Model "Electronic University": Educational Paradigm of the Future

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Abstract[1]

In given article it is told about model of electronic university ChelGu and about about changes of a paradigm of formation of the future, the information technology connected with introduction in formation.

1. Introduction

The development and the widespread use of information and communication technologies is the global trend of the world's headway and one of the determinatives of the Economic Competitiveness, the extension of possibilities of its integration into the World System of an Economy, the speed of innovations development and the Efficiency of the government and local government.

At the conference "Key Trends in Higher Education in the 21st Century", convened under the auspices of UNESCO and the UN in 2009 it was noted that now we see a systemic change in the role of education and science in society, characterized by [1]:

- the globalization of educational and scientific space, blurring of national boundaries in educational environment;
- exponential growth in the demand for higher education (phenomenon of "massification");
- the emergence of a knowledge society through its "digitalization" and "science intensity";
- significant change in the role and functions of universities in society.

2. Electronic scientifically educational complex of university

Abbreviation of backlog of Russia from the industrial-developed countries on level of information of economy and a society is interfered by a number of factors, among which:

- the imperfect standard-legal base that have been designed without respect of opportunities of modern informational technologies;
- insufficient development of the IT sector in the field of the government;
- insufficient level of a professional training in the field of usage of informational technologies;
- a digital inequality of the locales, separate categories of citizens, including persons with the limited physical possibilities.

The model of the electronic university can be perfectly applied to solve such problems in the field of the informational-communicational policy. The electronic university allows to organise education process with opportunities of modern remote interactive technologies which provide live dialogue between teachers and students despite their geographical location, and to create the uniform network-based communication environment.

Chelyabinsk state university developed the program of development of the electronic scientifically-educational complex by integration (fig. 1):

- The Fundamental university, which primary goal – a professional training, research and development and experimental base for hi-tech branches of economy;
- Electronic university, which primary goal – development of personnel potential, including for public authorities, and creation of the uniform interactive communication space allowing fast to spend information interchange, innovations and technologies;
- The Corporate university carrying out corporate training and uniting in innovative enterprises of technopark, the consulting companies, capable to translate results of scientific researches in a plane of practical usage and commercial result.

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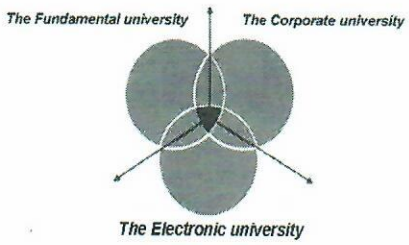

Fig. 1. Model "Electronic university"

In a basis of "Electronic university" there is the uniform informational-educational environment including an IT infrastructure [2], the set of applications and informational resources and the operation documentation. The system of electronic derivation provides implementation of following functions:

- course administration;
- content management;
- interactive delivery;
- electronic resource access;
- virtual laboratories;
- sequencing;
- testing/assessment;
- tracking;
- learner profile.

In 2009 Chelyabinsk State University and the company Uralsvyazinform created "Electronic University", an educational infrastructure which is unique in Russia, providing affordable and quality education through Internet technologies."Electronic University" can be used for the following tasks:

- obtaining an additional qualification;
- building the educational environment for students of full-time tuition;
- organization of project-based learning in industrial setting;
- retraining of state and municipal employees in the IT field;
- extra-mural higher education;
- postgraduate education and training of highly qualified personnel;
- training in high school.

"CSU Electronic University" is a complex of the following information systems:

- Adobe Acrobat Connect Pro webinar system; "Mentor" - opensource software developed in the University (fig. 2);
- Tandberg – videoconferencing system;
- Electronic knowledge repository (digital library, video library of lectures and seminars, local "wikipedia");
- Certification system;
- Software system for Registrar and Applications – Electronic Dean's Office, developed at the University.

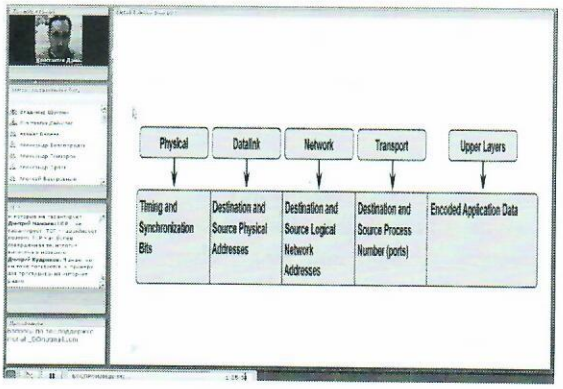

Fig. 2. Interactive delivery

The main advantages of the CSU "Electronic University" project that distinguish it from other projects in the field of distance education in Russia are [3]:

- fully interactive system of lectures, seminars and laboratory work, enabling students and teachers to communicate in real time in virtual classrooms;
- extensive backbone network of JSC "Uralsvyazinform" is at students' disposal, allowing them to access educational content.

Infrastructure of the "Electronic University" consists of:

- TV studio with 20 virtual classrooms;
- Set of network access facilities with broadband Internet access;
- CSU-based technical support centre.

Electronic University approach solves many problems of modern education related to access to higher education for working people, people living in "mono-towns" and remote areas, people with limited financial resources, and persons with disabilities.

The education system for the electronic government includes an all-around development: credit-modular system of training, rating system of certification of students, system of linguistic preparation.

Distinctive features of such electronic scientifically-educational complex are:

- remote completely interactive preparation, retraining, of frames for operation of "the electronic government";

- active participation in creation of conditions for successful realisation of federal target programs in the field of electronic technologies;
- performance of scientific researches in strategically significant for the Russian Federation and the Ural branches;
- creation of interactive communication space for a fast and effective exchange of experience, innovations and technologies.

The Chelyabinsk state university has successful experience of the implementation of the first electronic training project in the field of an information technology in Ural together with the largest telecommunication operator in the district. The Chelyabinsk state university – the only one of the Russian high schools of participated in development of the European diploma («Diploma Supplement»). Development of university by the way of creation of electronic scientifically-educational centre allows to integrate it effectively into the global scientific and educational community, and in particular in the European high school.

3. Conclusion

Development of broadband Internet access allowed full-fledged access to the volumes of information that used to be seen as enormous. This, in turn, gives an opportunity to develop new technologies: 3D-TV, Mobile TV. Society is ready for the next technological leap forward, and after 10 years we will not recognize our Internet, in the near future we will speak about the emergence of Mobile-education! The motto "Education in any place at any time in the required amount" will become a reality. Thus, it will be possible to change the educational paradigm of the future.

The main elements of educational paradigm of the future should be as follows:

- access to education at any time, anywhere and in the necessary amount
- opportunity to have an individual learning plan, lifelong learning
- equal opportunities for educational process participants in the generation of new knowledge
- equal access to education for persons with disabilities
- improving the quality of education through the use of ICT.

References

1. Kislitsyn K. N. "*Bolonsky process as the project for Europe and for Russia*", the Electronic journal «Knowledge. Understanding. Ability», № 11 – Higher education for the XXI-st century, 2010.
2. Voxmintsev A. V., Melnikov A. V. "*Fact-based search technology in data warehouse with heterogeneous structure*", 9 International Workshop on Computer science and information technologies CSIT'2007: Ufa: UGATY, 2007. pp. 31–33.
3. Voxmintsev A. V., Melnikov A. V. "*Problems of construction of conceptual models of the virtual world*", 11 International Workshop on Computer science and information technologies CSIT'2009: Crete, Greece, 2009; pp. 128–130.