

## Concepts and Trends on E -Learning in Romania

Marcela Monica Stoica<sup>1</sup>, Sorin Burlacu<sup>2</sup>

<sup>1</sup>Christian University, "Dimitrie Cantemir", Faculty of Political Sciences, Bucharest, Romania

<sup>2</sup>The University of Economic Sciences, Faculty of Administrative Sciences, Bucharest, Romania

### ABSTRACT

*E-Learning systems analysis appears to be simple if we take into consideration some of the approaches employed by researchers so far. But the dynamics of e-Learning requires caution. For more than seven years there have been discussions about a new generation of e-Learning, namely e-Learning 2.0. The e-Learning market is estimated to bring revenue of U.S. \$ 56.2 billion in 2013 according to Certifyme.net, the industry leader in online training, and this amount is projected to double its value by the end of 2015.*

*In Romania, a team of researchers from the Centre for Development and Innovation in Education – has been using techniques aimed at identifying and classifying theoretical and practical approaches to training and education.*

*If we consider the mission of this non-governmental organization (with no political affiliation) to promote the principles and values in education through innovative technologies and approaches (such as conducting programs and e-Learning projects, developing curricula, education for democratic citizenship, lifelong learning and continuous training of teachers) then we can rely on the experience of the organization and the seriousness with which the foundation is involved in defining and e-Learning phenomenon.*

**Keywords:** Distance education, didactic benefit, interactive information and communication.

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### I. INTRODUCTION

The e-Learning phenomenon fits theoretically between two opposing theories. In the early '80s, Jonathan Perraton, lecturer at Sheffield University, detailed the current phase of globalization and how modern societies refer to politics, economy, culture and communication when discussing migration, environment, legislation and the military forces. He said that "distance education (defined today largely as e-Learning) is doing very well without any theory."

Since the late twentieth century until today, more and more voices have argued that the assumptions on future electronic training systems and hence distance education can only be confirmed or refuted by the results of scientific research (KUHN, 2008). Thomas Khun launched the idea that scientific theories are actually immersed in contexts that determine their interpretations.

If we consider the mission of this non-governmental organization (with no political affiliation) to promote the principles and values in education through innovative technologies and approaches (such as conducting programs and e-Learning projects, developing curricula, education for democratic citizenship, lifelong learning and continuous training of teachers) then we can rely on the experience of the organization and the seriousness with which the foundation is involved in defining and e-Learning phenomenon.

Their mission is supported by its partners:

- European Network for Educational Cooperation in South East Europe - SEE ECN (South East Europe Education Cooperation Network), initiated by the Centre for Education Policy Studies, University of Ljubljana, Slovenia and Austria Kultur Kontakt within the Stability Pact for Europe South East.
- EULLearN (European University Lifelong Learning Network), a network through which Socrates Erasmus aims to promote coherent strategies and practical measures to boost Lifelong Learning in universities, the main purpose being the consistent and effective use of tools and specific resources.
- European Foundation for Quality in e-Learning, an initiative of the European Commission, which aims at increasing the quality of e-Learning in Europe.

### II. CONCEPTS AND TRENDS

To outline the limits of the e-learning concept, beyond the views expressed by specialized organizations, we have reviewed over 100 articles and books in the literature that discuss the phenomenon.

A simplified definition of the concept of e-Learning is given in Romanian literature by a researcher at the Institute of Education Sciences: "*The e-Learning (training distance or virtual education) consists of a planned*

*teaching-learning experience organized by an institution providing material in a sequential and logical order to be acquired by students in their own way, without forcing agents through co-presence or synchronicity*” (ISTRATE, 2000). Mediation can be achieved through various media, from the floppy or CD material (possibly by mail) to technologies for transmitting Internet content.

If we go beyond this definition then, broadly, e-Learning can stand for all educational situations in the use of ICT (Information and Communication Technologies) resources is significant. The term e-Learning, mentioned in 2004 by an American professor Brut in his book *Tools for E-learning*, a modern teacher's information guide (BRUT, 2006) (MANOLE, ALPOPI, & COLESCA, 2011). He expanded the meaning of e-Learning from the primary etymology, which meant learning by electronic means, to cover the area of intersection between modern information media and educational activities.

From our point of view, today the e-Learning concept is defined as e-Education. The semantic particularities of e-Learning overlap and they stand for a multitude of terms that capture the variety of learning experiences that can benefit from technological support assisted instruction/ mediated by computer, digital/ mobile/ online learning, etc. Under the heading of teaching and learning software, a wide range of electronic materials (on CD) is developed to support the education process: maps, dictionaries, encyclopedias, educational films, presentations in various formats, books (e-books), tutorials, simulations, software forming skills, practice software, educational games, etc. Computer and electronic materials/ media are used to support teaching, learning, assessment or as a means of communication (for making individual tasks, etc.).

If we had to choose a definition suitable for the general public, accepting a more restricted horizon, we would choose the definition of Professor Gross. He says that “*e-Learning is a type of distance education as a planned teaching-learning experience organized by an institution providing material in a sequential and logical order to be acquired by students in their own way, without forcing agents through co-presence or synchronicity*. Mediation is done by new information and communication technologies, especially the Internet. (ANDRONICEANU et al, 2008) The Internet means both the distribution of material and the channel of communication between stakeholders. Functional only in higher education and adult education, internet training system components respond and adapt the traditional teaching approach: planning, specific content and methodology, interaction, support and evaluation.

Brown, a British specialist, says that “*the task of education and training based on new information and communication technologies is not to compete with other educational systems and to demonstrate that it has no immediate results, but to substitute part of the current structures to meet the inherent changes that occur in culture and civilization*” (Brown, 1996).

From the content of these reviews we noted that: e-Learning approaches effectively combine face to face and distance education, fundamentally changing the role of the educator, particularly of those involved in online training situations. Therefore, we believe that e-Learning is the result of evolution, not of a revolution in the field of education. There have been numerous attempts in literature to come up with an innovative terminology to describe this type of learning.

Such an innovation is mixed or blended learning. The term "mixed-mode" approach describes the combination of face to face and distance teaching without necessarily requiring the highest technology. Other experts prefer the term "Resource-based Learning" or a term used especially in vocational training, namely the "Blended Learning". Regardless of the typology used, the most important are the training strategies used for this purpose.

Electronic communication training techniques are a relatively new approach to learning. The basics notions remain the same, only the means of transmitting and acquiring knowledge changes. Using information and communication systems for education means attaching to the learning process the element of freedom: students can learn when and where they wish.

The launch of electronic communication training techniques was done via the Internet. The disadvantage of the previous distance education method was that learner-instructor interaction could only be asynchronous, not synchronous. The latest achievements in the field of software for distance learning processes by means of information and communication technology allow for real-time communication, both text and audio-video, thus creating true virtual classrooms (in Romanian “teleclase”).

The e-Learning solutions presented are the result of technology developments that support this functionality. Thus, with the advent of huge storage capacity, distance traditional education methods (which had been using printed material sent by mail) were improved by the use of e-Books. Later on, interactive information and communication technologies have become central elements for new deployment training with electronic media (POPESCU, 2009).

Table 1 from below presents some of the minimum standard elements required, as they were drawn from the literature, which must be taken into account when designing an e-Learning System.

**TABLE 1.** Factors considered in designing e-learning systems

Elements	Remarks / Examples
TARGET GROUP	students, teachers, people seeking employment, employees;
LEARNING CONTENT	information, skills, abilities, attitudes and knowledge in various fields of expertise.
TEACHING STRATEGIES	co-operative learning strategies, inductive learning, discovery learning, project-based learning, etc.
IT&C TOOLS	e-mail, website, video conferencing, chat, educational software;
RESOURCES	budget, time, personnel assigned;
OBJECTIVES OF THE PROGRAMME	training, specialization, communication of new knowledge, deepening knowledge, skills and competence creation in different areas, etc.

As a synthesis of the presented approaches, our position is similar to that of the researchers who consider the e-Learning industry as relatively new and unexplored, which involves covering a broad set of applications and processes based on learning on a computer. E-Learning means the electronic distribution of information content (media, Internet, Intranet) and is more accurately defined as:

- the convergence of learning and the Internet;
- the use of information and communications technology to build, deliver, select manage and extend learning;
- learning via the Internet which may include information in multiple formats and a network of communication between those involved;
- the fastest way of learning, with the lowest cost, allowing for increased access to education for all participants.

### III. SWOT ANALYSIS OF THE CURRENT STATE OF ORGANISATIONS USING ELEARNING SYSTEMS IN ROMANIA

Hypothesis from leaving SWOT analysis is that the problems facing the system are determinations of internal characteristics, positive or negative thereof. Naturally, weak functioning of the system are influenced by the external environment that can accelerate or preserve the destructive effects of problems. Their knowledge is essential to develop a plan for improvement. It may set such targets and objectives and develop ways of action to achieve them. Through internal and external factors of a system that must be considered in the SWOT analysis understand the factors that can be controlled and those who are not within the control system and action.

On the website of the Ministry of Communications and Information Society are some conclusions on the state of the Information Society in Romania (based on SWOT analysis) in collaboration with the United Nations Conference on Trade and Development UNCTAD (2002) - United Nations Commission for Trade and Development. Based on this analysis following are some strengths and weaknesses and the opportunities and threats identified in the documentation and analysis organizations that organize training using electronic communication of the political, economic, social, technological and educational operating .

#### Strengths

1. There is a national strategy to promote the New Economy, and implementation of Information Society and computerization in public administration.
2. Implement the Information Society is a Government priority.
3. At the country level takes place a general process of modernization of the payment system, the information system and access to the Internet.
4. Ensuring that the EU requirements regarding the management, reporting and control of EU funding for information and communication technologies is the precise requirements of equipment, application development, security and confidentiality measures data quality procedures.
5. More and more users trust the IT tools that they have at hand and use them routinely, not being able to perform some functions currently without using tools. Also opening pathways to customer information and electronic support changing the face of the organization and is intended to improve the relationship with it.
6. The current policy conducive to the development of the ICT domain and Information Society: creating the institutional framework (establishment of the Ministry of Communications and Information Society, setting up the Committee for Advanced Technologies, Communications and Information Technology at the Romanian Parliament, setting up Group for the Promotion of Information Technology), the regulatory framework (adoption of a series of industry-specific laws and requirements of the *acquis communautaire*), the active presence of ICT to enhance international cooperation, establish facilities for ICT development.
7. Resources and human potential of highly qualified internationally recognized (general knowledge, creativity and language).
8. Strengthening and increasing IT community personality manifested by increasing the involvement of IT companies, experts and professional associations in the transition to SI.

9. The growth rates in the last 2-3 years comparable or superior to those developed for the acquisition of PC and the number of mobile users. The average rate of development of the ICT sector in Romania is 15% compared to the global rate of 8%.
10. Productivity at the firm level comparable to those of developed countries.
11. The possibility of extending access to the Internet thanks to the large share of cable TV subscribers (71%) and mobile phones.
12. Market consolidation of telecom operators and developing a national fiber optic infrastructure.
13. The support provided by the authorities in ICT investment.
14. Advanced Technology in the field of information and communication technologies taken from industrialized countries.
15. Low cost of labor mobility and high flexibility of its reasoned entrepreneurial skills training, with knowledge of English, French and German, Romanian talents being spread in various multinational companies.
16. Well-developed educational system, annually producing over 5,000 IT graduates and 2,000 in related disciplines;
17. Industry naturally developed around centers of excellence in Bucharest, Cluj, Iasi and Timisoara;
18. Intrinsic cultural and linguistic ability to provide IT services intermediate techniques such as Call Centers.

### **Weaknesses**

1. The low level of access to major communications and Internet due to pricing policy and lower levels of investment in access infrastructure.
2. The low level of the GDP / capita, which does not achieve high levels of facilities (hardware, software, means of communication) to provide specific services and applications SI.
3. Insufficiently stimulative business environment, using new information and communication technologies, and to open e-business by becoming devoid of credibility.
4. Poor implementing the legislation on copyright compliance in IT, with consequences still high software piracy.
5. The average wage of specialists in ICT is relatively small compared to developed countries.
6. Number of PC and Internet penetration in schools and high schools still remain lower than the average of other European Union countries.
7. The high cost of telecommunications and communication infrastructure.
8. Lack of credible investment falling away foreign investors.
9. Lack of basic elements for the development of IT such as freedom of information and data protection.
10. The lack of credibility of TI.
11. Lack of integration of information systems.
12. Lack of financial resources for IT firms to start and develop projects.
13. Insufficient resources for marketing and branding.
14. The lack of a workforce with the skills to manage projects software.
15. Lack of understanding of the concept of quality software certification and development methods.
16. The lack of internal IT projects to develop credit and experiences.
17. Lack of facilities for training in IT, management and quality.
18. The lack of an integrated information system covering all functions necessary and modern means of payment include payment obligations by the state makes it difficult to obtain the necessary information management activities of the organization.
19. There is an information security policy but procedures to ensure confidentiality of electronic data.
20. There is a national policy of insurance business (including disaster recovery) and lack of appropriate equipment generates a lack of data security in case of disaster.
21. The age of fleet equipment can become a major environmental risk where not provided the necessary funds to replace equipment worn.
22. The relatively small number of specialists in the IT market to the design of new IT applications as well as for the administration of existing computer systems.
23. The unequal development of informatics in other organizations make difficult electronic information exchange with them.

### **Opportunities**

1. Enhancing collaboration with various international bodies that grant their support both for the training of employees of an organization and for developing and implementing new tools, systems, procedures, including informatics.

2. Modernizing and improving the legislative framework, which directly or indirectly the work and the degree of harmonization of its legislation with other EU states and the computer system requires an adaptation to these new requirements.
3. Diversification IT and communications market in Romania, covering more and more services across the country with competitive prices, allowing building an IT strategy more realistic.
4. Existence of human potential, cultural and political decision to exploit the opportunities offered by the transition to SI - knowledge - and the new economy.
5. The ability to ensure sustainable economic growth based on new technologies by making products and services with high added value.
6. Ability to attract external funds from international (primarily EU) for projects to ensure the modernization of public administration, citizens' access to public information, business development and improved quality of life.
7. Ability to employment in the pace of development and requested EU integration, with policies and action plans (eEurope, eEurope +, eEurope2025).
8. The accelerated growth in the demand for ICT products and services, worldwide.
9. Romanian market for e-Business, e-government and information society development.
10. Western European IT market growing fast with cultural similarities.
11. The emergence of e-Commerce requiring IT professionals.
12. Spread TI generating productivity growth in other sectors.

#### **Threats**

1. The stability of the macroeconomic framework and poor predictability of its failure which lead to relatively frequent changes to the financial and fiscal regulations with undesirable implications on the system.
2. Interest still relatively low Romania's banking system to lend to the real economy, to assimilate modern payment instruments, including electronic payment etc.
3. The labor market in the field, in developed countries, leading to migration of young professionals to developed countries.
4. The low number of policies to attract partners and strategic investors (capital, technology, market), allowing the development of skills in the country in the development of systems, software products and the development of complex information infrastructure based on technologies advanced.
5. Technological gap with the developed countries in research, innovation.
6. Lack of market information.
7. The lack of an internal market to enable the industry to develop expertise.
8. Lack of communication between government and industry.
9. Lack of support for promoting the industry.
10. The lack of a coherent image of the industry.

#### **IV. CONCLUSIONS AND DISCUSSION**

Education is seen as one of the most important factors for poverty alleviation and economic growth in developing countries and the use of Information and Communication Technologies for dissemination of education is believed to have huge potential for governments struggling to meet a growing demand for education while facing an escalating shortage of teachers.

Today, the development of the Internet into a worldwide, high-speed, multimedia communication platform has enabled the development of e-learning as an effective teaching and learning mechanism. E-learning, with its various communication tools, plays a significant role in creating and promoting learning communities and their development. E-learning has made leaps and bounds in the education system. Nowadays European Union has pushed forward a policy to support R&D in the use of ICT in education, including IT connectivity and digital learning and teaching.

The strategic plan aims at using technology to enhance the quality of education and training, at increasing the effectiveness of education and training delivery systems, and at increasing the efficiency of education and training management. E-learning is not a luxury but a necessity for current and future generations.

Distance learning via the Internet combined with multi-media platforms can satisfy the demand for alternative forms of education. Entering the 21st century, with the Internet and World Wide Web leading the way, distance learning is already affecting the lives of millions of children, teens and adults through interventions in their patterns of learning. Learning objects and games can build skills that engage learners in the content. Learners are more connected than ever before and the fact that the users are connected to the content offers opportunities for anyone to learn anywhere anytime.



E-Learning as a structured process requires certain quality standards and procedures for offering an efficient and easy to use platform. To fulfill this conditions the development of professional e-Learning platform solution should be designed so as to meet the next user requirements:

- Efficient procedures and templates for publishing of multilingual content
- Integration of media objects into contents
- Features for image processing
- Flexibly configurable meta-data model for contents
- Drop-down formatting options for authors
- Import and export functions for XML structured contents
- Procedure for administration and release of content (work-flow engine)
- Search functions for authors and users
- Support of the publication procedure through tailored interfaces
- Cross media publishing (export to multiple formats)
- Version management for publications
- Integrated link management and link consistency check
- Functions for content distribution

Educational researchers from Brown University (2000) set out to define “personalized learning” based on events occurring in a regular school day, assembling into categories that might explain how schools can organize themselves to personalize learning for all students. This research demonstrated how learner’s personal needs can be met as flexible options for engaged learning. They determined that when you take into account how learners learn best based on their needs, talents, and aspirations and there is a learning environment that trusts and respects each learner, the learner self-directs their learning to find their purpose and goals for learning. To encourage the use of e-learning platforms, both by teachers and by the learners, it is important that e-learning platforms and the digital content to be easily created and accessed.

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