E-LEARNING – A PARADIGM OF COMPUTER-ASSISTED TRAINING

Carmen-Liliana Maruntelu
Assoc. Prof., PhD., „Ovidius" University of Constanța

Abstract: The exponential evolution in computer matters over the past decade has led to the emergence and development of numerous IT tools useful to the didactic process and implicitly, the development of several e-learning platforms, which have become increasingly familiar to teachers and students. Generically, learning through e-learning can be defined as a distance learning in an evolutionary and collaborative educational environment that combines traditional teaching methods with methods based on IT means and aims to increase the individual performances of students. Learning through e-learning is based on modern teaching, in a different manner than the classical one, much more attractive, and in which the enhancing of knowledge and evaluation play an important role, carried out in an attractive and adaptable manner to the needs of both those who conduct the learning and especially students.

Keywords: computer, e-learning, methods, multimedia, systems

Introduction

The consolidation, for over 300 years, of a general education system, based on the manual designed by Comenius and the rapid development of electronic computing systems over the last 30 years, have generated new dissensions on the terminology used in a field, a transdisciplinary one by excellence, namely didactics [1]. The first public schools (1780) adopted the model of the teacher as manager, in which he was the main leader of the instructional process and of the means used in the class.

After 1951, the first educational technologies are promoted in schools, but from this period a significant increase in the number of educated students in a class is registered. After 1981, the first drill and practice applications were made. Starting with 1984, commercial application manufacturers have developed learning mediation programs (tutorials) and learning games programs.

They have a very wide spread through the forms of promotion: demo, shareware, freeware. After 1990, multimedia systems and pedagogical design software tools were developed. Applications are made on compact discs (CD-ROMs). Learningware and Authorware systems mark the main directions of the computer-assisted educational environment.(2) E-learning, a term introduced in 1998 by Jay Cross, the founder of Internet Time Group, has become extremely popular. A search with Google at the beginning of August 2010 provides approximately 197,000,000 references for e-learning, representing three times more than the same period of 2006. Electronic education or e-learning is a current way of developing education, in accordance with technological discoveries.

A concise definition of the term e-education can be: "offering education, training or teaching by electronic means". [3] The term is used today as a unifying term for a multitude of learning techniques, computer-aided training. Electronic education refers to the use of Internet technologies to provide a wide range of solutions that enhance performance and knowledge. In general, the term e-learning is synonymous with online learning, Web based learning. Here are some definitions of the term e-learning: • Any virtual act or process used to obtain data, information, skills or knowledge. E-learning thus means learning in a virtual world, where technology cooperates with human creativity in order to accelerate and

facilitate the deep knowledge of the studied field.[4] • Offering learning opportunities, training or educational programs using electronic means.[5] • It covers a wide category of applications and processes, such as: computer-assisted training, Internet / Intranet learning (Web based learning), computer based learning, virtual classes, online collaboration. Electronic content is provided through the Internet, Intranet, audio and video cassettes, satellite, CD-ROM or interactive television.[6]. • Ability to improve education through the use of computing devices (e.g. PCs, CDs, DVDs, TVs, PDAs, mobile phones) and communication technology (through the use of the Internet, email, discussion boards or of collaborative software like wiki or blog). [5] Broadly speaking, e-learning means all the educational situations in which the means of information and communication technology are significantly used. The term, taken from the Anglo-Saxon literature, has been extended from the primary, etymological, way of learning by electronic means, now covering the area of intersection of educational actions with modern computer media.

General aspects of E-Learning

In the modern sense, the resource-based education process uses both classical models with known media (physical models) and virtual models belonging to multimedia technology. e-learning is a component of the technology-based model. A characterization of the electronic education can be realized on the basis of the following ideas [7]: • the learning process is oriented towards the trainee and is carried out in a virtual location; • educational resources are accessible on the Web and distributed (through the use, the integration and the access to electronic libraries and multimedia materials, by drawing specialists in topic discussions); • the students benefit from the guidance of a tutor (instructor, moderator) who plans the activity of the group of participants, submits to their debates aspects of the course in asynchronous conferences (discussion forums, blogs) or synchronous one (chat, virtual class), provides resources auxiliaries, comments on topics, imposes directions; • through interaction and collaboration, the group of participants forms, during the course, often and afterwards, a virtual community; they can be characterized by the so-called "fluidity of roles", by the continuous balance of the trainer-trainee role in the learning group ("symmetric knowledge advancement" - Scardamalia, 1995), by the continuous restructuring of the learning teams according to interests or objectives; • the course material has a static component, the one prepared by the tutor together with a specialized team, and a dynamic one, resulting from the interaction of the participants, from the suggestions, comments, resources brought by them; • most e-learning environments allow the monitoring of the activity of the participants, and others simulations, group work, audio, video interaction. We mention that the term e-learning has now replaced almost all the terms that designated a new way of integrating ICT resources into the training process. The e-learning achievements can be classified from several points of view [8]. We will select two of them: • CD-based e-learning achievements: students receive the courses on CD, they will install these courses on their own computer and they can start the preparation, learning. • Network-based e-learning: courses can be accessed through the network (intranet / internet) on the central server. In both cases, the courses are in electronic format, the difference is only in the follow-up of the study. If in the first case, it is very difficult to the specialist who coordinates the courses to obtain information about how the learner goes through the material, has or not questions, manages to assimilate the required subject, in the second case this information can be accessed from the server that provides course services. The achievements of e-learning include the following elements that are grouped around the student eager to obtain the necessary knowledge: • Infrastructure - the set of hard and soft elements that allow access to the information that the student wants to acquire. • Content - the knowledge in electronic form that covers the subject of the course (in the form of text, audio, video, simulations). • Services - the realization of the educational plans, the relation with the traditional education, the record of the knowledge acquired by the

students, the management of the capacity of the students, requirements that any realization of e-learning will have to manage them properly.

The main participants in the process are: the system administrator, students and the instructor. Through the diversity of forms and the complexity of the context, the web environment promotes collaborative action, both at the level of the educational act, by the interaction of the student with the instructor or with other instructors, as well as at the level of the process of elaborating his own training technologies, by involving specialized groups in the elaboration of the applications, of the content and of the permanent maintenance and development of the e-learning solution. The progress registered in the learning activity determines a more pronounced degree of collaboration of the instructor. Similarly, in an e-learning technology, the level of interaction and collaboration increases if they actually determine progress in acquiring and applying the skills.

Advantages and Disadvantages of e-Learning

The advantages of this type of learning are the following: accessibility, flexibility, comforts, the user being able to decide alone the date and time at which he / she is involved in the training activity. Compared to the traditional education system, e-learning has many advantages [8], [1], [2]: • geographical independence, mobility - the possibility to access the content of the educational material from anywhere and anytime, using the personal computer and network; • online accessibility - an important characteristic specific to this type of education, which means access to education through the Internet in real time, anywhere and anytime, 24 hours a day, 7 days a week; there is no time dependence; • concise and selective presentation of educational content; • individualization of the learning process - each instructor has their own rhythm and style of assimilation and is based on a certain type of memory in the learning process (auditory or visual), the course can be done gradually and repeatedly, controlling their progress quickly, benefiting from fast and permanent feedback; some subjects perform better on weekends, others in the early morning hours; • diverse pedagogical methods - e-learning programs must be based on different pedagogical methods, which guide subjects throughout the learning process: through the teaching materials, on the project completion, online evaluation and up to the certification of the program, if applicable ; a series of experiments studying the effect that the use of different media has on the acquisition of knowledge has led to the conclusion that, in general, a diversified educational material is retained in a proportion of 80% through listening, watching and interactivity; • online administration - the use of e-learning systems requires the security of the users, their registration, the monitoring of the students and the services offered in the network; • Low distribution costs - educational software or electronic learning solutions are not cheap. However, their costs are lower than those involved in a "classic" learning session, because travel expenses, renting of the course spaces, accommodation and table subjects are eliminated; • reduced study time - in some cases, depending on the technique solution adopted, and time may be switched to cost reduction: the subject will not interrupt his professional activity to take a course, but will "lose" only a few hours daily to learn online or offline on computer;• synchronous and asynchronous interactions - the two types of interactions between instructors and trainees can be completed; • diverse dynamic technologies - these allow for a real-time feedback, and formative and summative, qualitative and quantitative evaluations, carried out in an easy way by the most qualified evaluators; • if the traditional education is organized by age group, the online education is organized on topics; In a virtual classroom, subjects of all ages, with different preparations, can be reunited, neglecting the spatial boundaries.

The disadvantages of e-learning are [5], [6]: • high dropout rate - this type of distance education requires consistent and sustained efforts by all participants in the instructional process. Students have to be extremely motivated; otherwise the phenomenon of school dropout is installed, which is much more frequent in distance education than in traditional education. According to the studies done by Rovai [9], there are several factors that can influence school dropout and can be exploited to limit this tendency: - presence - the tutor and the student must be present even in a virtual community; - equality - it must be manifested in that the tutor will moderate the activity so that all participants have the opportunity to intervene in a particular topic of discussion; - small working groups - to allow a better division of tasks and activities; - the teaching style and the degree of knowledge acquisition are an important factor. This means the use of online course formats specific to this type of education and which are adapted to the knowledge of the subjects. • requires experience in the field of computer use - students are required to have certain knowledge in the IT field. In most cases, installing an e-learning system involves installing additional applications or environments that require additional technical knowledge. To minimize this disadvantage, the client can use a web browser. There are cases where this approach is not possible. In this case, it is necessary to modularize the application, make an installation kit and a user's guide. If the system has a multitude of functions that are not modularized, the user has restraint in their use and, consequently, the efficiency of the system itself is diminished. • high costs for design and maintenance - these also include technology costs, network information transmission, equipment maintenance, production of the necessary materials. Compared, however, with all the costs involved in the classical educational process, they are significantly lower.

With all these disadvantages or limitations, the experience of already functional e-learning platforms has shown that the participants in education through the new e-learning technologies become familiar with the virtual environment shortly and enter relatively quickly into the natural rhythm of transmission and learning, respectively of knowledge through this modern and efficient type of education.

BIBLIOGRAPHY

1. Ioniţă, A., *Organizational Learning – a Sustainable Competitive Advantage*, Proceedings of the International Symposium OL-KWM 2005.
2. Ioniţă, A., *Trends in Professional Learning in the Framework of Knowledge Society*, Proceedings of the 1st International Conference on Virtual Learning, ICVL 2006.
3. Roşca, I.G., Apostol, C.,Zamfir, G., *E-learning – paradigma a instruirii asistate*, Revista Informatica Economica, nr. 2 (22)/2002.
4. http://depmath.ulbsibiu.ro/chair2/craciunas/model%20standard%20platforma%20eLearning. Pdf
5. http://www.mountainquestinstitute.com/definitions.htm
6. www.intelera.com/glossary.htm
7. http://www.cybermediacreations.com/elearning/glossary.html
8. http://www.irrodl.org/index.php/irrodl/article/view/192/274