Chapter 37

Virtual Training of E-Learning in the Formation of Natural Science Educational Space

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ABSTRACT

The beginning of the second decade of the 21st century is characterized by reforming the basic forms of acquisition of knowledge and skills of students as well as training. Currently the focus is on traditional forms of learning based on information and computer technology and distance education. The chapter goal is analyses Vardan Mkrttchian and Elvira Matveeva last publications about virtual training of E-learning Systems in the formation of natural science educational space and using basic chemistry subjects in online and blended education at Astrakhan State University and realization in teaching electro energetics using www.wizIQ.com plus Triple H-Avatar Cloud Private Platform of HHH University.

INTRODUCTION

The beginning of the second decade of the 21st century is characterized by the formation of the main forms of acquisition of knowledge and skills of students as well as training. Currently the focus is on traditional forms of learning based on information and computer technology and distance education. Integral parts of the learning process are modern computer technology. No one doubts their effectiveness. Modernization of modern education system is due to the adoption of the State Program of the Russian Federation “Information Society (2011 - 2020).” Some of the objectives of the Program: the creation and development of electronic services in the field of education and science; the development of the Russian market of information and telecommunication technologies, enabling the transition to an economy that are carried out through information technology, including stimulation of domestic developments in the field of information and communication technologies; training of qualified personnel in the field of information and telecommunication technologies, etc. In this regard, is developed ways of improving education: is improving the quality, focus on the development of highly moral, socially active and creative personality. An essential requirement for each subject of the educational process

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is the possession of skills in the use of information and communication technologies, the availability of information and communication culture and competence. Of the requirements of the Federal State standard of secondary (complete) general education highlights the key requirements specified in the “results of a meta-development of basic educational programs of secondary (complete) general education”, which should reflect:

- Willingness and ability to self-awareness and cognitive activity, including the ability to navigate the various sources of information, critically evaluate and interpret information obtained from various sources;
- Ability to use the means of information and communication technologies (ICT) in addressing the cognitive, communicative and organizational tasks in compliance with the requirements of ergonomics, safety, health, resource, legal and ethical standards of information security.
- Implementation of a professional self-education and personal growth, projecting further educational path and career;
- Utilization of the facilities of the educational and social environment and the design of new media, including information to provide methodological support for the development work of teachers;
- the design and content of the new disciplines of elective courses for profile training of students, as well as forms and methods of control and various kinds of test materials, including on the basis of information technologies;
- Research, design, organization and evaluation of the implementation of methodological support teachers using innovative technologies, etc.

Modern education system corresponds to the concept of “Education for Life”. Tasks such education have been developed by the Commission of UNESCO in 1972 under the leadership of Edgar Faure (report “Learning to be», Edgar Faure)]. Identified four “pillars of education”:

1. Learning to learn and use knowledge, i.e., receive education throughout life, in-depth work in his narrow area for a sufficiently broad general knowledge.
2. Learn to do business, not only using standard skills, but broader learning in both formal and informal social experience to cope with different situations and work in a team.
3. Learning to live together, developing and understanding other people and their desire for independence (by executing joint projects and learning to resolve conflicts), strengthening pluralism, mutual understanding and peace.
4. Learning to be, i.e., increasingly develop their personal qualities and the ability to act with greater independence, according to its own judgment and personal responsibility. Education should not ignore either one aspect of human development: memory, intelligence, sense of beauty, physical abilities and communication skills. In 1996, the UNESCO report “Education - Treasure” Edgar Faure noted that “as a starting point emphasized the urgent need to transfer an ever-growing body of knowledge and skills of young people, because it is the basis of knowledge of professional activity. The report drew attention to the elaboration of guidelines that do not allow a person to drown in a sea of information and save the direction of development, as individuals, as well as many social groups. Thus, the formation of a kind of society appeared designed to ensure a map and compass suitable for navigation in turbulent and ever-changing world”. In modern conditions the challenges facing education and numerous forms is that it may acquire, covering the entire life of a man, all the steps that allow everyone to access the dynamic knowledge of the world, others and oneself “.