University of Bucharst E-Learning Experience

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Abstract: Established since 1864, the University of Bucharest is one of the oldest universities in Romania. As it concerns the number of students finishing their studies, University of Bucharest ranks second among Romanian universities. This paper is aiming to present the achievements of the University of Bucharest in the area of promoting the e-learning technologies in higher education. The first step was to promote the public private partnership with companies providing ICT e-learning training programs. The next step was to develop e-learning technologies and resources in agreement with our own curricula and training programs.

Key-Words: e-learning, e-communities

1 University of Bucharest's strategy to promote ICT in education

The world economy is in the midst of a profound transformation, spurred by globalization and supported by the rapid development of ICT that accelerates the transmission and use of information and knowledge. The EU and the member states began to implement a comprehensive set of policies aiming to increase the digital literacy levels among European people, [1].

That is why a three level strategy was approved by the university's Senate, early in 2003.

In order to reach the basic level, which is "ICT Literacy", the ECDL training resources were developed based on the eLearning technology. These courses were included in the new curricula built on the Bologna Process principles. In addition, the academic and the administrative staff were encouraged to obtain the ECDL certificates.

The intermediate level, "ICT in subject areas", is dealing with the use of ICT in teaching/learning other subjects: mathematics, physics, biology etc.

The third level of the strategy is focusing on the transformations produced through the use of ICT: people using eLearning courses are changing the way they learn; the institution using a virtual campus takes the full potential of the synchronous and asynchronous, bidirectional communications between the members of the academic community (students, academic and administrative staff).

Only recently, November 2007, the Romanian Ministry of Education launched a proposal for a similar strategy including as key actions: (1) to set up a National Agency to promote ICT in Education (December 2007); (2) needs analysis (March 2008); (3) the strategy framework (December 2008); (4) human resources development (December 2008); (5) in service teacher training (December 2008); (6) the infrastructure (December 2008); (7) national portal for education (December 2009) and so on.

By comparison, our university has 5-10 years in advance!

2 University of Bucharest's elearning experience

2.1 e-Learning resources for ICT Literacy

The eLearning can be CD-ROM-based, Network-based, Intranet-based or Internet-based. It can include text, video, audio, animation and virtual environments. It is self-paced, hands-on learning and it can be a very rich learning experience compared to the level of training in a traditional classroom. A huge collection of articles focusing on "e-Learning" subject can be found, e.g. [2].

Based on the research and development activities, we have developed our own technology to produce e-Learning courses. The model used for eLearning courses is presented in Fig.1, which is a screen capture from the course "Internet - Information and Communication". The left side of the screen is allocated to pictures, animation or simulation. Students can control these applications, can re-run the simulations until they understand the "educational message". The right side usually contains the text for self-study. The buttons allow the student to personalize the study, to go forward or

backward, to jump to another paragraph or to another chapter of the course.

Every course has also a self-evaluation service (Fig.2) that provides the results of the evaluation just in time. The staff of the Department CREDIS has designed and produced seven course modules in eLearning format, targeting the needs of ECDL Certification, starting with 2003.

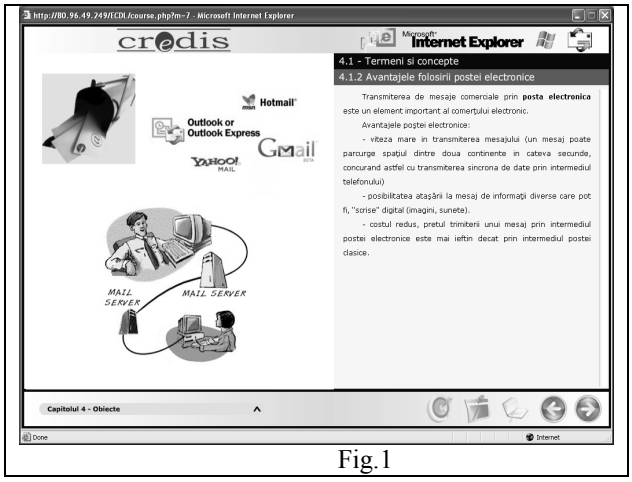

Fig.1

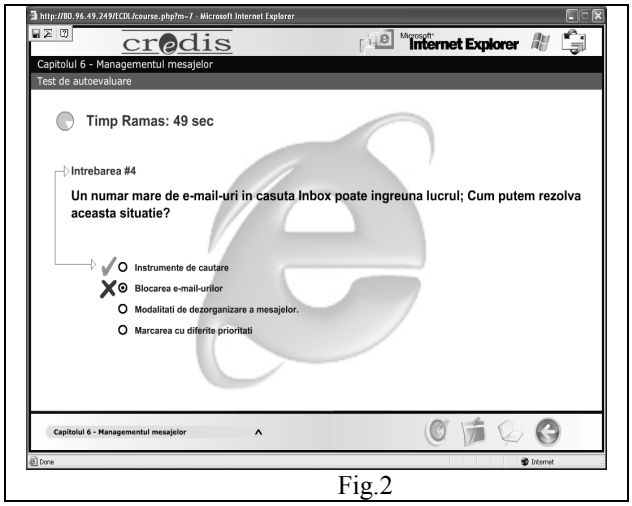

Fig.2

Even now, in 2007, we are the only suppliers in our country for this type of interactive, student-focused learning resources.

2.2 Virtual labs

A good example for "ICT in subject areas" might be the virtual lab for Physics. For the entry-level programmers in Physics we recommend the use of software like Interactive Physics, Crocodile Clips, LabVEW etc. These tools are easy to learn and to use. Our experience shows that, after half an hour initial training, the teachers and the students can produce very interesting simulations based on this graphical programming environment.

Today personal computers already have the power to make complex calculations and to run real time simulations. A simulation is a realistic environment in which students perform a meaningful task and experience appropriate consequences as feedback for their behaviors in that environment. For advanced programmers we recommend Macromedia Flash.

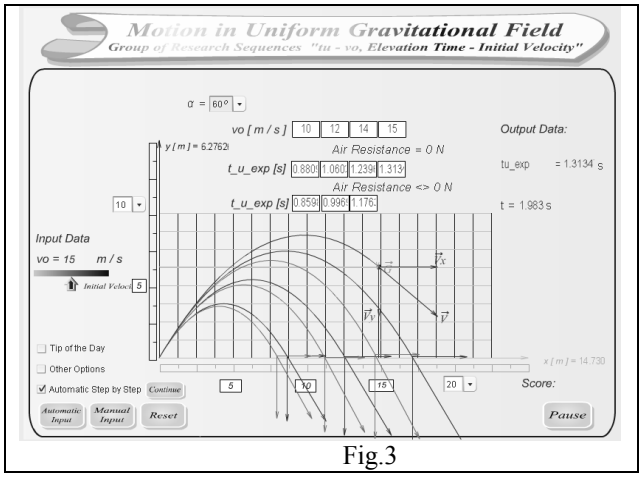

Fig.3

The Fig.3 presents an application (based also on Macromedia Flash), designed to support the study of the motion in the uniform gravitational field. We found that other programmers are able to produce similar pieces of software for Physics, with interesting animations, nice colors and buttons; sometimes that is missing is…a correct Physics!

2.3 Virtual campus

The Virtual Campus was designed to provide a complete, scalable, Web-based, eLearning platform with focus on curriculum delivery, learner assessment and personalized feedback. Our Virtual Campus was open in July 2002 and was tested by the Department staff of the Department for Open Distance Learning (ODL), Continuing Education and Professional Conversion, CREDIS. Our students, academic and administrative staff, and guests from other universities in Romania and abroad currently use it.

The entry point for the Virtual Campus can be found at [3]. The figures Fig.4 and Fig.5 present two screen shots of this portal. The services already implemented are: news, calendar (personal and institutional), chat, forums, internal messages, on-line courses in eLearning format, on-line examination, portal options.

The administrators of the portal provide the students with the user-name and the password. The students are enrolled in different groups that have a number

of forums, available for asynchronous discussions on various topics. The chat service is especially designed for synchronous communications. After years of using this platform showed us how important a portal is in supporting bi-directional communication between students and tutors. The internal messages are only flowing inside the server which is hosting the Virtual Campus and do have the facility to send/receive attached files.

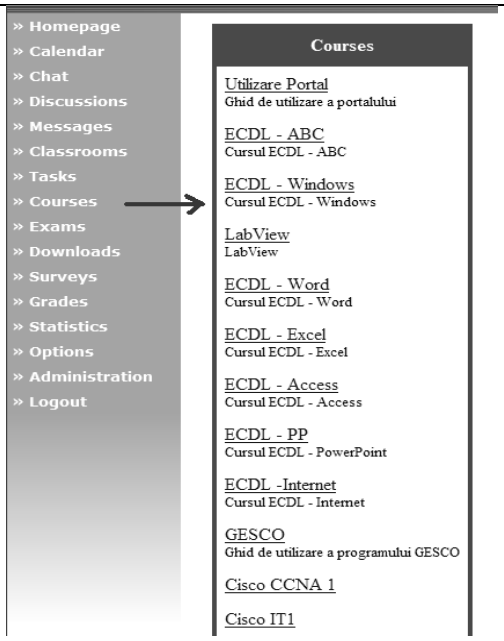

Fig.4

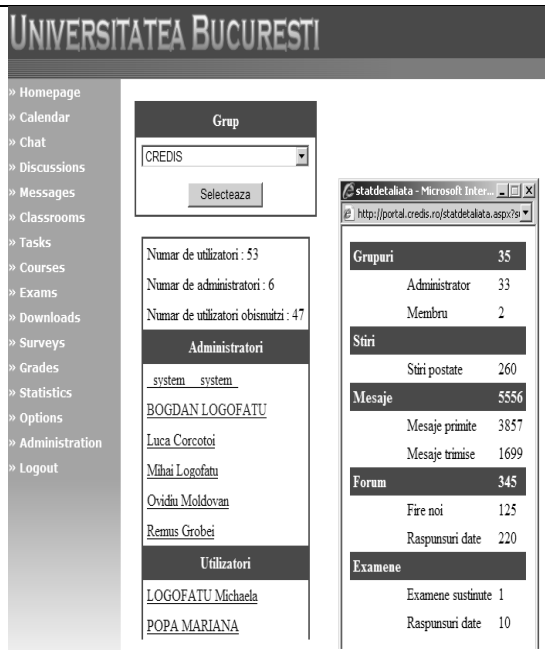

Fig.5

All over the world, universities use software-based collaborative systems: (a) proprietary systems; (b) free systems (Open Source); (c) systems developed "in-house". We have tried and tested all these alternatives. Finally, the decision was to implement as collaborative system an in-house system.

2.4 UniBucVIR, the virtual university project

The University of Bucharest took into consideration the opportunity to build a pilot project having as objective to set-up a virtual university platform: (i) to design, implement and develop a virtual university platform at the University of Bucharest, in pilot phase; (ii) to implement two Master programmes on this platform; (iii) to create a core for further development of a "virtual university"-like consortium with national coverage. This project was financed by the Ministry of Education in Romania with 1,000,000 EUR in 2007.

The UniBuc-VIR research project will include:

- the UniBuc Virtual Campus –hardware (computer networks, internet access points in faculties) and software (software applications) infrastructure which will provide the communications systems used by the "users" of this institution (students, teachers, researchers, administrative personnel);
- computer based administration systems (information, planning, databases, student records, accounting and financial services, etc.)
- communications services (email, discussion boards, chat, video-conferencing, wireless internet access);
- educational "blended learning" services, flexibly combining face to face and virtual learning (e-Library, e-Books), eLearning resources, virtual and remote laboratories, subscriptions to electronic specialized newsletters, etc.
- research services in virtual or actual laboratories for interdisciplinary and transdisciplinary study programs.

Taking into consideration the paper [4], focusing on the virtual university models, we can appreciate that our university belongs to the "the front-runners", those institutions that are clearly the front-runners in integrating ICT in both the educational and the organizational setting.

2.5 CRM/ERP Applications

The Department for Technology took into consideration the necessity to improve the actual portal used by NetAcad community. This portal has some disadvantages like:

- it is impossible to know the classes for a student

- it is impossible to send an e-mail to all the students in one class
- no programming/viewing system for practical activities
- difficulty with enrolling (manually/by username)
- difficult to contact students with no public profile

A new portal was developed including CRM/ERP modules with specific sections. As results we can underline additional features provided by our system: all Academy's activities are more organized; ease of use for the students and instructors database; ease of sharing documents between users; more structured activities for the Academy's staff (scheduling meetings, electronic checkout, assigning tasks, obtaining holiday approvals).

3 The partnership with EU institutions

The BIT2010 Socrates-Erasmus project was approved in 2006 and it is aiming to contribute to the Information Technology human resource development within the context of the Bologna Process and the "i2010 Initiative". The BIT2010 consortium is based on six universities belonging to EU Member States: Austria, Germany, Sweden, Poland, Bulgaria and Romania, [5]

The BIT2010 project will design and implement a new Bachelor curriculum in Information Technology and will prepare its graduates for the unique challenges faced by today's technology companies and industries. The project will also train these graduates to become tomorrow's technological leaders. One of the main outputs of the BIT2010 project is to provide the students modern and valuable learning resources, most of them in e-Learning technology.

4 Public-private and public-public partnership to promote the ICT

The public-private partnership is a partnership between public and private institutions that is sometimes referred to as PPP or P3. The University of Bucharest has developed PPP with CISCO Networking Academy Programme (CNAP), Microsoft IT Academy Programme and ECDL Romania. These partnerships open the access to high quality teaching/learning resources prepared by the private companies. Students can access these resources online, on-campus or off-campus; the practical activities are performed within our laboratories, using real equipments, assisted by ICT experts qualified in private training centres, outside of Romania. Finally, the students can obtain worldwide-recognized ICT Certifications (CISCO, Microsoft, ECDL).

As a result of the high quality activity within CISCO Networking Academy Programme we received the title of the "Local Academy of the Year 2007". We were in competition with more than 4000 academies in 130 countries from E&EM (Europe, CIS, Middle East, Africa and Latin America.).

The Internet Academy initiative was launched by the CREDIS Department on May 15, 2003. This is a public-public partnership between the university and high schools, aiming to bring together those education institutions in order to promote lifelong learning. The initiative's motto is "Internet plus Education equals Jobs". In fact, this is the real problem: it does not matter how many diplomas you accumulate if you cannot manage to find a job!

5 Conclusion

This paper was aiming to present the achievements of the University of Bucharest in the area of promoting the e-learning technologies and other digital technologies in higher education. The first step was to promote the public private partnership with companies providing ICT e-learning training programs. The next step was to develop e-learning technologies and resources in agreement with our own curricula and training programs. Clear results including e-learning courses, virtual campus, CRM/ERP applications were developed. All these results will contribute to create new learning opportunities, will contribute to generate competitive capacity for future EU programs. and will sustain our European integration.

References

[1] Kerstin Junge, Kari Hadjivassiliou, "What are the EU and member states doing to address digital literacy?", *eLearning Papers*, Nº6, November 2007, ISSN 1887-1542.

[2] David Casacuberta, "Digital Inclusion: Best practices from eLearning*",eLearning Papers*, Nº6, November 2007, ISSN 1887-1542.

[3] http://portal.credis.ro

[4] Draft Final Report to the EU Commission, DG Education & Culture, *Virtual Models of European Universities*, February 2004.

[5] BIT2010, Socrates-Erasmus Curriculum Development Project, 2006-2009.