoulders of the primary school teacher. If previously there were discussions about who should carry out the systematic process of developing computer literacy among primary school students - a computer science teacher or a primary school teacher, now, with the transition to a new educational standard (2009), this issue has been completely removed. Only a primary school teacher, using an arsenal of all educational subjects, carrying out interdisciplinary and multifunctional activities, has the opportunity to implement the requirements of the standard and use ICT as a tool for developing universal educational actions (cognitive, regulatory and communicative) in younger schoolchildren, provided for by the second generation standard, ensuring mastery of key competencies that form the basis of the ability to learn.

Thus, in order to implement the requirements of the current educational standard, there is an urgent need to train primary school teachers with a sufficient level of professional competence in the use of information and communication technologies (ICT competence). By ICT competence of a primary school teacher we understand his ability to effectively use information and communication technologies in the context of multi-subject and multifunctional propaedeutic pedagogical activities in the training and development of children of primary school age in the conditions of their early inclusion in the information and communication educational environment.

The question naturally arises: what determines the level of ICT competence of a teacher? On the one hand, it is determined by the modernity and relevance of the content of school and university education in the field of computer science and technology and should be significantly higher among recent graduates, in contrast to teachers with extensive work experience. On the other hand, a teacher's ICT competence depends on the experience of using such technologies in the educational process and, therefore, the level of this competence should depend on work experience. To answer the questions that arose and in order to generalize the opinions of teachers about the direction and effectiveness of teacher education in the field of computer science and ICT, we conducted a sociological survey of primary school teachers.

Analysis of the results of our survey and generalization of our own experience in teaching computer science and information technology courses at a pedagogical university and in advanced training courses for primary school teachers allowed us to draw a number of conclusions. Firstly, basically, all primary school teachers understand the significance and promise of the processes of informatization of society and the education system and critically evaluate their ICT competence, realizing that computer literacy is a necessary, but not sufficient condition for the effective use of information technologies in the learning and development of students elementary school. The success and productivity of professional activity should become a criterion for the level of ICT competence developed by future primary school teachers at a university. To achieve this, it is advisable to make training in the field of information and communication technologies more practice-oriented, reflecting the specifics of future professional activity.

Secondly, studying the most modern ICT in professional activities during the student's studies at a university does not guarantee their relevance even at the time of employment of the graduate, since the rapid pace of software changes and the emergence of new computer technologies gradually reduce the level of teacher competence in this area achieved over time

training. Maintaining your competence in the field of information and communication technologies is possible only through constant independent training in this area.

Thirdly, the ICT competence of a primary school teacher is formed in the process of university education, consolidated and developed in teaching practice, subject to the systematic use of modern information technologies in the teaching and methodological activities of the teacher. Therefore, one of the leading directions for the modernization of university education in this area should be the development of students' ability to independently master new software, which will create the conditions for putting into practice the idea of continuous pedagogical education. In this regard, we believe that one of the important components of the preparation of a future teacher should be the conscious need and ability of him to independently master new programs and technologies.

To develop the ICT competence of a future primary school teacher, in different years the educational process at the university included the following courses: "Technical teaching aids", "Mathematics and computer science", "Modern information technologies in education", "Information technologies" [1, 2]. However, traditional models of developing ICT competence in students, focused on their intra-subject study within the framework of individual specialized courses, no longer meet the modern professional needs of training teachers for primary schools, since they do not take into account the peculiarities of his future activities in the context of a multi-subject, dynamically changing educational process. The problem arises of creating a model that reflects a unified systematic approach to the formation of ICT competence of a primary school teacher through the interdisciplinary integration of special disciplines of information training and professional subjects.

In our opinion, it is advisable to consider the ICT competence of a primary school teacher in three aspects, namely: universal personal competence in the field of higher education; part of general professional pedagogical competence; methodological competence – special professional pedagogical competence of a primary school teacher.

Universal personal competence is formed throughout a person's life at all levels of education. The task of higher education is to ensure the continuity of its development: studying the state of competence of the applicant; correction and development of student competence; stimulation and orientation of the graduate towards its improvement. Thus, the entire information and educational environment of the university works to develop universal personal competence in the future teacher. Universal personal competence of a primary school teacher is formed in the same way as that of all students within higher education, however, it acquires specific features, since its development is influenced by the characteristics of the future profession, and, accordingly, the content of education and the characteristics of the information and communication educational environment of the pedagogical university (faculty).

Pedagogical ICT competence is based on the universal component of this competence, in particular, on such components as: value, communication and technology, and all general professional competencies set out in the educational standard of the new generation. The task of training a primary school teacher within the framework of higher education is the end-to-end formation of the aspect of competence throughout the entire learning process at a university through the study of both special information disciplines and professional training disciplines. The pedagogical ICT competence of a primary school teacher, while maintaining common

features with any other pedagogical specialty, has significant features characterized by the versatility of its refraction in multi-subject teacher training (mathematics, Russian language, literature, ...) and the psychological, pedagogical and physiological characteristics of children of primary school age .

Methodological ICT competence is determined by the specifics of the educational activity of a primary school teacher, based on such components as: value, communicative and motivational and all professional competencies prescribed in the educational standard of the new generation.

The task of higher education is the formation of this aspect of competence based on the integration of special information disciplines with the subjects of psychological, pedagogical and methodological training. Methodological ICT competence of a primary school teacher includes: the ability to distinguish educational resources aimed at primary school age; ability to master ready-made software and methodological complexes; the ability to adapt ready-made software to the features of the pedagogical process and didactic requirements of primary school; the ability to design solutions to pedagogical problems and practical tasks of the educational process, taking into account the psychological and pedagogical characteristics of children of primary school age; the ability to organize the educational process using computer and multimedia technologies, taking into account the patterns of physiological development of children and using health-saving technologies; ability to maintain electronic documentation provided for by school nomenclature, etc.

The considered approaches to the technology of developing the competence of primary school teachers in the field of using information and communication technologies certainly require a number of conditions for their implementation. First of all, this is the desire, consolidation and preparedness of the teaching staff to solve problems of increasing the efficiency of the educational process on the basis of modern technical means. This is facilitated by the organization and conduct of advanced training courses for teaching staff, the work of a faculty methodological seminar, holding open classes, participation in conferences on the use of ICT in the educational process, holding master classes on the presentation of new equipment and software, etc. Also an important condition for effective development ICT competence of a teacher is the constant expansion of the scope of application in the educational process of the capabilities of the information and communication environment of the university. We are talking about the use of automated learning subject environments; electronic catalogues, libraries, reference systems; a set of educational and methodological materials developed by teachers to organize the educational activities of students; electronic rating journals for students, by which they can track their level of academic performance, etc. Another fundamental condition is the availability of information and methodological support for the student learning process in the field of using ICT, which would allow teachers of various disciplines to implement the principle of multifunctionality.

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