E-LEARNING: THE FIRST PHASE FOR DEVELOPMENT OF DISTANCE EDUCATION IN "1 DECEMBRIE 1918" UNIVERSITY OF ALBA IULIA

by

Constantin Huțanu, Ioan Ileană, Moise Achim

Abstract. The predictions regarding the development of DE have been confirmed in recent years, mainly by the continuous growth in online learning. The development in the sphere of information technology (IT) has marked a spectacular progress over the last decade. Romanian universities are still far from using IT achievements on a broad scale, due to expensive software licences. The commissioning of expensive equipment needed for the implementation of modern educational technologies is relatively slow and there is a lack of experience and tradition concerning DE.

The "1 Decembrie 1918" University has to provide its personnel with adequate experience in the implementation of e-Learning platforms and online courses. Last year, this university bought an excellent e-Learning platform in order to improve the distance learning activity. We are currently testing this platform and the partial results are good. The procurement list includes computers, multimedia and demo equipment. The successful completion of the e-Learning is expected to create the first online courses and evaluation tests in the Mathematics and Computers DE Department in our university. The effects may be multiplied by applying the acquired experience to other departments in the university.

Introduction

To become an equivalent county of Romanian high-education and eliminate unevenness comparing to other European Union countries, one of the most important task for "1 Decembrie 1918" University is to create a knowledge society, which could give an opportunity to all adults society members to study all life long. The main lifelong learning tool is DE system using e-Learning platforms. It means that we must create a DE system supported by information communication technologies (ICT) and accessible for all virtual students of Transylvania county.

To achieve this goal it is worth to accumulate various technical and technological resources, education potential of the "1 Decembrie 1918" University, the most important academic institution in Alba Iulia. During the development phase of the DE system the ICT appliance in DE classes will increase the quality and range of education services and territorial difference will disappear.

216

The academic year 2003 – 2004 saw a considerable increase in the number of e-Learning initiative at Alba Iulia university. In previous years, e-Learning projects had been the result of the work of individual teachers often linked to that particular course. It became clear that for an accurate assessment of the effectiveness and efficiency of Web technologies applied to learning, it was necessary to involve more teachers in a co-coordinated manner. In 2003 – 2004, two faculties (Sciences and Economics) with five specialties (Informatics and Mathematics, Topography, Economics, Birotics and Laws) of the five faculties at Alba Iulia university decided to embark on e-Learning projects. Each faculty designed its own e-Learning project on the basis of its plan for developing the teaching and learning processes, according to its needs and objectives. The project follows specific guidelines that are periodically reviewed and assessed by a commission made up of the university members and staff from the Department of Distance Learning Technologies of "1 Decembrie 1918" University (DDLTU). The university has established its needs and priorities. The DDLTU supports the project with the backup of its specific competencies in learning technologies. Its team of content experts, instructional designers and technical experts offers university members methodological and technical support. Building and maintaining the e-Learning infrastructure is addressed by **I**ntegrated **E**nvironment **L**earning for Distance Education (IeL), the platform build by the Centre of Multimedia Technologies and Distance Education (CTMED) of Technical University in Cluj-Napoca and run by the DDLTU of "1 Decembrie 1918" University in Alba Iulia.

Supporting Elements for the Development of Distance Education in Romania

The early discussions with the view to implementing a Distance Education system in Romania have taken place in the Education Ministry since 1995, but the lack of financing has stopped them to the stage of proposals and of modernizing the traditional educational system. The real basis of a national level Distance Education infrastructure was set in 1997-1999, when Romania benefited by a PHARE program. The support for the Distance Learning system initiated in 1997 went on with other programs financed by the World Bank and then by the European Community countries (Tempus, Leonardo, Socrates mainly by its subprogram Erasmus, and recently Minerva).

The real basis for a Romanian Distance Education system was set in 1996 and was financed by the PHARE Multi-country Programme for Distance Education. The result was the establishing of the seven regional centres

217

(IDESC, CNODESC, BV-DESC, the DE centre at the University of Bucharest, the DE centre at the "Lucian Blaga" University in Sibiu, the DE centre at the West University in Timisoara and the DE centre of the CODECS Foundation in Bucharest). Simultaneously with the creation and the development of the infrastructure of these centres, several state and private universities in the Romanian higher education system set their own Distance education centres and departments.

In 1996-1999, the Romanian Distance Education system faced a crisis because of the failure in reaching collaboration and a standardization of the already existing centres at a national level. The only coherent development at a regional level was accomplished by the creation of the academic Distance Education consortium TREND (Trans-Regional Network in Distance Education), composed by the ODL centres set with PHARE financing in Iasi, Brasov and Cluj (IDESC, BV-DESC and CNODESC).

The TREND, which was created by the three PHARE centres, is based on common quality standards. An ample exchange of experience was systematically made between the TREND partners. A number of projects in which TREND and other regional PHARE centres from Central and Eastern Europe were partners, have been elaborated. One particular project was dedicated to the implementation and adaptation for Romania of the ENVIMAN course (from the PHARE CMD project). Unfortunately, the project has not been approved so far within the Leonardo da Vinci EU program. Later, TREND received as partners three more centres: CSIDD of the "Dunarea de Jos" University in Galati, the Centre for DE of the "Stefan cel Mare" University in Suceava and the DE Department of the "1 Decembrie 1918" University in Alba Iulia.

The activity of all the existing DE centres in state or private universities in Romania is under the jurisdiction of the Law of the Education nr.84/1995, subsequently modified by the Government Decision 1214/2000, of the decisions released by the university senates and of their own organizational and functioning regulations.

The national central organization that imposed the quality and functioning standards is CNEEA (The National Council for Academic Education and Accreditation). The coordination program of this organization also standardizes the e-Learning activity of the Distance Education departments and centres from these universities and colleges.

Strategy of the e-Learning System in the DDLTU

It was of utmost importance to establish the main aims of the project right from the beginning and to articulate them in the context of yearly teaching programmes and lines of action. There is a step-by-step evolution in the yearly teaching programmes. The first year (2001) of the project consists of a phase which "mimics" the traditional approach to teaching in which both teachers and students become familiar with DE technology, the learning environment and above all with the new possibilities for teaching and learning processes. In subsequent years, priorities moved on from the identification and definition of teaching and learning processes which best exploit the characteristics of the e-Learning technologies, to the definition and creation of a virtual classroom which effectively integrates the traditional classroom and reformulates and reorganises the aims and activities of the course. The four lines of action are:

- training and support for members of university
- training and support for DE students
- design, creation and evaluation of virtual classrooms associated with traditional lectures, with special attention to experimentation with specific multimedia learning modules
- applying of e-Learning platform in DE system.

The plan for the 2003 – 2004 academic year of the DDLTU project was composed of six phases, as follows:

- technical and methodological training for teachers
- design of virtual classrooms
- creation and monitoring of virtual classrooms
- evaluation and online testing the students (in the first semester)
- repetition of the previous phases of the project in the second semester
- overall evaluation of the 2003 – 2004 academic year.

During September – November 2002 DDLTU planned the development of *university training in e-Learning*. Special emphasis was placed on both technical and methodological "training and support", which were found to be fundamental elements of support for university members, especially in the transition phase from a traditional teaching practice to more innovative teaching.

Aims for the 2003 – 2004 academic year - management of the virtual classrooms and integration of teaching practices in the virtual classrooms:

- basic technological competencies for independent use of e-Learning platform tools
- introduction to active use of website
- outline of involvement required: time for creating material and close collaboration with "experts" for design of the virtual classroom
- creativity in the use of e-Learning platform tools
- creation of teaching modules, which integrate the potential of the virtual classroom (communication and learning processes) with those of the real classroom.

We alternated face-to-face teaching with small group workshops and we used tutorial model for university training. We evaluated the acquisition of competencies by introducing an "individual task" that each university member had to develop and discuss with the instructional designer.

In the university training sessions members are given a general introduction to e-Learning: theory and presentation of examples applicable to certain disciplines, practical workshop on use of IeL tools and practice at building online courses. University members are enabled to manage their support site independently. We now believe it is important to concentrate on the evaluation of the pilot phase of the project to have a clear understanding of the impact that Web technologies have on teaching practice and to define, therefore, how to proceed in this project.

About IeL – the e-Learning platform

IeL – Integrated Environment Learning for Distance Education tries to cover the needs stated above. At the beginning of the development cycle of this application some design guides this kind of learning environment have to comply to were followed, such as the modular architecture, for superior scalability and performance, enabling single-site implementations, in order to support tens of thousands of users and thousands of courses, an open architecture that supports third-party learning applications interfaces and the easiness of use by all the users, through a familiar and consistent graphical user interface. The application is structured into three modules: a *communication environment*, a *course maker* and an *evaluation and assessment module*. These three modules represent layers of the same application and since they are encoded in Java and in Java compliant technologies, the platform independence is achieved. The architecture used to develop the application is a *two-tier* one based on Java, Java Server Pages, and Java Servlet technologies.

The first module implements a communication environment built on top of the ICE communication platform (*Integrated Communication Environment* – a software package that contains several critical communication facilities: whiteboard, chat, message interchange). The second module implements a *Course Builder* that has four access levels: ***administrator, professor, tutor*** and ***student***. Each of these levels has specific features as shown in Figure 1 below. In fact, this module is the most important because it manages all educational activities. The third module, for the evaluation and assessment of the students, is structured into two levels: ***evaluator*** and ***student***, each having characteristic features: the evaluator can insert tests (activated on demand), questions and can view different statistics offered by the software; the student can only view or take regular course and demo tests.

The Data Layer consists of both a database system and a set of DataProvider objects. The database system is a Microsoft SQL 2000 Server, chosen for its advantages: good performance for OLTP (large-scale online transactional processing), data warehousing, powerful and flexible Web-based analysis, highly scalability and reliability, and for its support for stored procedures (when the procedure is modified, all clients automatically use the new version).

The database has been divided into several functional blocks: *the user section*, which stores the information about user's accounts (professor, tutor, student, administrator), the *course section*, containing information about the course structure and about the links with other physical educational resource locations, the *schedule section*, containing the schedule for all course activities, the *testing section*, with questions and answers for a particular examination module and the *communication section*, containing all the received messages (off-line messages, e.g.).

Conclusions

Teachers in the "1 Decembrie 1918" University tend to use now the virtual classroom as a back-up to the traditional lecture room and have difficulty in understanding the added value of the virtual classroom and using it in their teaching practice. In addition, teachers are often demoralized by what they deem as an excessive workload, given the lack of recognition on behalf of the university of the teacher's time and commitment.

By using the IeL, the students can ask questions and send comments to the tutor or to the professor and can receive the feedback via e-mail. A possible

221

development of IeL could be focused on creating a *Virtual University*, based on three-tier architecture, thus covering all the tasks specified in the Open and Distance Learning Programme.

References

1. A.Vlaicu, B.Orza, V.Mesaros, V.Dobrota - A Modern Multimedia Communication Environment for Distance Learning Applications, "Proc. of the 3rd International Conference on Multimedia Technology and Digital Telecommunication Services" (ICOMT '98), Budapest, Hungary, 28-30 October, 1998.
2. Cosmin Porumb & colab. - Integrated Environment for distance Learning – IeL, "EDEN 2003 Annual Conference", Rhodes, Greece.
3. Constantin Hutanu & colab. - Online learning using an original e-Learning platform, "International Carpathian Control Conference 2004", Zakopane, Poland.
4. Constantin Hutanu & colab. - Applying Modern Educational Technologies in Romania: the Impact of e-Learning Platforms, "EDEN 2004 Annual Conference", Budapest, Hungary

Authors:
Constantin Huțanu -"1 Decembrie 1918" University of Alba Iulia
Ioan Ileană - "1 Decembrie 1918" University of Alba Iulia
Moise Achim - "1 Decembrie 1918" University of Alba Iulia