Primary Classes based on Media Technologies Represent an International Rating System for Teacher Control

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Abstract--- The modern period of the development of society is characterized by a strong influence of computer technologies on it, which penetrate into all spheres of human activity, ensure the dissemination of information flows in society, forming a global information space. An integral and important part of these processes is the computerization of education. At present, a new education system is being developed in The Republic of Uzbekistan, focused on entering the global information and educational space. This process is accompanied by significant changes in the pedagogical theory and practice of the educational process, associated with the introduction of adjustments to the content of teaching technologies, which should be adequate to modern technical capabilities, and contribute to the harmonious entry of the child into the information society. Computer technologies are called upon to become not an additional "appendage" in training, but an integral part of a holistic educational process, which significantly increases its effectiveness.

Keywords--- Media Technologies, International Rating System.

I. INTRODUCTION

The new educational content of preschool children and primary schoolchildren is focused mainly on the formation of thinking of preschoolers and primary schoolchildren, independence, learning activities by means and methods of information technology, taking into account the age characteristics and capabilities of children, the development of logic, the child's thinking for mastering and active perception of the laws of world logic computers.

The "Planned Results of Primary General Education" indicates that elementary school students should have ICT competency, i.e. the individual's ability to solve educational, everyday, professional problems using information and communication technologies. ICT competency is manifested in activities in solving various problems involving a computer, telecommunications, Internet, etc. [1].

The ICT competence of the teacher is a combination of knowledge, teachings and experience in the use of ICT in education [3]. Two components are distinguished in the structure of ICT competency: general ICT competency and professional ICT competency. General ICT competency includes:

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- Finding information using Internet resources;

- Creation of simple (without figures and tables) and complex (with tables, figures and schemes) documents in Word;

- Creation of calculation tables in Excel using formulas, functions and diagrams;

- Creation of single-table and multi-table databases, construction of queries, forms and reports.

- The following components can be distinguished in professional ICT competency:

- The use of Internet resources to search for information for the organization of educational activities of students;

- The use of word processors for registration of educational and program documentation and the creation of materials for the educational process;

- The use of table processors for a rating system for evaluating and creating computer tests;

- The use of a DBMS to account for the results of educational activities of students;

- The use of specialized instrumental systems for creating computer tests;

- Development and use of electronic teaching materials;

- The use of tool programs to create your own Internet resources.

In the content and structure of ICT competence, general pedagogical and subject components can be distinguished.

General pedagogical component is the general directions of the use of information technology in the processes of training and education.

II. METHODS OF RESEARCH

The subject component is specific areas that reflect the characteristics of educational subjects [1].

There are three levels of teacher competency in ICTs [3]:

1. Basic - an invariant of knowledge, skills and experience, necessary and accessible for every teacher in solving educational problems using universal ICT: mastering generally accepted tools of work in personal information space on a computer (file operations and graphical interface); mastering user skills in applying the elementary capabilities of office technologies; the use of navigation technologies and the search for necessary information on the Internet; use of email and network communication technologies; general idea of multimedia and online educational resources.

2. Advanced - involves deeper selective development of popular information technologies that form the professional activity of a teacher using ICT in accordance with the requirements for the content of education and readiness for their implementation in the real educational process on a regular basis. At this level, the teacher develops the technological skills of presenting his own educational and methodological information, the skills of the presentation of his electronic pedagogical portfolio.

An advanced level implies a deeper penetration into the sphere of technologies for processing text, graphic, audio, video information, calculations; the development of specialized technologies and resources developed in accordance with the requirements for content; education, development of technologies for presenting your own

information using the Web interface (creating Web pages and Web sites) and its placement on the network.

3. Specialized [3].

It is important to distinguish between ICT literacy and ICT competency of a teacher.

ICT literacy - knowledge of what a personal computer is, software products, what their functions and capabilities are, the ability to "press the right buttons", knowledge of the existence of computer networks (including the Internet).

ICT competence is not only the use of various information tools (ICT literacy), but also their effective application in pedagogical activity [4].

ICT competency means confident possession of all components of ICT literacy skills by teachers to solve emerging issues in educational and other activities, with emphasis on the formation of generalized cognitive, ethical and technical skills [2].

The content of the basic and extended levels of ICT competence of a teacher can be represented by two groups:

- The presence of ideas about the use of ICT in the specifics of pedagogical activity in accordance with educational tasks;
- The level of proficiency in information processing techniques using ICT during the organization and implementation of the educational process [3].
- The ICT competence of the basic level, according to A. Elizarov, includes:
- The presence of general ideas about the possibilities of using ICT in pedagogical practice;
- Availability of ideas about electronic educational resources;
- Availability of ideas about the purpose and functioning of PCs, information input-output devices, local computer networks and the possibilities of their use in the educational process;
- Possession of techniques for organizing personal information space and the graphical interface of the operating system (techniques for performing file operations, organizing the information environment as a file system, basic methods of input-output of information);
- Knowledge of methods for preparing teaching materials and documents in accordance with the content of education and means of information technology (entering text from the keyboard and methods for formatting it; preparing materials containing graphic elements using the built-in tools for processing graphic elements; methods of working with tabular data for compiling lists and tables using built-in methods for the simplest calculation of data; techniques for constructing graphs and charts; techniques for creating ezentatsy and demonstrations for use in teaching practice);
- Possession of basic services and methods of working on the Internet for their use in educational activities (methods for navigating and searching for educational information on the Internet, for obtaining and storing them for later use in pedagogical practice; methods for working with e-mail; methods for working with network tools interactions) [3].
- An expanded level of ICT competence of a teacher, according to A. Elizarov, contains:

- Availability of ideas about the formation of the pedagogical portfolio by means of information technology; about network pedagogical interaction and the dissemination of pedagogical experience; about the purpose, structure, navigation tools and website design; about the structure of the web page; about software tools for creating sites;

- Mastery of the methods of forming a portfolio in a video computer publication; presentation of pedagogical experience in the form of a computer presentation to the report; presenting an individual and collective pedagogical portfolio for network exchange of experiences using the Web interface, including computer graphics, photo and video materials;

- Possession of the methodology for using software and hardware and ICT tools and electronic educational resources in the pedagogical process [3].

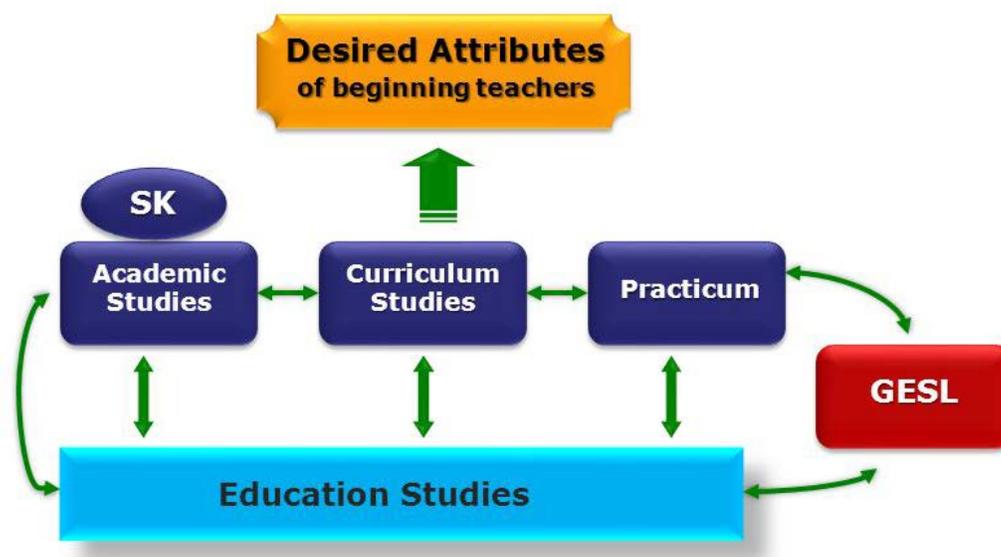The following is a schematic model of ICT competency [2].

Fig. 1: ICT Competency Model Teacher

Analysis of existing methods for assessing the competence of educators in the use of ICTs shows that existing methods for assessing information and communication competence are oriented towards the formation of technological skills of teachers. Assessment of high-level mental skills that provide full-fledged information and communication competence of educators is practically not discussed today. Therefore, it is not possible to use the meters of teachers' competence in the field of ICT use that exist today in Uzbekistan.

One of the results of the school's informatization process should be the emergence of teachers' ability to use modern information and communication technologies to work with information. They should be able to search for the necessary data, organize process, analyze and evaluate them, as well as produce and disseminate information in accordance with their goals and perceptions of the audience. This ability (or KIC) should provide educators with the opportunity:

Successfully pursue lifelong education (including obtaining educational services using the Internet); determine

the stages of their professional development;

live and work in the information society, in an economy that is based on information and information processes.

III. RESULTS

In connection with the foregoing, it was decided to develop a new toolkit for assessing ICT competency, which will test how a teacher thinks and works in the "digital" world. Assessment of ICT competency is carried out according to the results of a test performed by teachers on a computer, while the overall ICT competence of teachers is assessed by the final result. Component skills are not distinguished and are evaluated individually. To assess each of the components of skills in the test, several tasks are presented, but in general, a qualitative (diagnostic) assessment is set for the test, reflecting the level of ICT competence: a level above the basic, basic, below the basic.

Diagnostic assessment allows you to explore the cognitive and technical skills behind the specific components of ICT competency. The result of this type of testing allows you to give:

General assessment of the cognitive and technical competence of the teacher;

A more detailed system of reporting on scored points, highlighting the specific strengths and weaknesses of the teacher;

Connection with existing or specially developed teaching materials;

Based on the results of testing, it is possible to distinguish the specific goals of teacher training [2].

In the sample list of teacher ICT competencies

Emit [1]:

Know the list of the main existing electronic (digital) manuals on the subject (on disks and on the Internet): electronic textbooks, atlases, collections of digital educational resources on the Internet, etc.

To be able to find, evaluate, select and demonstrate information from digital educational resources (for example, use materials from electronic textbooks and other manuals on discs and on the Internet) in accordance with the assigned educational tasks.

Install the program you are using on a demonstration computer, use projection techniques, and own techniques for creating your own electronic didactic material.

To be able to transform and present information in an effective form for solving educational problems, compose your own educational material from available sources, generalizing, comparing, contrasting, transforming various data.

To be able to choose and use software (text and tabular editors, programs for creating booklets, websites, presentation programs - Power Point, Flash) for the optimal presentation of various kinds of materials necessary for the educational process:

Materials for the lesson;

Thematic planning;

Monitoring in its subject;

Various reports on the subject;

To be able to apply NITI-methods (New Information Technologies and the Internet) - these are methods for conducting lessons, united by one topic, using ICT. They contain links to electronic materials and websites useful for conducting lessons on a given topic.

Effectively apply tools for organizing student learning activities (testing programs, electronic workbooks, student learning organization systems, etc.).

Be able to create a digital personal portfolio and student portfolio.

To be able to correctly choose the form of transmitting information to students, parents, colleagues, school administration:

school network;

email;

social network (Diary.uz, ...);

site (site section);

 mailing list (mailing list - used for mailing lists, provides a means of automatically adding and removing addresses from the list);

forum;

Wiki environment (Wiki? (Wiki) - a hypertext medium for collective editing, accumulation and structuring of written information);

blog (online journal or event diary);

RSS feed (designed to describe news feeds, newsletters);

podcast (newsletter with audio or video content).

Organize the work of students in the framework of network communication projects (olympiads, contests, quizzes ...), remotely support the educational process (if necessary) [1].

No less stringent requirements are imposed on the formation of ICT competence of elementary school students. In the "Approximate main educational program of an educational institution" a whole section is devoted to this issue [3].

ICT devices

A graduate of primary school will learn:

- Connect ICT devices to electric and information networks, use batteries;

- Connect ICT devices (computer units, network devices, printer, projector, scanner, measuring devices, etc.) using wired and wireless technologies;
- Correctly turn on and off ICT devices, enter the operating system and complete work with it, perform basic operations with screen objects (moving the cursor, highlighting, moving directly, memorizing and cutting);
- Make an information connection to the local network and the global Internet;
- Enter the information environment of an educational institution, including via the Internet, place various information objects in the information environment;
- Display information on and paper, handle consumables correctly;
- Comply with safety requirements, ergonomic hygiene and resource saving when working with ICT devices, in particular taking into account the specifics of working with different screens.

A graduate will have the opportunity to learn to understand and use in practice the basic psychological characteristics of the perception of information by a person.

Freeze images and sounds

A graduate will learn:

To fix images and sounds during the discussion process, experiment, natural process, fix the course and results of project activities;

To take into account the meaning and content of activities during the organization of fixation, to single out individual elements of objects and processes for fixation, to ensure the quality of fixation of essential elements;

Choose ICT hardware for capturing images and sounds in accordance with the goal;

to process digital photographs using the capabilities of special computer tools, create presentations based on digital photographs;

To process digital sound recordings using the capabilities of special computer tools, to transcribe digital sound recordings;

To carry out video shooting and to carry out the installation of the footage using the capabilities of special computer tools.

The graduate will have the opportunity to learn: to distinguish between creative and technical fixation of sounds and images; use the capabilities of ICT in creative activities related to art; carry out three-dimensional scanning.

These results are achieved mainly in the framework of the natural sciences, subjects "Art", "Foreign Language", "Physical Culture", as well as in extracurricular activities.

Creating Written Messages

A graduate will learn:

Create text in Russian using blind keyboard writing;

Scan text and recognize scanned text;

carry out editing and structuring of the text in accordance with its meaning by means of a text editor;

create text based on the transcript of the audio recording, including several participants in the discussion, carry out a written semantic summary of the statements during the discussion;

use the means of spelling and syntactic control of the Russian text and the text in a foreign language.

The graduate will have the opportunity to learn: create text in a foreign language using a blind ten-finger keyboard letter; Use computer tools to simplify the decoding of audio recordings.

These results are achieved mainly in the framework of subjects, "Foreign Language", "Literature", "History", as well as in extracurricular activities.

Creating graphic objects

A graduate will learn:

create various geometric objects using the capabilities of special computer tools;

create diagrams of various kinds (algorithmic, conceptual, classification, organizational, kinship, etc.) in accordance with the tasks to be solved;

create specialized maps and charts: geographical, chronological;

create graphic objects by hand drawing arbitrary lines using specialized computer tools and devices.

The graduate will have the opportunity to learn: create animated films; create virtual models of three-dimensional objects.

The results are achieved mainly in the framework of the subjects "Technology", "Social Studies", "Mathematics", as well as in extracurricular activities.

Creation, perception and use of hypermedia messages.

A graduate will learn:

organize messages in the form of a linear or link view for self-viewing through a browser;

deconstruct messages, highlight structures, elements and fragments in them;

use internal and external links when perceiving messages;

formulate questions to the message, create a brief description of the message; Quote message fragments

selectively treat information in the surrounding information space, refuse to consume unnecessary information.

The graduate will have the opportunity to learn: design messages in accordance with the tasks and means of delivery; understand messages, using internal and external links, various search tools, reference sources when they are perceived.

These results are achieved mainly in the framework of the subjects "Technology", "Literature", "Foreign Language", "Art", and can be achieved in the study of other subjects.

Communication and social interaction

A graduate will learn:

make audio and video support, including speaking to a remote audience;

 participate in the discussion (audio-video forum, text forum) using the capabilities of the Internet;

Use e-mail for information exchange;

keep a personal diary (blog) using the capabilities of the Internet;

carry out educational interaction in the information space of an educational institution (receiving and completing assignments, receiving comments, improving their work, forming a portfolio);

comply with the norms of information culture, ethics and law; respect the private information and information rights of others.

A graduate will have the opportunity to learn: interact in social networks, work in a group on a message (wiki); participate in forums in social educational networks; interact with partners using the capabilities of the Internet (game and theater interaction).

Results are achieved within all subjects, as well as in extracurricular activities.

Search and organization of information storage

A graduate will learn:

use various methods of information search and the Internet, search services, build queries to search for information and analyze search results;

use the methods of information search on a personal computer, in the information environment of an institution and in the educational space;

 use various library catalogs, including electronic ones, to search for necessary books;

create your own information space: create folder systems and place the necessary information sources in them, place information on the Internet.

The graduate will have the opportunity to learn: create and fill out various qualifiers; use various methods of searching for information on the Internet in the course of educational activities.

The results are achieved mainly in the framework of the subjects "Literary reading", "Technology", "Computer science", etc. [5].

For this purpose, students of the specialty "Pedagogy and Methodology of Primary Education" and the direction "Pedagogy", profile "Primary Education", we offered the discipline of specialization "Teaching computer science in primary school." This discipline of specialization includes the study of the following subjects: "Computer Software", "Information and Communication Technologies", "Computer Networks, the Internet and Multimedia Technologies", "Theory and Methods of Teaching Computer Science in Elementary School".

Let's consider them in more detail. The guiding principle of studying the course of information technology is the principle of professional and pedagogical orientation, which means that in the process of studying information technology a student should have the professional skills necessary for him to solve the tasks of teaching computer science to younger students.

The goal of the course "Theoretical Foundations of Informatics" is to provide students, future primary school teachers, with the necessary information, psychological, pedagogical and methodological training for successful teaching of computer science to students, their education through this school subject, for independent further work to deepen and expand knowledge, as well as to see the prospects of using the concepts of the course "Theoretical Foundations of Computer Science" in the initial course of computer science.

Course Objectives

to give knowledge of the basic concepts of computer science and computer technology;

the basics of constructing non-positional and positional number systems, algorithms for action in the decimal number system, the principles of computer operation;

teach you how to make algorithms;

show the basics of programming;

give information about modeling, algorithmization;

give knowledge about the data, about their processing;

develop the ability to work with files and folders;

to develop skills in working with educational literature;

to contribute to the ability to independently master knowledge.

Student learns:

concept of information; the concept of information, information processes; methods of encoding information;

computer architecture;

number systems;

know types and properties of algorithms;

know the concept of model, modeling; know the basic programming techniques;

units of computer information; definition of data, files, folders and directories; basic software;

basics of working with operating systems;

the basics of converting documents from paper to electronic form; basics of data compression; the basics of working with research automation tools;

concepts of vector and raster graphics; basics of working with graphic data formats.

The Student is Studying

work with various number systems;

perform operations with files (copy, move, delete, etc.);

work with peripheral devices; work with external storage devices;

make algorithms of various types; make a mathematical model; program linear algorithms;

work with basic software; with operating systems;

convert documents from paper to electronic form;

work with automation tools for research work;

work with graphic programs.

In the process of studying the course, students are offered the following tasks: coding and decoding of information; search for information; work with files, folders; preparation of presentations and messages on computer architecture, peripherals; compilation and solution of various types of algorithms, models, computer models; programming in Turbo Pascal programming language; scanning, recognition of documents; work in Photoshop.

Discipline "Computer Networks, Internet, Multimedia Technologies" discipline specialization "Teaching computer science in primary school.

The purpose of the discipline: to provide students, future primary school teachers, the necessary information, psychological, pedagogical and methodological training for successful teaching of computer science to students, educating them through this school subject, for independent further work to deepen and expand knowledge, as well as to see the prospects of using concepts an elementary informatics course in middle school and the possible introduction of new informatics issues into an elementary informatics course to prepare a person society. "

Objectives of the discipline

give students the basic concepts of local area networks, data transmission over the network;

to form the skills necessary for mastering the content by searching for information on the Internet;

to give students the necessary knowledge to use the Internet in their independent work;

to form the skills of working in the network;

teach a student to search, collect, analyze, organize, present, transmit information in an open information space and all surrounding reality;

to contribute to the ability to solve fundamentally new tasks, to learn throughout life.

to contribute to the ability to independently master knowledge;

to form research skills, the ability to make optimal decisions,

to form the ability to work with information,

develop communication skills.

In the process of attending these advanced training courses, students learn: educational technologies in a modern elementary school; modernization of the content of primary general education at the Tashkent State Pedagogical University named after Nizami the psychological and pedagogical foundations of teaching computer science in primary school; specific techniques for using information technology in the lessons in elementary school; the use of training programs in the lessons in elementary school and their inclusion in the learning process.

Students independently analyze their own pedagogical experience in using information technology; prepare fragments of classes in a preschool educational institution or lessons in an elementary school using a variety of techniques for applying information technology; prepare and analyze articles from pedagogical magazines on the use of information technology in the work of teachers of preschool educational institutions, teachers, educators

As a form of final control, there is a round table on the issues of ICT competence of teachers and the use of information technology; There is a competition for the best methodological development of a lesson in elementary school using information technology.

For students of the specialty "Pedagogy and Methods of Preschool Education" with an additional specialty "Physical Education", a course "Using modern information and communication technologies in education" has been developed.

Course Objectives

the formation of a system of knowledge about educational information technologies and their place in a promising education system;

development of skills to use the capabilities of information and communication technologies (ICT) to increase the effectiveness of educational and self-educational activities in an educational institution;

organization of activities aimed at understanding the dynamics of changing forms of the educational process and attestation forms using ICTs throughout the child's education;

motivation of research activities on the design of the multiplicity of types of educational activities using ICT, on the interdisciplinary use of ICT in the professional activity of a teacher;

initiating self-educational activities using ICT.

IV. CONCLUSION

In the process of studying the discipline, students consider the following questions: basic concepts and definitions of the subject area of education informatization; goals and objectives of informatization of education; new paradigm of education in the context of informatization of education; model of a new education paradigm; goals and objectives of the use of information and communication technologies in education.

The concept of information technology, communication technology. Information and Communication Technology (ICT); ICT facilities; main directions of the introduction of ICT in education; the concept of an open education system; distance education as an example of open education; the use of ICT in open education; building

distance education using ICT; training intensifation factors implemented using ICT tools. Information and communication technologies in the implementation of information and information-activity models in training. Psychological and pedagogical capabilities of computer training tools. The didactic principles of the use of computer and information technologies in training. Information model of training. Information-activity learning model. Possibilities of technology of computer training. Information and communication technologies in enhancing the cognitive activity of students. The concept of multimedia technologies. An active teaching method in enhancing the cognitive activity of the child, as one of the types of training. The use of multimedia and communication technologies to enhance the cognitive activity of students. Based on the tools of multimedia technology, to develop educational projects that implement inter subject communications. Information and communication technologies in the implementation of the control system, assessment and monitoring of student learning.

Computer control technology. Computer control and computer testing. The subjects of the educational process in computer learning environments. Theoretical foundations of computer training and control technology. Use of information and communication technologies for monitoring and evaluating student-learning outcomes.

Methods of analysis and examination for electronic software, methodological and technological tools for educational purposes. Methods of analysis and examination for EPMS. Stages of examination and analysis for electronic software, methodological and technological educational tools. Matrix of expertise of program-methodological and technological educational tools.

Methodological aspects of the use of information and computer technology in school. Software in teaching school subjects. Development of requirements for teaching materials that provide personality-oriented training using ICT tools. The concept of audiovisual and interactive teaching aids, the technique of using them in a school course. Types of didactic methods used to form a search, creative activity (computer-based). The possibilities of ITO for the development of creative thinking.

The goals and objectives of these courses are examined, the content of the courses, the requirements for the level of knowledge and skills of preschool children, the continuity with computer science programs for elementary schools are analyzed, sample computer science programs for preschool children are drawn up, classes and events in a preschool educational institution using computer technologies.

Having considered all the discipline programs for students at the Tashkent State Pedagogical University named after Nizami, we can conclude that the formation of ICT competency is at a sufficient level. Students form all the components of ICT competency necessary for work in a preschool and elementary school.

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