TRAINING PRIMARY SCHOOL TEACHERS TO USE MEANS OF INFORMATION AND COMMUNICATION TECHNOLOGIES

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Abstract. This article examines the system of training primary school teachers to use information and communication technologies (ICT) in their professional activities and highlights the key components of ICT teacher training. The main areas where ICT tools are used in primary school curricula are considered. This system, which can be used during university and postgraduate training, is aimed at improving the professional competence of teachers in the field of ICT. Based on the analysis of existing experience, a competency-based system for training primary school teachers with general theoretical, technological, didactic and design components have been developed. The theoretical basis of teacher training is an activity-based approach. The article discusses in detail the implementation of the system at the stage of professional training when teaching the course "The use of electronic learning tools" at the Faculty of Primary Education.

Keywords: system, ICT, educational process, competence, training, approach, modernization.

Introduction. Modernization of primary education based on ICT means requires high professional readiness of teachers to use them in their professional activities. Currently, quite a lot of experience has been accumulated in preparing teachers for the use of ICT in teaching activities. All institutions of the professional development system offer students courses on problematic aspects of the use of information technology in education.

The main directions of training teachers in the field of ICT are: the study of software and the possibilities of its use in teaching, consideration of the specifics of the use of ICT in a specific subject area; the study of specialized educational programs.

The main part. There are a number of areas that require the inclusion of ICT tools in the educational process of primary school: computer training in the basics of sciences (using developed software and methodological complexes); testing (determining the level of knowledge of students); organization of the educational process (maintaining accounting documentation, processing monitoring results); preparation of educational materials (multimedia presentations, sets of multimedia resources).

In the activities of primary school teachers, the computer is primarily a means of learning, not an object of study. Most primary school teachers, as a rule, use Internet resources to search for additional information and computer presentations or software-methodical complexes to present educational information. Other areas of ICT application are rarely used.

The analysis of the experience of training primary school teachers in the system of advanced training [1] allows us to note that the training process goes through a number of stages:

1) within the framework of basic advanced training courses, teachers gain knowledge about

the basic concepts and methods of computer science, acquire user skills for working with MS Office applications;

2) during the targeted courses, teachers get acquainted with the psychological and pedagogical aspects of the use of electronic learning tools in the educational process;

3) certain knowledge is given in the field of methods of conducting lessons with computer support;

4) explain the sanitary-hygienic requirements for lessons;

5) software and methodological complexes for younger schoolchildren are offered;

6) in the course of targeted training, teachers acquire the skills to develop and create author's electronic materials by means of various instrumental programs (for example, PowerPoint programs);

7) teachers learn to design and analyze a lesson using ICT.

In the course of the analysis, it can be noted that, firstly, there is no continuity between the selected stages; secondly, the training and advanced training of teachers in the field of ICT should be carried out continuously, using various forms and technologies (including remote).

Currently, there is no system of continuous development of primary school teachers in the field of ICT, reflecting the current stage of development of the information society.

The primary school teacher training system should be aimed at developing the professional ICT competence of primary school teachers, which is understood as the teacher's willingness to solve professional tasks in an information society.

The theoretical basis for building a system of primary school teachers' training for the use of ICT in professional activities are the general pedagogical principles of personnel training in informatization of education, formulated by I.V. Robert [2, p. 180]:

- invariance of basic training with respect to the professional orientation of the specialist of the educational institution, its orientation to information, communication, general cultural aspects is adequate to the current level of development of the information society;

- specialization of specialized training of a specialist of an educational institution, its orientation towards the realization of the possibilities of ICT tools and the peculiarities of their application in a particular profession;

- differentiation of training, its orientation to personal preferences, professional needs and characteristics of the student.

Let's consider the main directions, content, levels, forms and methods of work on the formation of teachers' readiness to use ICT tools in their professional activities.

The main areas of primary school teachers' training are the following:

1) *general theoretical, forming an idea of changes in the education system that occur under the influence of informatization processes;*

2) *technological, contributing to the formation of technological competence of primary school teachers, involving the mastery of various tools of modern computer environments;*

3) *didactic, forming teachers' general ideas about the didactic potential of ICT, generalized methods of methodological activity in order to realize the potential of ICT, the ability to integrate pedagogical and information technologies;*

4) *designing, systematizing the acquired knowledge and skills and contributing to the acquisition of experience in practical development of lessons based on the use of ICT tools.*

The content of the training should reflect such aspects of the use of ICT in primary school as:

1) implementation of information activities and information interaction both between

participants of the educational process and between users and an interactive tool operating on the basis of ICT;

2) pedagogical expediency of implementing the capabilities of ICT tools in the process of teaching subjects in primary school;

3) features of the educational process, including pedagogical practice of using ICT tools;

4) main provisions of the development and use of ESO, their design, evaluation of their content and methodological significance;

5) pedagogical and ergonomic conditions for the safe and effective use of ICT tools in teaching younger schoolchildren;

6) features of the use of computer testing and diagnostic techniques to establish the level of knowledge and skills of younger students;

7) features of the organization of lessons using ICT tools;

8) creation of author's electronic materials, and implementation of teaching methodology on their basis.

In order to ensure the variability of the presentation of the content and its level differentiation, the content is divided into modules or training elements. In particular, the content aspect can be represented by the following modules:

"Informatization of education" - the role of ICT tools in modern society, the main directions of informatization of education, the information educational environment of an educational institution;

"ICT tools" - classification of ICT tools and expediency of application in education; definition and classification of pedagogical software, didactic capabilities of ESO, their analysis and expertise;

"Fundamentals of the use of ESO in primary school "medical, biological, psychological and pedagogical foundations of the use of ESO in teaching younger schoolchildren, pedagogical scenarios for the use of ESO, the specifics of organizing and conducting classes in primary classes using ESO;

"Design and development of author's electronic materials" - stages of development of electronic materials; creation of author's software products in various tool environments;

"Improving the level of ICT competence is the study and creation of electronic resources aimed at providing methodological support and exchange of experience of primary school teachers (websites, Internet pages, electronic portfolios, blogs).

Mastering the content involves building a training system that includes the pre-university stage, the stages of professional training and professional improvement.

At the stage of pre-university preparation, students in the course of computer science receive initial information about the role and place of ICT tools in the life of modern society; acquire the ability to carry out computer processing of information. The result of this stage is the psychological readiness of schoolchildren to use ICT tools in their activities.

The stage of professional training is aimed at establishing the professional competence of a future primary school teacher in the field of organizing the educational process using ICT tools.

Professional training involves: a) the assimilation of theoretical knowledge about the role and capabilities of ICT tools, the formation on their basis of skills to assess the content and technological characteristics of ICT tools from the standpoint of their methodological expediency and the possibility of use; skills that provide qualified psychological and pedagogical support of the process of using ICT in teaching younger schoolchildren; b) the formation of motivation to use ICT tools in future professional activities.

Thus, preparation for the use of ICT in pedagogical activity involves the formation of a number

of skills:

- analytical, necessary in the study of the educational potential of ICT tools and its implementation in the framework of academic subjects, taking into account the specifics of primary school;

- gnostic, defining the skills of forecasting the pedagogical process using ICT for the development of general intellectual skills of younger schoolchildren;

- projective, related to the planning of the educational process based on ICT tools (translation of the purpose and content of education into specific pedagogical tasks; selection of ESOs and organization of various types of activities based on the applied ESOs)

The solution of this problem at the university is facilitated by the creation of a high-tech educational environment and such a construction of the educational process, which ensures, on the one hand, the widespread use of ICT tools in teaching disciplines, and on the other hand, the inclusion in the curricula of special courses (or the allocation of individual modules as part of the taught disciplines) aimed at training students in the field of informatization education.

The result of this stage is the formation of the information competence of the future primary school teacher as an integrative quality of personality. M.B. Lebedev and E.V. Sidorova propose to understand information competence as "the integrative quality of personality, which is the result of reflecting the ability of a person to carry out the processes of selection, assimilation, processing, transformation and generation of information into a special type of subject-specific knowledge that allows to develop, accept, predict and implement optimal solutions in various fields of activity" [3].

The definition of the essence of information competence, presented in T.A. Gudkova's dissertation research, also deserves attention, where her view on this problem is formulated quite broadly and argumentatively: "Information competence is understood as a professionally significant quality consisting in mastering the basic skills of working with information, complex individual psychological education based on the integration of theoretical knowledge, practical knowledge in the field of innovative technologies and a certain set of personal qualities, new literacy, which includes the skills of active independent processing of information by a person, making fundamentally new decisions in unforeseen situations using technological means" [4, p. 11].

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In determining the information and communication competence, Y.G. Plaksina and N.G. Goncharova emphasize the individual psychological and integrative aspects, thanks to which the effect of mobilizing the student in the process of educational activity to perform successful actions in the field of ICT is achieved. The cited authors develop the idea of "literacy". Yu.G. Plaksina interprets it as a new literacy, "which includes the skills of active independent processing of information by a person" [5, p. 10], while N.A. Goncharova breeds such concepts as: ICT literacy, which includes possession of integrative information and communication knowledge, skills and abilities; computer creativity, embodied in determining optimal and non-standard solutions using ICT; ICT motivation in

the form of a sustained desire to study ICT and apply the acquired knowledge and skills in professional activities [6, p. 7].

For students of the Faculty of Primary Education, we have developed an elective course "The use of electronic learning tools in primary education". When developing the discipline, on the one hand, the specifics of the pedagogical activity of a primary school teacher based on the universality of the profession were taken into account as much as possible, and on the other hand, the request of real school practice. The course content also reflected general issues of pedagogy in the context of the organization of the educational process based on the use of ESO, which allowed expanding the practice-oriented orientation of the course "Pedagogy of primary Education".

The stage of professional development includes the formation of an individual style of teacher activity and professional skills; the development of the qualities of professional activity and competence, skills of professional introspection. At this stage, it is advisable to form skills related to the integration of traditional and information technologies, design and development of author's electronic resources aimed at both supporting the teaching process and improving the level of pedagogical skills. The result of this stage is an increase in the level of education and training of students and the growth of professional skills of the teacher. Training of teachers at this stage is carried out in the system of advanced training during targeted courses, trainings, seminars, workshops, practical conferences, as well as using remote technologies (webinars, distance learning courses, teleconferences, chats, etc.).

The methodological basis of teacher training is an activity-based approach, which involves the inclusion of teachers in conducting pedagogical examinations of ESO, in the process of solving pedagogical tasks and creating pedagogical situations for developing skills in the use of ICT tools. It is also important to organize independent work of teachers with information technology tools on literary sources, to create electronic portfolios and to master the specific experience of teachers.

In the course of theoretical training, teachers form ideas about the process of informatization of primary education, about the information educational environment of an educational institution, about the pedagogical possibilities and principles of using ICT tools. The main teaching method is lectures (visualization lectures, problem lectures).

A special role in the training of specialists is given to practical classes, which are aimed at understanding theoretical material, practical work with ESO (familiarization with the content, highlighting the structure and didactically significant components), designing lesson projects based on the use of ESO, searching for information.

The organization of practical classes involves the use of various methods: performing creative work based on the project method, problem-situational analysis, modeling student activity, role-playing, etc. A special place is occupied by practice-oriented tasks that allow creating models of situations adequate to school practice within the framework of classes.

The introduction of ICT in the educational process leads to a radical change in the functions of the teacher, who, together with students, increasingly becomes a researcher, programmer, organizer, consultant. Therefore, an important area of work on the formation of ICT competence of future primary school teachers is the development of the latest technologies and teaching tools, such as: tele-conferences, e-mail, interactive whiteboard, RSS systems, e-books for microcomputers, multimedia systems.

Conclusions.

The system of training primary school teachers to use ICT tools in their professional activities

should be different:

- level (pre-university, university, postgraduate);
- differentiation (by content, methods and forms, contingent of trainees);
- practice orientation (formation of knowledge, skills and abilities on the use of ICT in professional activities);
- continuity (provides the possibility of training at the stages of professional formation and growth);
- succession;
- integrativity.

The described approaches to the construction of an integrated system of primary school teacher training can be used in the development of curricula and training programs for university students and trainees of the advanced training system.

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