

IMPLEMENTING E-LEARNING IN THE ROMANIAN EDUCATIONAL SYSTEM - A PRIORITY IN THE CONTEXT OF EU INTEGRATION

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ABSTRACT

This paper intends to examine the development of e-Learning in Romania and to evaluate the gap between Romania and other members of the European Union (EU). Considering that Romania is part of the EU since 2007, it is imperative to achieve, in the shortest possible time, a real convergence with other member states. This requires finding the most effective ways to accelerate the development and increase the competitiveness. Using extensive IT&C technologies represent such a way, and public services – education, too – are among the development priorities on the agendas of all policies, both nationally and European. Thus, the subject treated in the paper is not only present but also of strategic importance for the immediate future of Romania.

Keyword: e-learning, e-education, IT&C

1. INTRODUCTION

The new modern e-Concepts have been launched for political and economical reasons, or even because of the human inability to keep pace with the fast developments that characterize today's information society. Currently, almost every field tries to align to the new widely used technologies. It is ever more frequently spoken of concepts such as e-Commerce, e-Learning, e-Banking, e-Business, e-Government. e-Learning is maybe the most interesting of these Internet mediated concepts, referring to the integration of IT&C in the process of teaching and learning. These technologies cover a wide variety of resources and tools that facilitate the interactive on-line study. Frequently, this term is associated with the Internet mediated training.

e-Learning is considered in the European Union (EU) an important progress of education and training systems, in the perspective of reaching the strategic objective of the European Commission (EC), assumed at Lisbon in March 2000, to become "*the most competitive and dynamic knowledge-based economy in the world*" [10].

e-Learning is a combination of two big concepts: IT&C and education. It may have many advantages, but should not be seen as a solution to replace the existing pedagogical approaches. Many experts in this field believe that e-Learning will be fully accepted by the present society when it will become an integrated part of the educational process.

e-Learning (e-Education) represents those educational and training services which are supplied to end-users, partly or wholly through the Internet. e-Learning refers to the use of multimedia technologies and the Internet in order to improve the quality of learning by facilitating access to resources and services, and by making distance collaboration possible.

The main purpose of e-Learning is to enhance the quality of the educational act and not to substitute the traditional methods of teaching and learning. The ways of implementing e-Learning are multiple, complementary and independent, and include: ensuring access to educational resources through electronic

means, providing remote access to educational services (e.g. remote lessons, on-line examinations), facilitating collaboration and team work from a distance using forums, on-line discussion groups, e-mail and so on. The largest component of e-Learning takes place at a distance, but not entirely: the aim is to maximize the benefits offered by every means used in the process of training (distance or in classroom) and to minimize the existent inconveniences.

The development of multimedia technologies and increasing access to the Internet have allowed European citizens to gain access to incredibly many and varied information and information resources. Successfully using this potential in education is more a pedagogical and organizational problem and less a technological one. The introduction of IT&C should be accompanied by substantial restructuring in education.

New IT&C technologies allow every citizen to be (re)qualified or able to develop new skills at any age and any level of training, which will mean that the employment opportunities will increase and the competitiveness of European companies will enhance. In addition, this will promote the social inclusion, will increase the civic activity and will ensure the personal development.

IT&C-based learning can be both interactive and collaborative. It creates a richer and more motivating environment for learning. Learning systems can be customized to the needs, both in terms of content (what is taught) and the methods (how is taught). Education can be provided anytime (whenever you want), anywhere (wherever you want) and using any means of access (PC, TV, phone, etc.). New models of learning and teaching emerge, and the education and training systems must be redesigned.

2. GLOBAL ACTIONS CONCERNING E-LEARNING

At the United Nations Summit in 2000 – **the Millennium Summit** – the representatives of the participating states have adopted the “Millennium Declaration” [6], specifying that “*it is necessary that the benefits of the new technologies, especially the IT&C ... to be available for all*”.

The “target” for the G8 objective was that “*together with the private sector, to make available all the benefits of the new technologies, especially IT&C*” [6]. Related monitoring indicators are: “*the number of subscribers to mobile and telephone lines per 100 inhabitants*” and “*the number of PCs and Internet users per 100 inhabitants*”. UN has followed the MDG indicators and submitted annual reports.

Given the decisive role of the IT&C in achieving the “Millennium Objectives”, the UN General Assembly decided in its resolution 56/183 of 2001, to organize a world summit dedicated exclusively to the issue of the new Information Society (IS). Thus, Geneva (2003) and Tunis (2005) held the **World Summit on the Information Society** (WSIS) – suggestively called “*Building the Information Society: a global challenge in the new millennium*”. On this occasion, the participating states have expressed their “*willingness and determination to build an information society (IS), human-centered, inclusive and development-oriented, where each can create, access, use or disseminate information and knowledge, enabling individuals, communities and peoples to mobilize their full potential in promoting sustainable development and improving their quality of life*” (WSIS 2003, the Declaration of Principles, Art. 1 [2]). The Action Plan adopted on this occasion (called “Geneva Plan of Action”) contained 11 action lines, one of most interest being “**C7. Applications IT&C: benefits for all aspects of life**”. This course of action refers to the following sectors: e-Government (government), e-Business (business) e-Learning (education), e-Health (health), e-Agriculture (agriculture), e-Science (Science), e-Environment (environment), e-Employment (jobs).

Experience shows that, when properly implemented and used, e-Learning can provide learning opportunities for all students. Examining the promising perspective, as well as the shortcomings and uncertainties related to this new style of training, a study of NASBE (National Association of State

Boards of Education <http://www.nasbe.org/> in the U.S. says that e-Learning will significantly improve education and should be quickly implemented widely. Nevertheless, the same study tries to alert about the negative aspects of the present implementation.

In reality, governmental organizations do not properly manage, through legal regulations, this new style of education. Schools and high schools are assaulted by various initiatives, whose only purpose is to provide hardware, software and e-Learning services in order to achieve substantial profits. Various private interests lead to the adoption of questionable e-Learning initiatives, purchasing educational software of doubtful quality, and proving a poor management of allocated funds. The quality of software and educational resources available on-line is most often (90% of cases) quite low. Schools in disadvantaged areas are usually served by teachers with a poor training, and in addition it is unlikely to have access to alternative online courses.

Despite this critical note, the report concluded that interactive training is certainly more educational, when designed and implemented properly. Public opinion recognizes these advantages. In a survey NASBE concluded that 78% of adolescents and 87% of their parents believe that the Internet brings a plus to education in schools and high schools, helping the process of teaching and learning.

2.1. European actions concerning e-Learning

e-Learning implements in the field of education the eEurope Action Plan (Lisbon Strategy), designed for the transformation of Europe, into “the *most dynamic and competitive knowledge-based economy in the world*” [10] until 2020. Education as a public service is also a direction of the i2010 initiative, namely the action line “*Inclusion, public services and a better quality of life*” [4]. The main European political actions in the field of e-Learning were:

- EC e-Learning Initiative “*Designing tomorrow education*” [10], adopted in 2000 as a strategic direction in the field of e-Learning. The initiative is designed to adapt the European education systems to the knowledge-based economy and digital culture and includes 4 components:
 - equipping schools with multimedia computers;
 - training teachers to use digital technologies;
 - developing European educational services and software;
 - accelerating schools and teachers interconnection.

- The first **European e-Learning Summit** (Brussels, 2001 [11]) made 10 strategic recommendations in the field of e-Learning, namely:
 - “connect everyone and everything from everywhere” (schools connected to the Internet, schools with local networks, students and teachers home connected to the Internet)
 - adopt and participate in the development of open standards for e-Learning;
 - focus e-Learning research on pedagogy, not only on technology;
 - create a commercial market for electronic educational materials;
 - increase the investment in continuous professional development of educators;
 - develop flexible curricular to provide individuals with the skills needed for IT&C
 - expand e-Learning communities and forums;
 - provide funds to support e-Learning, including through sustainable public-private partnerships.

These strategic recommendations have been the basis for future strategic programs.

- The report “*Future objectives for education and training systems*” [12], adopted in 2001 by the Education Ministers of the member states, has established a number of objectives to be carried out by 2010. This report was followed by a 10 years Work Programme, adopted by the European Council in 2001, representing the European strategic framework for cooperation in education and training.

▪ The **e-Learning Action Plan** (2001-2004) and **e-Learning Programme** (2004-2006) established the priority areas that should channel the efforts in modernizing education and training systems in Europe. The 4 directions of the e-Learning Action Plan 2004-2006 [13] were:

- promoting digital literacy;
- creating new models of European universities (European virtual campuses) and schemes for access sharing and exchange (virtual mobility)
- e-partnerships between schools in Europe and encourage teachers training (European networks of schools, communities who learn through the Internet)
- actions for promoting e-Learning in Europe (disseminating results, successful experiments etc.) through European information portal “elearning europa” (<http://www.elearningeuropa.info/>)

▪ The European Area of Life Long Learning (LLL) – a concept developed by EC initiative 2001, called “*Making the European Area of Life Long Learning become a reality*” [14] – it concentrated the majority of efforts in the development of the education system. The document stipulated that member states should adapt education and training systems to the requirements of the current modern environment, removing barriers between different education systems of Europe and giving citizens a chance to develop new IT&C skills. “Life Long Learning” is one of the basic principles governing the European policies in education and training. It is essential not only for the competitiveness and the employment degree, but also for social inclusion, personal development and civic activism.

The European Commission was involved in defining strategic lines for e-Learning, organizing since 2004 yearly conferences (EU e-Learning Conferences), which discussed issues of maximum interest for e-Learning development. As an example, we show the main topics addressed at the 2006 and 2007 European “EU e-Learning” conferences.

Table 1. EU e-Learning Conferences 2006 and 2007

EU e-Learning Conference 2006 (Helsinki) “Learning through improved technology – a catalyst for change and innovation”	EU e-Learning Conference 2007 (Lisbon) “Acting accordingly with the Lisbon Agenda”
digital literacy for all research, forecasting and innovation for e-learning partnerships for lifelong learning (LLL)	digital and social cohesion shape the skills and competencies for the knowledge society value of e-Learning (cost, service, quality, economic efficiency)

Source: EU e-Learning Conferences 2006, 2007 websites

2.2. e-Learning development in Romania

Far from being good, the situation in Romania is not, however, so bad – the emphasis on infrastructure during 2001-2004 begins to pay off and constitute a solid foundation for the future actions of the Ministry of Education and Research (MEdC). This actions should relate to performance (at students level) and efficient use of computer training (at teachers level), considering that teachers’ acceptance of a new technology, computer use for teaching and learning, and development of educational software are still in an early stage, which must be sustained and promoted.

At the MEdC initiative, addressing a modern issue of Romanian education – the use of new technologies in education – a first research was held during 2004, in order to evaluate how some aspects of the education informatization programme correspond to the expectations and real needs of the students, teachers and school managers. The report called “*The impact of using AEL in education*” [8] was published in November 2004 by TEHNE – Center for Development and Innovation in Education.

In the 2004 impact study, the effects of introducing computers in high schools were followed at schools level (by interviewing school units directors), at teachers level (by discussing and questioning teachers) and at students level (by questioning students).

Being the first of this kind in Romania, the research wanted to find out the impact of using new technologies in teaching in high schools, referring to the IT-Based Educational System (SEI) programme of MEdC. The SEI programme is the point of reference for carrying out any research on the use of new technologies in Romanian high schools teaching.

The assumed mission of the study was to evaluate the way teachers, school managers and students understand the use of IT&C in education. As a result, the study successfully highlighted the current situation and pointed out a series of problems faced by teachers in using AEL. Insisting on the pedagogical aspects of the process, the recommendations were based on the realities of the Romanian school.

From the report conclusions we can quote: *“The listed issues attests, on one hand, that in using IT&C (AEL) we are in an initial phase, and on the other hand, that this process is evolving, correctly oriented, towards a complex educational approach, focused on learning and student involvement in building their own knowledge”* [8]. The discussions aroused by the report, shows the researchers and practitioners interest on issues connected to the pedagogical approach and teachers training. More than an impact study, the research also intended to explore the possibilities of using new technologies in the real context of educational institutions in Romania.

Although the findings of this study give a note of optimism about the future education system, it should be noted, however, that Romania has major shortcomings in the field of e-Learning: the reforms are kept in place, the strategies are almost non-existent, the attitude is inappropriate, the legislation governing distance courses in higher education is defective, outdated, and does not cover the needs of any academic environment. In addition, the funds for informatization of Romanian education are extremely low compared to the budgets of most European states, considering that 13.5% of high school students in urban areas have access to a computer only in school, according to study conducted by TEHNE.

A gap between EU Member States and Romania can be observed, since in 2006 only 2.3% of those who used the Internet in the last 3 months used it for educational activities, about 3.5 times less than EU-25 average (8.3%). A better case refers to the use of the Internet for participation in training courses related to job opportunities, where the value is 4.2%, almost 2 times lower than the EU-25 average of 8.2%.

Table 2. e-Learning in Europe 2006

% of the population have used the Internet for:	Institutionalized educational activities	Post graduate or university courses.	Other educational activities related to employment opportunities
EU-25	8,3	8,2	8,2
Romania	2,3	0,4	4,2

Source: EUROSTAT

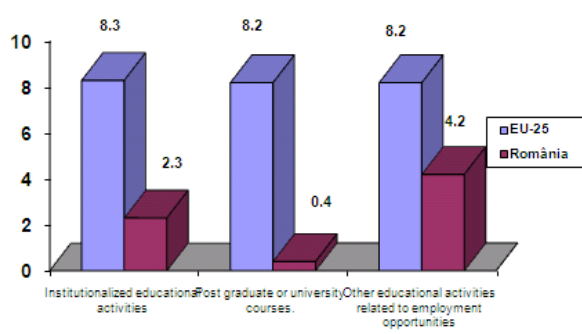


Figure 1. e-Learning in Europe and Romania 2006

The reasons are complex, such as the lack of adequate infrastructure and the reduced number of offers in the field of education. Ensuring the availability of educational services and resources on the Internet, and increasing Internet use and computers endowment in educational institutions, will certainly lead to a workforce that is better prepared, more flexible and more suited to market requirements, having positive effects on labor productivity and competitiveness. This kind of educational system will probably support the “lifelong learning” (LLL), this field being at a very low level in Romania.

3. E-LEARNING INITIATIVES IN ROMANIA

Concerning the informatization process of the education system, the technologically advanced countries constantly pursue the socio-economical competitiveness rules, providing impressive funds for the appropriate training of human resources, and taking decisions for the following decades based on rigorous studies. In recent years, the field of e-Learning has begun to develop in Romania, now existing more functional applications.

The most important project in this field, representing a point of reference for the practice of using IT&C in Romanian education, is IT-Based Educational System (SEI), implemented during 2001-2008. The system, which has an unique portal (<http://portal.edu.ro/index.php>), was developed and implemented through a public-private partnership (Ministry of Education and Research, SIVECO, IBM and HP). The system was implemented in four stages: 2001-2002, 2003, 2004 – for high schools and 2005-2007 – for secondary schools. The project’s achievements are: installation of IT laboratories in schools, integrated software solution for computer-assisted learning (AEL), multimedia educational content (lessons, dictionaries, encyclopedias, tutorials, educational content editors), teachers instruction and training, various projects for high school admission (ADLIC), baccalaureate, national exams test papers, teachers nomination, textbooks evaluation, software support (Euro 200 or money for high school), web hosting for schools.

The AEL component of SEI provides support for teaching and learning, evaluation and scoring, administration, planning and content monitoring. Basically, AEL is an e-Learning system consisting of a training management system and a content management system. The AEL and its lessons have received numerous international awards: the system has been nominated for the IST Prize 2005 (the European Oscar in IT), has earned the World Summit Award (I prize) on e-Learning at the World Summit on the Information Society, held in Tunis in 2005, and the Ministry of Education and Research has received the “Honorable Mention” at eEurope Awards for eGovernment 2005, for the implementation of AEL platform.

The final achievements of SEI will be: 4780 IT laboratories installed in schools, 76302 computers, 4780 computer networks, 600 high schools connected to the Internet, 1650 interactive multimedia lessons, 30,000 tests, 60,000 trained teachers, 16 dictionaries, 3 encyclopedias, and over 7 million people involved

(3 million by the end of 2007: 2.9 million students, 110,000 teachers). Also, SIVCO received in 2006 the prize “*Excellence in Project Management*” for the SEI project – national informatization programme for the pre-university education system in Romania. The e-Learning solutions developed by this program for the Romanian pre-university education system, and awards obtained by them in international competitions represent a certification of the international recognition of this program: “*SEI is seen as one of the most advanced projects at European level in using IT technology in education*”.

Another project in the Romanian education that has been internationally recognized is “BDNE – National Education Database” (<http://harta.bdne.edu.ro/harta/>), which contains a full picture of the education system in Romania. This project has received the label of “Good Practice” from the EC and entered the competition “eGovernment Awards 2007”.

Another proof of governmental interest for computer assisted training is the *Knowledge-Based Economy* project, developed during 2006-2011 by the Ministry of Communications and Information Technology (MCTI), having the support of the World Bank, with a total budget of 70 million USD [7]. Among the objectives of this project is the increase of the education quality in secondary schools, through the integration and expansion of IT&C in the teaching process and through human resources training in these technologies. By equipping schools with computer equipment for teaching process (computers, educational software, multimedia equipment), and by connecting these schools to the Internet, the program will help develop the education environment and learning conditions. The introduction of IT&C in schools will also lead to growing attractiveness of the learning process and diversification of teaching methods and practices. The overall objective of the project is to facilitate the participation of disadvantaged communities (in terms of access to information) to the knowledge society, in agreement with the European Union strategy.

The one certainty is that the informatization process depends on many variables in the institutional school environment – conservative, on one hand, and with a complex organizational culture, on the other. Different high schools have different experiences regarding computers endowment and educational software, depending primarily on the school managers’ attitude, openness and interest in this process. Mathematics, biology, physics, chemistry lessons carried out in AEL laboratories have become a common practice in Romanian high schools. This must be regarded as part of a natural dynamic of the education system, future-oriented.

5. CONCLUSION

e-Learning tends to become a regular presence in education and training systems, and Europe is making progress in this area. IT&C infrastructure and Internet connectivity continue to grow in education and training sector, as affirmed in the eEurope 2005 intermediary report, while highlighting the factors that allow its successful implementation (teachers training, quality content, adoption of pedagogical practices, etc.). Connectivity and equipment no longer represent the central issue, with emphasis being now on pedagogy, content, quality and standards, continuous development, organizational change, transformation of education and training processes. There have been many progresses, although many affirm that the hard work is barely starting.

Several years after the adoption of the Lisbon strategy, the progress is obvious: better quality courses, better computers, wide Internet connectivity. Computer assisted training has passed the transition phase, and now is beginning to find its place in education, training and lifelong learning. Although present in all EU countries, its implementation varies not only quantitatively and qualitatively, but also in terms of accessibility.

Since the adoption of e-Learning Initiative in May 2000 and Action Plan in March 2001, interest in the use of technology in education continued to grow. The objective of improving the quality of training and access to education, is a foundation stone for building the new knowledge-based society in Europe. Indeed, e-Learning is viewed as a catalyst for the fundamental changes necessary for the transition to the new economy, and at the same time as a tool for achieving the European objectives for social inclusion, differences eradication, and intercultural dialogue.

In Romania, even if the indicators of e-Learning development are not at the level of other EU countries, we can say that the situation has improved and electronic training begins to be used increasingly often. However, given that one of the objectives of the European Union is to create an information society for all by 2010, Romania, as a Member of the EU, must align to this requirement. The first steps were taken through implementing e-Learning projects and defining the barriers that stand in the way of an information society for everyone.

In the educational system, conservative institution by definition, changes occur gradually, and takes a long time until the innovations (especially quite radical, such as those generated by the introduction of IT&C) are assimilated.

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