PROFESSIONAL STANDARDS OF THE TEACHER AND PEDAGOGICAL ICT – TOOLS IN STRUCTURE OF THE “ICT IN EDUCATION AND CULTURAL ACTIVITIES” DISCIPLINE IN THE PROCESS OF TRAINING BACHELORS OF TEACHER EDUCATION

A. Khusainova, M. Lukoyanova

Kazan (Volga Region) Federal University (RUSSIAN FEDERATION)
alfirahamzovna@gmail.com, marina-lkn@yandex.ru

Abstract

Professional standard for teachers approved by the Ministry of labour and social protection of the Russian Federation dated 18.10.2013 contains a significant number of positions related to ICT - competence. Teachers of the Institute of Philology and intercultural communication of Kazan Federal University (Volga reg.) (K (VR) FU) have the task of the formation these competences in the framework of subjects related to Internet technology. The article briefly discusses the most popular and promising modern pedagogical ICT - tools: Web 2.0, web portfolio and new formats of educational resources.

The article also discusses the structure and content of "ICT in education and cultural activities" for bachelors in teacher education and some methodological peculiarities of teaching the subject. The article presents the curriculum of the discipline, practical works, including a description of the works and skills that need to form. The article concluded that one of the most effective tools to improve work with students in teaching and research is a mixed learning technology, integrated into a unified information-educational environment of the course.

The approach to the construction of academic discipline "ICT in education and cultural activities" allows students to demonstrate the level of formation of professional pedagogical skills in the application of ICT at the end of training.

Keywords: the unified information - educational environment of the course, professional ICT - tools, the teacher's professional standard, web 2.0 services.

1 INTRODUCTION

Professional standard for teachers approved by the Ministry of labour and social protection of the Russian Federation dated 18.10.2013 contains a significant number of positions related to ICT - competence. Teachers of the Institute of Philology and intercultural communication of Kazan Federal University (Volga reg.) (K (VR) FU) have the task of the formation these competences in the framework of subjects related to Internet technology. The article briefly discusses the most popular and promising modern pedagogical ICT - tools: Web 2.0, web portfolio and new formats of educational resources.

A teacher is a key figure in the reform of education. The introduction of a new professional standard of the teacher must inevitably lead to a change in the standards of its preparation and retraining in higher education. Professional ICT competence - skilled usage common in the profession of ICT tools in solving professional problems.

The article also discusses the structure and content of "ICT in education and cultural activities" for bachelors in teacher education and some methodological peculiarities of teaching the subject. The article presents the curriculum of the discipline, practical works, including a description of the works and skills that need to form. The article concluded that one of the most effective tools to improve work with students in teaching and research is a mixed learning technology, integrated into a unified information-educational environment of the course.

The approach to the construction of academic discipline "ICT in education and cultural activities" allows students to demonstrate the level of formation of professional pedagogical skills in the application of ICT at the end of training.

2 METHODOLOGY

The main methods of obtaining the material:

the analysis of didactic possibilities of application of web technologies in professional activity of the teacher;

the analysis of the Professional standard of the teacher;

analysis of the main educational program for the preparation of bachelors of teacher education in the aspect of studying the content and structure of the basic discipline " ICT in education and cultural activities."

According to the Federal Educational Standard of .in the direction of training 44.03.01 teacher education (undergraduate level) graduate) [1], has mastered the educational program must be ready to solve various professional tasks including the following: "the organization of process of training and education in the sphere of education using technologies that reflect the specific subject area and the relevant age-related and psychophysical characteristics of students, including their special educational needs" and "professional self-education and personal growth."

To perform these professional tasks, a bachelor needs to possess the ICT competences:

- General user ICT competence;
- General pedagogical ICT competence;
- Subject - pedagogical ICT competence (reflecting the professional ICT competence of the relevant human activities).

There are three main components of ICT competence [2].

1. General user ICT competence:
   1.1. Using the techniques and following the rules of the start, pause, continue and shutdown ICT-enabled, Troubleshooting, provision of consumable materials, ergonomics, safety and other issues included in the learning outcomes of ICT in the primary school.
   1.2. Adherence to ethical and legal standards of using ICT (including the inadmissibility of the unauthorized use or the imposition of information).
   1.3. Video-audio record the world and in the educational process.
   1.4. Keyboard input.
   1.5. Audio and video communication (two-way communication, conference, immediate and deferred message, automated text correction and translation between languages).
   1.6. The skills of searching the Internet and databases.
   1.7. Systematic use of available skills in everyday and professional context.
2. General pedagogical ICT competence:
   2.1. Pedagogical activity in the information environment (IP) and its permanent display of IP in accordance with the objectives of:
      2.1.1. Planning and objective analysis of the educational process.
      2.1.2. Transparency and clarity of the educational process the world around them (and the appropriate access restrictions).
      2.1.3. Transparency and clarity of the educational process the world around them (and the appropriate access restrictions).
   2.2. The organization of educational process:
      2.2.1. Issuing assignments to students
      2.2.2. The assignments for the next class, reviewing and fixing the intermediate and final results, including in accordance with a predetermined set of criteria,
      2.2.3. Compiling and annotating a portfolio of students, and his own,
      2.2.4. Remote counselling of students when performing tasks that support student interaction with tutor.
   2.3. Organization of educational process in which students systematically in accordance with the aims of education:
      2.3.1. Carry out activities and achieve results in an open controlled information space,
      2.3.2. Follow the rules of citation and references (with the ability of teachers to use the system of Antiplagiat),
      2.3.3. Use the available tools for information activities.
   2.4. Preparation and conduct of speeches, discussions, consultations with computer support, including in the telecommunication environment.
   2.5. Organization and conduct of group (including interschool) activities in the telecommunication environment.
   2.6. Use of activity design tools (including collective), visualization of roles and events.
   2.7. Visual communication is the use of visual aids in the communication process, including conceptual, organizational and other diagrams, video editing.
   2.8. Forecasting, design and relative assessment of the student's individual progress, based on the current state, personality characteristics, previous history, accumulated statistical information about different students.
   2.9. Evaluation of the quality of digital educational resources (sources, tools) for specific educational tasks for their use.

2.10. Accounting for public information space, in particular for young people.
2.11. Support the formation and use of a common user component in the work of students.
2.12. Organization of monitoring of students for health reasons.

3. Subject - pedagogical ICT competence
   3.1. Staging and conducting an experiment in the virtual laboratories of its subject.
   3.2. Obtaining an array of numeric data by automatically reading from digital video gadgets (sensors), subsequent measurements and accumulating experimental data.
   3.3. Processing numeric data using computer statistics and visualization tools.
   3.4. Geolocation. Entering information into geoinformation systems. Recognition of objects on maps and space images, the combination of maps and photographs.
   3.5. Use of digital determinants, their addition.
   3.6. Knowledge of the quality information sources of your subject, including: o literary texts and screen versions, o historical documents, including historical maps.
   3.7. Representation of information in genealogical trees and on time lines.
   3.8. The use of digital music technology and performance.
   3.9. Using digital technologies for visual creativity, including animation, animation, 3D graphics and prototyping.
   3.10. The construction of virtual and real devices with digital control.
   3.11. Teacher support for the implementation of all elements of the subject - pedagogical component of the subject in the work of students.

3. RESULTS

Consider the structure and methodological features of teaching this subject. For the study of the discipline there are 2 credit units (72 hours), of which classroom hours are 32 hours, the independent work of the students is 40 hours. The purpose of studying this discipline is to increase the level of ICT competence of bachelors for the systematic implementation of Federal Educational Standard regulations in the educational process.

The objectives of the discipline are:

Deepening and systematization of knowledge about information technologies.

Forming a system of practical skills and experience in the effective use of information technology in pedagogical activity.

As a result of mastering the discipline, the student must:

know: basic ways of searching and processing information using information technology; basics of working with online services;

be able to: organize education and upbringing in the sphere of education using modern information technologies (use of digital educational resources); interact with public and educational organizations, children's groups and parents for solving problems in professional activity using Internet technologies (e-mail, Skype, chat, forum); use the opportunities of the educational environment to ensure the quality of education (creating presentations, video films, slide shows, website, e- magazine); carry out professional self-education and personal growth using distance education, to organize a cultural event (virtual tour, the forum - discussion of movie, books,...;); acquire with the help of information technologies new knowledge and skills for their use in practical activities;

own: ability to form resource-information bases for the implementation of practical activities.

An exemplary teaching and thematic plan for the discipline "ICT in education and cultural activities" is presented in Table. 1.

Table 1. An exemplary teaching and thematic plan for the discipline

№	discipline unit	The types and time of classroom work, their labor input (in hours)

		lection	practice	computer work
1. Web technologies in education				
1	Internet search engines	2		
2	Educational resources of the Internet. Adherence to ethical and legal standards of ICT use.	2		
3	The role of web technologies in the innovation process in education	2		
4	Web-technologies as a tool for self-education of the teacher. Open Education. Distance learning	2		
2. Social services and methods of their use in education				
5	Social networks. Internet communities. The use of online communities for self-education		2	
6	Social bookmarking. Using a bookmark service when planning lessons			2
7	Joint storage, processing and use of documents in cloud storage			2
8	Interactive didactic materials. Creation of training materials and materials for knowledge control based on online services			4
9	Sites, blogs, virtual whiteboards as a means of organizing classrooms and extracurricular activities			4
10	Presentations, publications			4
11	Screencasts as part of the educational content			2
12	Geoservices as a means of creating training materials			2
13	Virtual museums, libraries. Organization of cultural activities based on Internet resources		2	
	Final control	E-portfolio, educational mini-project		
	total	8	4	20

The educational process in the discipline takes the form of lectures, seminars, laboratory classes in the computer classroom and independent work of students on the Internet. In the selection of forms and methods of teaching the subject you must use training material as close as possible to future professional situations.

The main form of studying section 1 is the lecture sessions, which are the teacher's presentations with a slide show presentation followed by a discussion. As a result of studying this section, the student must master the following components of competencies: to know the role and place of informatization of education, information technologies in the information society and science. As the boundary control section 1, the students give the teacher a series of documents on Google drive.

The study section 2 is practical. At the beginning of the lesson the teacher brings to bachelors basic theoretical moments, to develop theoretical and practical significance of the topic and defines the procedure and requirements to execution of work. The teacher introduces students to information technology, their capabilities for the efficient organization and conduct of academic and extra-curricular activities. Next, students receive a link to the assignment posted on the school website. The result of the operation is the training material that adds to the educational portfolio of the student.

The content of practical work with a description of the work, the conditions of implementation and the skills that are formed are presented in Table. 2.

Table. 2. The content of practical work

№	training topics	a description of the work	Formed skills (components of ICT – competence)
1	Practical work 1. Social networks. Internet communities. The use of online communities for self-education	Using search and query language, create an annotated list of pedagogical Internet communities useful in pedagogical activity (in a specific subject area.) Discussion of the topic "The role and place of Internet communities in the diffusion of innovative technologies" in the framework of a training group in the social network telegram (vkontakte, ...)	Use the query language when searching for educational information. Observance of ethical and legal norms of the use of ICT (including the inadmissibility of unauthorized use and imposition of information).
2	Computer work 1. Social bookmarking. Using a bookmark service when planning lessons	Put links to the sites from the annotated list of teaching communities in the service of social bookmarking. Create a lesson plan using the Symbaloo Learning Path	Use of activity design tools (including collective), visualization of roles and events.
3	Computer work 2. Joint storage, processing and use of documents in cloud storage	Creating a text document on Google drive (lecture notes). Opening access to the document. Joint work on a text document on Google drive. Reviewing and commenting on the document	Use social media storage for storing and distributing teaching materials
4	Computer work 3. Interactive didactic materials.	Create a multimedia interactive exercise in the LeamingApps service. Creating a cartoon in the Multator service	Using digital technologies for visual creativity, including animation, animation, 3D graphics and prototyping.
5	Computer work 4. Creation of training materials and materials for knowledge control based on online services	Creating a questionnaire for parents and a test to check knowledge of a Forms-based Google. The invitation to take these tests, analysis of results, summary report.	Prediction, projection and relative evaluation of individual student progress, based on the current status, personality characteristics, previous history, previously accumulated statistical information about diverse learners.
6	Computer work 5. Sites, blogs, virtual whiteboards as a means of organizing classrooms and extracurricular activities	The creation of the website based on Google sites, selection of materials on the subject (training subject specialty). The opening of access to the website, choose the layout and themes, and edit content.	Planning and organization of educational process using ICT.

7	Computer work 6. Virtual boards as a means of organizing work with parents	Create a virtual Board on the basis of the service Padlet. Training materials for conducting parent meetings. Open access to the Board, the choice of location of posts and themes, edit the content.	Organization and conduct of group (including interschool) activities in the telecommunication environment.
8	Computer work 7. Presentations, publications	Creating a presentation for the lesson (specialty) based on the Prezi service. Background design, editing paths, adding content, access levels to the presentation. Creation of electronic publication in the form of a book (magazine) with interactive content, with page turning effect using the ReadList service	Preparation and carrying out of speeches, discussions, consultations with computer support, including in the telecommunication environment
9	Computer work 8. Tapes of time. Family trees	Create a family tree using the online services of creating a family tree	Representation of information in genealogical trees and on time lines.
10	Computer work 9. Screencasts as part of the educational content	Creation of a fragment of the lesson with an explanation of the material (1-2 min) based on the ScreenOMatic service. Placement of screencast on the site (virtual workbook).	Systematic use of available skills in everyday and professional context. Visual communication – the use of means of visual objects in the communication process, including conceptual, organizational charts, etc., video editing.
11	Computer work 10. Geoservices as a means of creating training materials	Virtual tour with the help of 3D-Planet service. Create a thematic map based on Google Maps for the lesson (by specialty). Placing a map on a website or a virtual board	Geolocation. Entering information into geoinformation systems.
12	Practical work 2. Virtual museums, libraries. Organization of cultural activities based on Internet resources	To prepare a speech on the theme "the Virtual Museum (library)". The form of communication chosen by the student (presentation, virtual tour, website...)	Knowledge of the quality information sources of your subject, including: literary texts and screen versions, historical documents, including historical maps.

The structure and content of the independent work of the discipline are presente in Table 3.

Table.3. Structure and content of the independent work of the discipline

№	discipline unit	Kind of independent activity of students	labor input (in hours)	Forms of control of independent work of students

1. Web technologies in education				
1	Internet search engines	Search for resources by keywords, by image, by catalog	2	Report
2	Educational resources of the Internet. Adherence to ethical and legal standards of ICT use.	Search for examples of educational resources on the basis of classification, to create a table to Google drive	2	Three examples for each type of educational resources in the table on Google drive
3	The role of web technologies in the innovation process in education	The study of the presentation of lectures, create a text document to Google drive	2	Abstract on the topic (a document on Google disk)
2. Social services and methods of their use in education				
3	Social networks. Internet communities. The use of online communities for self-education	Creating a temporary self-education tape	2	Temporary self-education tape student
4	Social bookmarking. Using a bookmark service when planning lessons	Search for bookmarks collections on the topic "innovations in education"	2	Collections from the Symbaloo Gallery, added to your own collection of collections
5	Joint storage, processing and use of documents in cloud storage	Creation and storage of educational materials on the subject on Google drive	2	Folders and files on the google disk
6	Interactive didactic materials. Creation of training materials and materials for knowledge control based on online services	Creation of scanwords, tests in online services	2	A series of posts with links to work in Padlet
7	Sites, blogs, virtual whiteboards as a means of organizing classrooms and extracurricular activities	Creating a blog	4	A teacher's blog in one of the services
8	Presentations, publications	Creating a Presentation of a Family Tree	2	Presentation on Google Drive
9	Screencasts as part of the educational content	Study and compare services for creating screencasts,	2	Table of comparative characteristics on the Google Drive
10	Geoservices as a means of creating training materials	Creation of a thematic map "Attractions of Kazan"	2	Link to the Google thematic map, posted on the blog

11	Virtual museums, libraries. Organization of cultural activities based on Internet resources	Studying the materials of the virtual museum "History of the Second World War"	2	Report
	Final control		12	E - portfolio, educational mini-project
	total		40	

Educational technologies used in the process of teaching discipline, including interactive forms of learning:

Lectures using an electronic presentation.
Electronic textbook.
Interactive collection of tasks.
Online consultations using Google tools.
Exchanging Messages in Google Chat.
Virtual workbook.
Virtual board Padlet.
Student's blog.

4. CONCLUSION

Theoretical material, detailed step-by-step instructions and didactic materials on the implementation of practical and independent work are presented on the site [3].
The experience of using a unified information educational space of the discipline described in) ([4], [5], [6]). The principle of blended learning allows students to acquire practical skills in web – tools for planning, organizing and conducting educational process in their own learning process.

Thus, as a result of the development of the discipline " ICT in education and cultural activities " in the context of the use of ICT as pedagogical tools, bachelors acquire their own experience in the effective use of information and communication technologies in educational activities, through which a positive motivation for using information technologies to solve professional problems in conditions implementation of Federal Educational Standard and the Professional Standard of a Teacher.

It is necessary to show the connection of the educational material with the future professional activity of the teacher, the importance and appropriateness of studying information and communication technologies in connection with their wide didactic possibilities. The proposed content of the training bachelors of pedagogical education in the aspect of forming ICT competence will enable to realize educational, educational functions in work with students in school with different needs

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