AN INNOVATIVE APPROACH IN EDUCATION

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ABSTRACT

Strengthening the links between education systems, in order to develop the potential of young people is at the core of European cooperation process. Leading institutions are there to introduce and provide better teaching and learning through use of new information and communication technologies (ICT). One of the priority areas of the Strategic framework for education and training („ET 2020") is to promote and develop creativity and innovation through new instruments, which use modern ICT and by training teachers to use ICT.

Information and communication technologies provide a variety of methods and tools that open up new opportunities in distance learning students from the University of Forestry. They allow supporting the educational process by organizing it in a way, that takes into account the individual needs of students and allow building up of important digital competencies needed to achieve "knowledge-based" economy.

Key words: distance learning, information and communication technologies, innovation

INTRODUCTION

One of the main characteristics of the information society is the dominant role of Information and Communication Technologies (ICT).

Economist Fritz Machlup – pioneer in developing the concept of the information society, introduced the so-called „**information economy**".

Machlup focuses on university, which is the center of production of knowledge and learning, as „knowledge factory" related to industry[1].

Clark Kerr cites Machlup idea for industry based on knowledge and sets out his views on the great modern university, which should work as part of society, not as „**ivory tower**"[2].

One of the priority areas of the **Strategic framework for education and training („ET 2020")** is the promotion and development of creativity and innovation by applying new tools, using advanced ICT and through the training of lecturers to use ICT. Information and communication technologies provide a variety of methods and tools that open new possibilities in distance learning for students from the University of Forestry. They provide option to support the educational process by organizing it in a way that takes into account the individual needs of students and allow them to build-in digital competences needed for achieving of „knowledge-based" economy.

Knowledge is the foundation of economic growth. Knowledge-based economy

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[1] Machlup, F.(1962), The Production and Distribution of Knowledge in the United States, Princeton University Press.
Machlup F. (1980), Knowledge: its creation, distribution, and economic significance: v. 1. knowledge and knowledge production. Princeton, NJ: Princeton University Press.

[2] Kerr, C. (1963), The uses of the university, Cambridge, Mass: Harvard University Press.

is grounded on activities of people who produce and share new knowledge with high value, using ICT. The next stage in human evolution is the knowledge society in which specialized institutions will develop knowledge through direct participation of specialists in information science, known as the „**producers of knowledge**[3]".

Knowledge, recognized by the Organisation for Economic Cooperation and Development (OECD) is driving productivity and economic growth, and led to a new emphasis on the role of information, technology and training in achieving economic results. The term „**knowledge-based economy**" comes from the recognition of the place of knowledge and technologies in the modern economies.

Strategy „Europe 2020", its leading initiatives and new integrated guidelines put knowledge at the center of the EU's efforts to achieve smart, sustainable and inclusive growth.

Education, particularly higher education and its links with research and innovation play an important role in personal and social progress and the creation of high-skilled human capital.

The major steps to achieve these goals:
- Use of transformational possibilities of ICT and other new technologies to enrich lecturing;
- Improvement of learning;
- Support for personalized learning;
- Facilitation of access, through distance learning and virtual mobility;

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[3]   David, P., Foray, D. (2003), Economic Fundamentals of the Knowledge Society, Policy Futures In Education.An e-Journal, 1(1) : Special Issue: Education and the Knowledge Economy.
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- Better organization of administration and creation of new opportunities for research.

MAIN OBJECTIVES AND RESEARCH TASKS

Electronic and distance learning methods have always attracted the attention of educators and researchers in the University of Forestry. Representatives of the UF participate in the creation of the National Centre for Distance Education, and regularly attend forums related to distance and e-learning at national and international level.

The scientific research in the field of active utilization of e-learning systems and their implementation and use in support of traditional training, began back in 2003. Initially research efforts are aimed in creation of own e-learning system. All developments accumulated know-how and best practices, allow from one side, to establish the mechanisms for the operation and scope of the preset software technologies, as well as their relation to particular platform-specific implement-tations. On the other hand, the accumulated experience makes it possible to form the main goals for a broader research program related to:
- analysis of capabilities of existing e-learning systems and particularly the open source ones;
- analysis of the options for creation and usage of variety of learning activities and resources, and the specific advantages and disadvan-tages of these instruments, in terms of their application within the traditional or future distance learning forms of learning;
- problems and scope of development of methodological tools, related to the use and ownership of the e-learning systems and virtual environments for

the purposes of supporting of traditional learning;

- study the behavior of teachers, outside the sector of information and communication technologies, in the adoption and implementation of e-learning systems, and construction of appropriate models for improving perception, orientation and effective implementation of methods for electronic and distance learning from a wide range of trainers; development of methodological foundations, related to the scope and content of sample e-courses;
- laying the foundations for creation and integration in the university, of laboratory for new information technologies in learning.

Developed four research projects, dozens of scientific publications in national and international forums, the analysis and active usage of two different e-learning systems, the experience gained in introduction of distance learning master's degree in specialty „Business Management" enabled the university research teams to gain experience and to provide guidelines for future work in the field of application of the methods for electronic and distance learning at university level, with the participation of lecturers from all faculties and departments.

After participating and received approval for providing grant financial aid under program BG051PO001-4.3.04 „Development of electronic forms of distance learning in higher education", started the project BG051PO001-4.3.04-0052 „Development of the Center for electronic forms of distance learning in the University of Forestry".

Overall objective of the project – developing the system for lifelong learning through introduction of electronic distance learning at the UF. The project is aimed at

students from the degree „Bachelor" and „Master" in the field of Forestry, Forest Industry, Ecology and Landscape Architecture, Business management, Agronomy and Veterinary medicine, as well as lecturers, administrative and technical staff at the University of Forestry.

Project specific objectives are aimed at:

- Upgrading and improving of existing organization and structure of distance learning in the UF;
- Construction, installation and integration of a comprehensive e-infrastructure in the UF, offering all the features and technical capacity to implement quality and advanced distance learning;
- Setting up a team of highly qualified experts, capable of implementing and developing electronic forms of distance learning at the UF, in short and long term;
- Creation of electronic repository for standardized educational components and virtual libraries, related to e-learning platform;
- Increasing the qualification of lecturers, administrative and technical staff through:
  - Use and implementation of modern e-learning platforms;
  - Implementation of interactive teaching methods and creation of electronic forms for the purpose of distance learning;
  - Development of software for electronic forms of distance learning;
  - Creating conditions for accreditation of distance learning education form, based on the developed programs.

As a result were defined the basic tasks and objectives of the project, detailed schedule for conduction of various activities in implementation phase of the project and setting realistic goals for the preset applied and research program. All of these actions are designed to overcome specific constraints and problems, identified in the research phase, and the experience from previous years. The experience gained, allowed to define the scope and functionality of a comprehensive e-learning system that supports a large number of users, e-courses, advanced information sources, various electronic resources and activities, opportunities to create different user communities, not only at learning level, but also on a side interest level.

This project allows continuation of the successful tradition, in the field of e-learning and distance learning, introduction of modern methods and innovative approach in learning, that will allow the University of Forestry to maintain its leading role in training, in different fields of knowledge, and to keep the competitive opportunities in Bulgaria and Bulgarian education at European and international level.

CONCLUSIONS AND FUTURE WORK

Successful education and training depend increasingly on the confident, competent and innovative use of ICT.

Progress in the use of ICT for education and training across Europe has been substantial over the past few years. ICT have been taken up largely in educational institutions. Higher education is also reaping major benefits from ICT and steadily coming to grips with their potential for distance learning, virtual mobility and ongoing professional development.

The effective integration of ICT in education and training must go beyond simply replacing, streamlining or accelerating current practices. It is also necessary to find new and more effective ways of operating, supporting pedagogical and organisational innovation. It is important to envision what learning in the knowledge-based society in Europe in 2020 will be like and what kinds of skills and competences need to be learned for the new jobs of the future.

ICT use in education and training has been mainstreamed, representing an important step towards the integration of ICT in lifelong learning policies.

The role of ICT in learning and teaching, in particular to enhance creativity and innovation among people and organisations, has also been highlighted in recent communications of the European Commission[4] such as An updated strategic framework for European cooperation in education and training, and New Skills for New Jobs. The 2009 European Year of Creativity and Innovation[5] focuses on the role of ICT in enhancing cross-cutting skills such as creativity and entrepreneurship, and pushes forward innovation in education and training.

ICT-supported learning was welcomed by higher education institutions as a strong modernisation message. Education policymakers liked it because of the progressive perspectives and assumed transformation potential.

As far as the innovation aspect is concerned, distance learning has always been characterised by creativity on the part of the educators and administrators who provide distance study programmes, characterised by access, choice and flexibility options for students.

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[4] http://ec.europa.eu/education/lifelong-learning-policy/doc32_en.htm
[5] http://create2009.europa.eu/

The application of new technologies to the existing academic activities is becoming a standard element of institutional practice. Students naturally expect the availability and seamless functioning of such tools and services. The efficient central provision of facilities and support is a precondition for the successful adoption, integration, and development of e-learning practices, whilst the departments continue to work at their own developments and the institutional policy must accommodate those needs as well. Recognising and evaluating the benefits and costs of e-learning is an essential step and forms an integral part of institutional practice.

Education systems are presently determined in the context of globalisation: systems are judged against the performances of education systems elsewhere, thus constant discussion with others and benchmarking performance against that of others is a necessity. Creativity, innovation and competitiveness are essential context elements.

The project promotes the prosperous, knowledge-based and competitive economy. In the project will be implemented innovative methods in the field of e-learning, related to the usage of competence approach, compliance with the modern standards for e-learning and use of innovative software systems and tools.

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