Russian Experience of the Unesco's Programs Realization in the Sphere of Informatization of the Pedagogical Education

Timur Gadzhiyevich Vezirov[1], Ruslan Jangirovich Guseynov[2],
Eldar Sograbovich Sultanov[3], Ramazan Medjidovich Abdulgalimov[4] and
Yunna Valeryevna Sorokopud[5]

[1]Dagestan State Pedagogical University, 17Gamidova St, Makhachkala, 367000
[2]Derbent brench of "Sholohov Moscow State University the Humanities»
18 Buynakskiy St, Derbent, 368600 Russia.
[3]Derbent branch of «Dagestan State Pedagogical University» 15-a Soviet St, Derbent, 368600 Russia
[4]Dagestan State Medical Academy,1 Lenina St, Makhachkala, 367000 Russia
[5]North-Caucasian Federal University, 2 Kulakova St, Stavropol, Russia

The main goal of the research is to show the possibilities of using information and communication technologies in the training of masters of M.A. academic program "Pedagogical Education", which are used in different universities of Russia. In the article it is discussed some pedagogical and methodological aspects of the usage of information and communication technologies in the preparation of masters in teaching activity, where special attention is paid to information and educational environment of pedagogical high school and some of its components. The article provides links to the sites that host the electronic publishing and multimedia projects created by teachers, graduate students and undergraduates of Dagestan State Pedagogical University. In conclusion, the authors show how information and communication technologies affect the formation of professional competence of masters of education.

Key words:means of information-communication and media technologies, training of masters, teaching activities, informational and educational environment, electronic publications and resources.

Modern information societyduring the period of mass globalization of communication makes great demands of personnel training in the sphere of education while using and producing information resource of the Internet, developing methods and means of informational interaction in the local and global networks, realizing opportunities of information and communication technologies (ICT) in the process of self-education and knowledge representation.

September 1, 2013 in the Russian Federation the law «About education in the Russian Federation»came into force. It determines the direction of development of professional education until 2018, the modernization of the Federal educational standards, implementing Federal state learning standardsof higher professional education (FSLS of HPE) of the third generation[1].

During the implementation of the concept of support of the pedagogical education

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* To whom all correspondence should be addressed.

developmenta new system of teacher's training should be created. The key elements of the system could be as follows:

1. Master course for teacher-methodologistsand managers, priority budget places for those who workin the education system.
2. Practical modular master course for those who want to work as teachers but do not have pedagogical education with priority crediting for those already working in general education.

A theoretical analysis has allowed of concluding that the development of multi-level system of higher professional pedagogical education in Russia is an objective process. Its systematic development requires the examination of a number of factors, which include: the changing requests of the regional educational market; keen competition existing in the system of higher pedagogical education; new understanding of the evaluation criteria of professional competence of teachers; rethinking of qualifying characteristics of a specialist in the sphere of education; the definition of new principles of organization of the system of higher pedagogical education considering the international standards and national experience[2].

The main goals of masters' training: development of knowledge and scientific thinking among students, development and active usage of skills of conducting scientific and pedagogical work; preparation of the researchers and teachers for higher education institutions and other spheres of professional activity or for further studies (post-graduate courses).

It should be noted that the state requirements to the level of training of masters provide greater opportunity for individualization of education, development of their personality, giving universities the right to execute 80% of the content of the biennial program of specialized training.

Master course implies more deep specialization and often focuses on research or teaching work.

We are convinced that the special training of the master students of the course «Pedagogical education» in the sphere of informatization of education enables to increase efficiency of the usage of ICT in the education system.

In such type of training we apply the following forms of information and communication technologies:

1. Usage of electronic products allows to intensify the activities of the future graduates, allows to improve the quality of teaching at a specific subject, to reflect visibly the substantial sides of an object – the transparency principle.
2. Usage of multimedia presentations helps to present educational material as a system of bright images filled with comprehensive structured information in an algorithmic order.
3. Usage of Internet resources. The Internet has a huge potential of educational services (e-mail, Internet searchers, electronic conferences), and becomes a part of modern education. Receiving fromnetwork training-relevant information, future masters acquire necessary skills.
4. Usage of interactive whiteboards and SMART Boards. In modern Universitiesinteractive whiteboard as a tool of a new generation, involving interactive organization of the educational activity of future graduates,becomes more and more popular [3; 4; 5].

Master student of this course should be able to solve such tasks as:

a) Creation and usage of educational technologies, focused on such skills as – carrying out various types of independent activity on collection, processing, storage, transmission, production of educational information and educational activities to formalize the processes of representation and retrieval of knowledge and providing comfortable and motivational educational process;
b) Functioningof the «virtual» open educational systems of telecommunication access on the basis of the distributed information resource, providing social adaptation to life in the information society;
c) Application of ICTs in the management of the institution of secondary and tertiary levels of education, development for their implementation in the educational process;

d) Usage of training-material base of education informatization;
e) Creation and usage of ICT-based monitoring technologies for development of educational process in institutions;
f) Organization of scientific research and experimental activity on the basis of automated means of theresults of educational experiment's processing occurring both in real terms and virtual[6-7].

The application of ICT into the educational system becomes more extensive from year to year. Most used in practice educational, scientific and methodical developments are now in electronic form.

Education is a central function of any nation or community. At 2011 UNESCO published a document "UNESCO ICT competency framework for teachers". The ICT Competency Framework for Teachers project is part of a range of initiatives by the UN and its specialized agencies, including UNESCO, to promote educational reform and sustainable economic development.

The ICT-CFT project supports these programs by building on the relationship between ICT use, education reform and economic growth. The ICT-CFT is based on the principle that systemic social and economic growth is the key to poverty reduction and increased prosperity. It is also based on the assumptions articulated in the UNESCO report "Education in and for the Information Society" that ICT can be a driver for growth and empowerment, with profound implications for improving education.

The above objectives are the basis for the following three complementary approaches to training ICT skills (pic. 1).
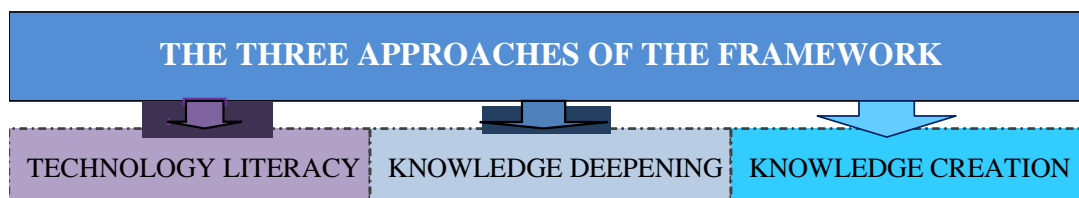
Pic. 1. The three approaches to training ICT skills[8].

These three approaches enable education to help develop a country's economy and society, from one which uses new technology, to one which also has a high-performance workforce, and finally to one which is a knowledge economy and information society. Through these approaches, a country's students, and ultimately its citizens and workforce, acquire increasingly sophisticated skills needed to support economic, social, cultural and environmental development, as well as an improved standard of living.

The approaches represent different stages in the use of ICT in education. The approach which a country adopts will depend on the extent to which ICT is integrated into its society, economy and education system (pic.2).

The analysis of modern Russian and foreign researches suggests that information-educational environment is a complex multi-purpose system that combines educational and educational-methodical resources, software products, systems of the knowledge control and simultaneously highly structured environment for the organization of various forms of independent work on the basis of educational ICT tools.

The information-educational environment is a dynamic, self-organizing system, open for teacher and learner, the diversity of content and functions of which creates the possibility of building an individual educational program for each learner.

In Russia in connection with the practical implementation of UNESCO's programs of information technologies in the sphere of informatization[8-10] the training of Informatics teachers has a great importance.

The authors of this article being representatives of the leading universities of Russia contribute to the process of preparation of bachelors, specialists and masters on the basis of

information technologies. The basic approach that we have adopted is that the methods of usage of ICT by students of magistracy can be based on solution of research tasks using Internet. In the process of studying a number of significant matters are left without the expanded explanation. The MA students are encouraged to find the answer for these questions based on the information obtained from the Internet. However, master students must form their own point of view on the issues and present it in the most convincing manner.

The basis of the information-educational environment of higher education pedagogical institutionis the telecommunication systems providing all kinds of activities in institution.

Telecommunication interaction is based on technologies and principles of the Internet, allowing you to integrate local and global networks, to use well-tested technologies and software tools for implementation of the communication services. The important circumstance is that the usage of technologies of the Internet allows you to shift the main computational load on the external servers, through the usage of «cloud» technologies.

Methodicalpart

We have developed a method of organization of scientific-pedagogical practice of the master programs with the following features:

a) Strengthening of psychological and pedagogical training of future masters;

b) Innovative nature of practice, which consists of the preparation, development and implementation of pedagogical innovations in the educational process;

c) Availability of two components – scientific and pedagogical –masters' practice realized in the form of pedagogical studies or transfer of results of research work of an undergraduate in the process of teaching of mathematics and information Sciences;

d) Focus of practice on maintaining the creative nature of the work, the development of communicative skills, need for continuous self-education and self-education.
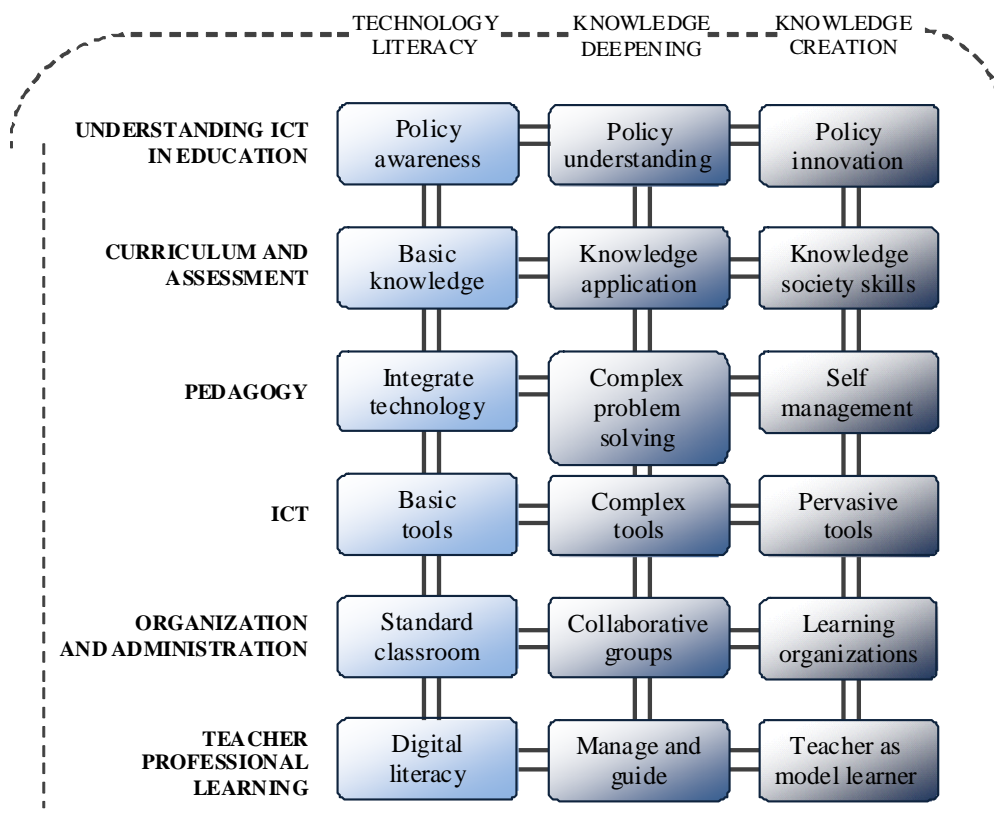

Pic. 2. The practical realization of approaches to training ICT skills ineducation[8]

Taking into account the above points methodological recommendations on organization of a self-work of future masters were created. Practice organization in accordance with these guidelines provides preparation of masters to perform the functions of a teacher of a pedagogical University, taking into account the requirements of innovative pedagogical activity of a modern teacher.

The report of MA students about scientific-pedagogical practice is a multimedia project with an educational-methodical function, which can be used multifaceted: teachers – for carrying out different forms of training with students; students of bachelor and master degree – for teaching practice in schools and innovative education institutions; heads of scientific-practical practice – as a sample for analysis of the advantages and disadvantages of the developed teaching materials.

The next stage in the training of masters is a research practice (RP), which aims to: systematization, expansion and consolidation of professional knowledge, formation of practical skills of selfscientific work, research and experimentation.

For the successful development of anRP graduate students use their knowledge, abilities, skills, methods, activities and installations received and formed during the studying of the following disciplines: «Innovative processes in education», «Information technologies in professional activity», «Methodology and methods of scientific research», «Business foreign language», «Modern pedagogical technologies and methods of education based on ICT», «ICT Usage in physic-mathematical subject activity», «Multimedia technologies in physic-mathematical education», «Pedagogical testing», «Development and usage of digital educational resources», «Development of an e-portfolio of a teacher», «Modeling, analysis and visualization of experimental data with the help of ICT tools», «Internet and web 2.0 services in pedagogical activity», «Methods and technologies programming».

The contents of the courses connected with the study of information means and communication technologies in the master's program must include an introductory phase, involving the correction of previously acquired knowledge in the sphere of data means and formation of stable motivation to use them in research activities, and the main stage, involving the study of means of information and communication technologies, which provide the tools not only for scientific activity, but also for analyzing and reporting results.

An important feature of the training of masters in modern conditions is the increasing of the role of self-education, involvement of students in research activities; focus on Advisory work and individually.

It should be noted that the self work of masters is intendednot only for mastering each discipline, but also for formation of skills of self work in the educational, scientific, professional activities, the ability to take responsibility, to solve the problems, to find constructive solutions and the like.Self work contributes to the deepening and expansion of knowledge, formation of research skills, professionally significant qualities of the trainee.

The essential condition for the successful organization of extracurricular self work is the educational-methodical support of activity of future masters, as well as providing opportunities for them to practice, to write their master thesis.

Thus, the scientific-methodical seminar can playan important role. It takes place monthlyand future masters talk about the methodological apparatus of their master thesis, about new author's developments on the basis of information and communication technologies.

Main part

Consider the possibility of applying information technologies in the training of mathematical faculty masters, studying the M.A. academic program "Pedagogical Education" of the Dagestan state pedagogical University, Mahachkala [11].

Creation of personal pages and school sites, participation in the network associations and conferences, competitions and courses, in the life of the teachers' staff with a Bank of experience exchange, teachers' meetings, chat – all this should exist in real life of a teacher.

We have developed an educational Web-site "Masters of mathematical faculty", including the following clusters:

1. Information about the head of master's programs.
2. Information about the master students.
3. Educational-methodical support.

The block «Educational-methodical support» includes author's electronic periodical, master thesis, multimedia projects, and useful links to educational sites.

Recently the educational process in higher educational institutions has undergone a number of changes because of the usage of interactive SMART technologies, which are a part of the information educational environment of higher establishments. Teachers are faced with the problem of effective usage of the new equipment; in particular, adapting theirs training courses for the media and interactive standard. Themethod of transmission of educational information haschanged either with theusage of multimedia means.

Of all the currently existing training tools only digital educational resources can compete with the teacher, because they can carry meaningful learning interactions.

Today master students, possessing basic ICT competences, can develop and use various electronic publications and resources.

TheInternet materials help a lot with the organization of education process:
1. The Federal portal «Russian education» (www.edu.ru).
2. Collection of digital educational resources (http://school-collection.edu.ru).
3. Russian educational portal (http://www.school.edu.ru/).
4. The portal «Information-communication technologies in education (http://www.ict.edu.ru/).

An important component of the educational environment of the pedagogical University is electronic publications and resources: electronic educational-methodical modules (EEMM), electronic educational-methodical materials (EEMM) and electronic educational-methodical complexes (EEMC).

One of the directions of preparation of masters of pedagogical education in the sphere of ICT is the usage of electronic editions and resources – electronicmeans of education.

In the process of the master studies we use the site of e-learning tools - http://www.ido.rudn.ru/nfpk/tech/t1.html, and the site of distance learning, which is a complex of electronic textbooks - http://w503.krinc.ru:8100.

The content of the information-educational environment depends on pedagogical goals that determine the choice of method, the selection of contents, means and methods of training.

Some electronic publications developed by us were registered by Federal state unitary enterprise scientific-technical center «Informregister» – the Depository of electronic publications (Moscow city).All the electronic publications and multimedia projects posted on the website: http://dgpu-f.narod.ru/mag/.

Modern opportunities of information and communication technologies allow realizing the educational process with the help of virtual educational environment – a common educational space, built through the integration of traditional media and computer technology.

Electroniceducational resources and multimedia projects, developed by students of magistracy postedon the website of learning portal «SKIF» (http://skif.donstu.ru) in section «Dagestan state pedagogical University».

CONCLUSIONS

Our experience of work in master courses and researchers has shown that the usage of modern ICT allows:
a) Enhance motivation, increase interest and expand cognitive needs of future graduates of pedagogical education;
b) Ensure the individualization of education, create the prerequisites for the transition to personal-oriented education;
c) Enhance the training interactivity, develop the dialogical nature of the educational process;
d) Enhance training visibility, improve the visualization of the studied material;
e) Expand the range of educational tasks used in training;
f) Increase the efficiency monitoring of learning outcomes;
g) «plunge» future masters into a virtual environment with the possibility of

simulation of academic and professional situations, initiating a demonstration of willingness to solve problems.

The analysis of motives of the usage of electronic publications and resources in training activity showed that most graduate students (82%) have a desire to upgrade their professional training with ICTtools.

On the basis of the foreign scientists' studies[12; 13; 14], we believe that the social networks, applications for mobile phones can be effectively used in the learning process. Most young people now actively use the networks, and it allowsattracting students and involving them in the studying process.

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