Using E-learning In Romanian Knowledge Based Society

LUMINITA POPA\textsuperscript{1}, ADRIAN DANILA\textsuperscript{2}
Department of Electrical Engineering and Computer Science
Transilvania University of Brasov
Brasov ,M.Viteazu Street, no.5, 500185
ROMANIA
\textsuperscript{1}mluminita2001@yahoo.com, \textsuperscript{2}adrian.danila@unitbv.ro

Abstract: - Building an information society (which will be passing us on the knowledge society) can not be done without research and investment projects, both in ICT and education. Competence is the ultimate desire in Romanian higher education system and not even technologies or theories or other kind of approach will not eliminate/neglect professor-student relationship. In this paper, we will analyze the roles higher education is expected to play with the help of new technologies. E-learning technologies that are popular today are the result of evolution, both pedagogical and psychological methods of education and ICT technologies (Web technologies, multimedia technologies, communication technologies). Virtual Learning (Virtual Learning - eLearning and Educational software) should be shaped like a very attractive, useful and effective learning method.

Key-Words: e-learning, knowledge based society.

1 Introduction
Scientific research, technological development and, particularly innovation, is, along with education and business information and communications technology, one of the pillars of building the knowledge society. All ICT technologies will be convenient and efficient to be used by the faculty members and the students. Sometimes these tools may be unique from traditional tools of education. Some representations may only be reproduced or simulated by computer to provide for faculty members and students methods and techniques of graphics, animation and sounds. For example, three-dimensional representation of the evolution of physical phenomena, chemical, biological, etc., which is developing itself dynamically, can be represented or studied, in an effective manner, only using the computer. The human competence solves problems which require expertise in very particular domains. Competence and experience in solving problems can be obtained only if we took in consideration the interdependency between physical reality and virtual reality, and if we undertake all the efforts for acquiring new knowledge to proper knowledge of all aspects of physical/virtual model.

What to teach with e-Learning? How to teach with computers? These are some of the questions that need to get a response when designing and developing educational software.

In what follows, we analyze the concepts of e-learning and educational software to eliminate confusion and clarify the objectives of these technologies.

2 E-Learning
The role that communication and interaction plays in the learning process is a critical success factor in contemporary educational paradigms.

E-Learning encompasses traditional and modern methods and techniques and the use of ICT technologies (multimedia processing and asynchronous or synchronous communication) leading the subject using it to obtain experience in understanding and mastery knowledge and skills in a specific domain. In essence, e-Learning provides convenient and efficient access to the latest information and knowledge, new and effective methods of teaching, learning and knowledge assessment, training and permanent formation. In this respect, e-Learning is an alternative to the permanent education in the information society of today or tomorrow.

The professor Ion Gh. Rosca, Academy of Economic Studies from Bucharest (Rosca 2002), specifies the semantic area of the e-Learning concept, the multitude of valences of the term e-Learning, as being a generic term, an umbrella term that designates multiple educational situations in which is being used in a meaningful way the information and communication technology (eTeaching, eTesting, eTraining, eEducation, Web, Internet based assisted/mediated teaching- instructing-learning-training).

Particularities of e-learning technologies bring new dimensions in education and that may be complementary or alternative methods to Romanian traditional higher education system. These features offer the possibility of online education organization on topics or themes, while education is traditionally organized by group / age...
classes. Teaching-learning-examination acquires new dimensions and features by using e-learning technologies. The Romanian higher education system is directly involved in building the information society. An information society is born into an environment where the majority of its members have access to ICT technologies and information technologies are commonly used for both training and professional development and personal activities on solving economic and social problems. The solution is to better integrate design skills through well-chosen information systems with management skills in the production process. This is done by weaving a better organization with modern technology, i.e. technology to represent the support for a better organization.

High technology is not itself the key to Romanian higher education improvement. Bibliography All the previous studies show that the investment in organizational and human resources is at least as important as investment in advanced manufacturing technologies and using them to priority, companies can improve competitiveness without radical changes in the equipment production field.

Those who go further ahead at granting equal importance of people, organization and technology, managing their harmonious combination, in a balanced company, will be those who will exploit the potential of the new system more efficient and achieving maximum results.

In the new era of learning, the E-Learning has become an important strategy for the Romanian higher education system. I&CT have become indispensable to all the didactic activities, centered on the pupil, the student. The Internet and the Web have open new horizons for education, learning and long life distance learning, offering access to the most recent researches and to the knowledge global cyberspace.

At the same time, the Internet is both the environment for distributing the materials and the main communication channel between the involved actors in the educational processes. The electronic education (e-Learning) is represented by the interaction between the teaching/learning process and I&CT.

The educational digital materials have become a veritable bibliographical source for lesson presentations or for doing homework. Lately the faculty members are more and more trained in special preparation modules in the field of I&CT. More than a new type of education and distance training, an e-Learning system is at the same time a new business solution, a success option for the institutions and centers that offer these services.

The main objectives of e-Learning are the next:

- To support the isolated persons, to value their whole creative potential and to ensure the premises for a fulfilled life;
- To reduce the gaps between individuals or groups of individuals;
- To ensure the concordance between the companies requests for professionals and the offer of the labor;
- Wider access to education.

The main advantages of the e-Learning are the next:

- The capacity to provide a big volume of information;
- The possibility of real and complete individualization of the learning process;
- The making of some communication channels at big distances and the possibility to ask for support from experts from different corners of the world;
- Intercultural educational cooperation;
- I&CT have become indispensable to every learning&teaching activities, focused on student.

### 3 E-Learning technologies

Functionally, e-learning includes a wide variety of learning strategies and IT&C applications for exchanging information and gaining knowledge. ICT applications include: TV&radio; CDs and DVDs; audio teleconferencing; video conferencing; mobile technologies; web-based technologies; and e-learning platforms. There are five generations of Distance Education and Associated Delivery Technologies Models which could be represented in the next matrix-Table 1.

This matrix can be used in assessing process of implementation of Distance Education and Associated Delivery Technologies in different kind of national universities.
Table 1. Matrix of Distance Education and Associated Delivery Technologies Models
(The case of Transilvania University Brasov, Romania)

<table>
<thead>
<tr>
<th>Distance Education and Associated Delivery Technologies Models</th>
<th>Characteristics of Delivery Technologies</th>
<th>TOTAL LINK POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flexibility</td>
<td>Highly Refined Materials</td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>Places</td>
</tr>
<tr>
<td>FIRST GENERATION - The Correspondence Model Print</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SECOND GENERATION - The Multimedia Model Print</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Audio tape</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Videotape</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Computer based learning</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Interactive video (disk and tape)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>THIRD GENERATION - The Telelearning Model Audioteleconferencing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Videoconferencing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Audioraphic Communication</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Broadcast TV/Radio and Audioteleconferencing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>FOURTH GENERATION - The Flexible Learning Model Interactive multimedia (IMM) online</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Internet-based access to WWW resources</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Computer mediated communication</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FIFTH GENERATION - The Intelligent Flexible Learning Model Interactive multimedia (IMM) online</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Internet - based access to WWW resources</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Computer mediated communication, using automated response systems</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Campus portal access to institutional processes and resources</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TOTAL LINK POINTS</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

4 Knowledge Based Society
The growing importance of knowledge, research and innovation are changing the social role of Romanian higher education system in a globalized world. One of the most popular concepts used to approach these changes in post-industrial and post-modern societies is the concept of “Knowledge Society”. Never in human history has knowledge played a decisive role so with such intensity in the economy and society development as today. The unprecedented development of science and technology, in part due to IT&C technologies and data processing, required a rethinking of the institution of Romanian higher education structures. Our Romanian current opening is oriented to “knowledge mastery” which implies a paradigm change in higher education. In this respect, Romanian higher education system needs a long term proactive strategy in transforming educational process. In our Romanian higher education system we are focused on:
- current research which is producing knowledge;
- knowledge is transmitted through education and training;
- knowledge is disseminating worldwide through new Information and Communication Technologies;
- knowledge is applied in technological innovation.
We have to realize that "knowledge society" is a postindustrial form of social organization based on content management. Immediate future will lead to initial training to longlife learning and prepare our
Romanian universities to learn a greater degree than learning. That teaches you to learn. Promoting the four pillars of a knowledge society - education, research, development and innovation - does not only involve a priority support of these social activities; it involves, first of all, a new range of values. We cannot develop in Romania a knowledge economy and society without believing in values such as: learning involves the development and modernization of institutions and technologies, research put at the service of solving the complex problems that we are facing and we will face in the future.

Essentially the vision is of a Romanian Knowledge Society – a country in which citizens and enterprises are empowered through ICT in an inclusive, innovative, secure and sustainable knowledge society. Thus, there are three key aspects to the Romanian Knowledge Based Society (economic, societal and environmental, as is shown in figure 1).

**Economic** - a knowledge economy is the way forward for our Romanian economy to generate sustainable growth and employment through innovation and to enable social and environmental goals to be pursued. Investment in ICT in support of Knowledge Society goals would additionally provide a much-needed short-term economic boost. The economy is changing. It is in transition from an industrial economy to a knowledge economy. Thus ICT infrastructure underpins the knowledge economy (Figure 2) and calls for greater ICT literacy across the working population. It also needs other investments in education, training and reskilling to support the knowledge worker.

**Societal** – a knowledge society is an inclusive society in which everyone should be able to participate, including those less able, so that this entry becomes part of basic human rights. It is the power of individuals acting in concert that drives innovation.
Environmental – the Knowledge Society is a sustainable society so that growing use of ICT must support an efficient an effective economy. It has overtones in the economy, specifically with use of sustainability to drive new products, processes and industry sectors, highlighted by me as a “Green Revolution” for European Union.

4 Conclusion
The Romanian higher education system has a privileged report with the law, the truth, the good, the knowledge and also with the intellectual and moral progress of society.

The Romanian higher education system is producing new knowledge and here, passing through the analytical critics, the scientific theories are evaluated and changed. Ethics society changes over time and under the influence of the ideas issued in the universities, the social laws become less repressive, more stimulating and more training. On this dimension, the Romanian universities’ core values are freedom, rights, dignity, law respect, professionalism, renewal, creativity and reinterpretation. Romanian universities’ strategy is based on the concept of change through sustainable development, focusing on intellectual creativity, a trait that plays a key role in the transition towards a new model of society. The key elements of the knowledge economy and its value creation process are represented in Figure 3.

Looking persistently to European Union we better understand that we live in an ever changing world, in which the independence of spirit and overcoming paradigms lead to innovation and innovation is more important than the value of Romanian tradition.

References:


