EURO QLIO – A EUROPEAN PROFESSIONAL DEVELOPMENT TOOL FOR EDUCATION AND TRAINING OF QUALITY SPECIALISTS

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Abstract: *In the context of the development of e-learning methods, the paper presents a specific case of software tools using of this in type of education, the ERASMUS project, called „Filière Euro Qualité Logistique des Organisations", acronym EURO-QLIO. It is known that the e-learning process offers flexibility and affordability, so that it can be used in blend learning environment, like EURO-QLIO. The project ensures the preparation and conduct the partnership for education and professional development training in the field of Metrology, Quality Control and Organization Logistics. The partnership is ensured by the involvement of three universities from three different countries: „University Henri Poincaré" from Nancy, France (project coordinator) "University Politehnica of Bucharest", Romania, and "University Angel Kanchev" from Rousse, Bulgaria. The Romanian partner has co-opted from the industrial area the "SC Marco & Alex Instalații Frig SRL" Company, which is an interface between the Euro-QLIO project and the industrial beneficiaries. The educational platform is based on two components: a virtual campus establishment and issuance of triple recognition diploma.*

1. INTRODUCTION

Most of software tools used in the education process is based on e-learning platforms. Virtual campus proposed by the EURO-QLIO consists of a set of online tools, databases and managed resources that exist as an integrated system, functioning coherently to support the education in the field of Metrology, Quality Control and Organization Logistics. The e-learning is used to support education because offers flexibility according with the local needs and supports creativity of the academic and support staff, who develop and utilizes the features, add data and content. But the main goal, when is used an e-learning environment, is to provide students and teaching staff with online

resources services to enhance the quality of student learning and to improve the effectiveness and efficiency of teaching. Therefore, the e-learning platform has an important advantage: its leads to an effective teaching and learning process, because creates a mixture of text documents, picture, animations, audio and video content with communication technology oriented on community definition - learning groups or virtual classes, and offering support throughout the learning process. Used primary as online distance learning tool, based on internet resources, the e-learning platform can be a part of a joint learning process, like Euro-QLIO, which involves both classic learning and distance learning and each of them have a specific role. These two distinct modes of using e-learning: "distance" learning where students have no face-to-face relationship with their tutors and peers and "blended" learning where students do have face-to-face contact with tutors and peers. In distance mode, the e-learning will provide the principal medium for their studies while in blended mode the e-learning is one tool among many.

In traditional learning environment, students interact with and use learning resources such as: libraries, teaching rooms, study guides, lectures, tutorials, labs, reading lists, etc. They will also use administrative and logistical systems such as registry, assessment and timetabling. And they will receive support, participate in evaluation and will most likely engage with many of the social aspects of university life.

The virtual learning environment is developed to provide many of the characteristics of a traditional learning environment. The balance between the online and the face-to-face is the essence of the "blend" and is in a natural way situated at equilibrium. An e-learning tool may provide learning and teaching resources such as searchable online, study guides and digital lecture materials, video, discussion boards (both for general communication and for online collaboration for teaching and learning), and assessment. It may also provide administrative and logistical systems such as student records, student recruitment (even maybe online registration and payment of fees), assessment feedback and results, interactive and personalized scheduling and timetabling, and allocation and grouping support.

Teaching and learning environments must have different roles, processes and systems, which can be viewed as learning cycles:

- Learning cycle: students will be recruited, undergo studies, complete coursework, communicate with the teachers and with each other, take exams and complete their studies. They will also use various resources, in the e-learning environment this can be the digital library.
- Teaching cycle: teachers design, deliver and assess their courses, communicate with students and colleagues, undertake administrative duties and engage with their professional and academic communities.
- Management cycle: Administrators staff manages business processes, such as logistical and financial support, human resources and record keeping. Support staff looks after facilities and services (libraries, computing, classrooms, laboratories and testing stands). Managers will set policy and strategy, organizes the structure of the institution, validate and audit the activities of those in the institution, and will engage with funding and regulatory bodies

The e-learning platforms offer solutions to important issues which appear at university education level. Here therefore, we can emphases:

- the long term professional education,
- costs reduction,
- time influence over resources,
- the student development diversity,
- continuous innovation regarding the education process, like distance learning, opened and flexible,
- the possibility to interconnect different tools used in human resources departments.

E-learning involves a better learning process because:

- offers digital library which consists of a wide variety of documentation resources: printed materials, presentations, questionnaires, multimedia files (graphic files, animations, sounds, interactive elements), etc.;
- offers control over the students learning methods;
- the students have an integrated learning environment;
- establishment of an customized environment;
- offers an active way of learning;
- offers time at exactly the right time when needed for a particular activity before, during or after work. Learning will be available 24 hours a day, 7 days a week all around the world.;
- improves communication between teachers and students or between students through "internet presence";
- offers continuous or discontinuous education actions and reactions anywhere and anytime, e-learning can be used for training at initial stages, to get new skills, or for continuous updating training;
- increases student motivation by means of interactive courses and study groups;
- supports and encourages collaborative teaching;
- offers economic support, for example, by re-using expensive resources such as software applications;
- gives responsibilities to students regarding the learning process;
- pace (learner can spend longer on a topic with no peer or tutor pressure and also can progress more quickly, if familiar with topic - studying only what is required improves motivation);
- style (learning by doing activities, learning through reflection before taking action, group learning or let's say collaboration for team working) to meet learner needs;
- cuts-off administrative activity and costs. However, the costs of developing different types of learning must be taken into account when comparing types of training and estimating cost savings;
- improves overall teaching process;
- improves efficiency;
- encourage staff to take responsibility for their own learning;
- offers flexibility because it is easy to implement the following really necessary parts of learning;
- offers flexibility in the means of organizing and delivering the learning activities to suit their own circumstances means that staff is more motivated to learn
- diminishes differences between reach and poor people, boys and girls, rural and urban population;
- diminishes the problems impact caused by distance;
- offers training at a place (at home or at work, away from their usual workplace)
- fast deployment, improves time for providing information - lower time spent for transforming new information into didactic material and time required to roll out a new training-program can shrink dramatically;
- offers better support because learners have the possibility to get access to experts on special topics to ask questions and get additional information and support;
- offers the possibility of synchronic access (at the same time) or at different periods of time to the e-learning platform. Critical information and training can be delivered to multiple locations at the same time;
- e-learning covers the complete cycle of the teaching and learning process.

The implementation of e-learning platforms in Romania faces difficulties:

- infrastructure – telecommunication services, access to the Internet or intranets and informational databases;
- teachers have low computer driving skills;
- the need to create new jobs in order to support telecommunication, digital information transfer and multimedia applications;
- boring, text-heavy content because trainers are now developing online textbooks and much of today's e-learning implies scrolling text-heavy HTML-pages;
- effects are hard to measure because the overall impact of e-learning remains uncertain because managers fail to measure effectiveness. Also, it is very difficult and time-consuming to measure effects quantitatively, and therefore many organizations only use the qualitative feedback instead.

- underuse which means that the use of e-learning systems often drops off after a “honeymoon period” immediately after launch. However, this research does not compare dropout rates relative to other types of training.
- publisher rights over the didactic material and the costs of software applications.

2. THE ERASMUS PROJECT EURO – QLIO

The project “Filière Euro Qualité Logistique des Organisations” (EURO – QLIO) has as primary objective to ensure the preparation and conduct of the partnership for professional development education in the field of Metrology, Quality Control and Organization Logistics. The partnership was established through the involvement of three universities and one industrial company: „Henri Poincaré” University, Nancy, France (project coordinator), University "Politehnica” of Bucharest, Romania, and " Angel Kanchev” University of Russe, Bulgaria and “SC Marco & Alex Instalații Frig SRL”. This project was approved and launched in October 2007, being recorded in the ERASMUS Program under the code 134395-LLP-1-2007-1-FR-ERASMUS-EVC, acronym EURO –QLIO. The total budget of the project is 446.733 €, of which 300,000 € funding from the European Community (67,15%). The project is spread over a period of 24 months.

The project EURO-QLIO, aims to achieve a platform for distance learning in the field of Metrology, Quality Control and Organization Logistics. This platform is based on two very important components, namely: establishment of a virtual campus, on the one hand, and on the other hand, issuance of a diploma with triple recognition. This virtual campus relies on the use of means from the Information and Electronic Communications Technology (IECT), providing a set of software tools specific to distance learning – integrated multimedia modules used for a joint education, involving both individual and group collaboration. Also, blended education integrates methods of classic teaching and interactive teaching having the possibility of regrouping students in a flexible manner. In this context, the software tools have to be implemented in the teaching system of each partner. The virtual campus is focused on license training, ensuring at the same time the base premises for a complete learning cycle involving both Master and PhD studies in the field of Metrology, Quality Control and Organization Logistics.

A diploma with triple recognition is given to the students when they graduate the learning modules coordinated from distance by the teaching teams belonging to each of the partner countries, France, Romanian and Bulgaria. The diplomas obtained after going through the different learning stages are recognized by each partner due to the fact that the particularities of the national teaching system are eliminated by introducing virtual mobility both, for students and teachers. This diplomas internationalization will be made primarily by: introducing a unitary curriculum in four languages (Romanian, French, English and Bulgarian); organizing the field work in specialized industrial units with a similar profile (industrial logistics) or in the partner universities; software transfer for different applications. The teaching activity is designed by a team of teachers formed from all three universities involved in the project, based on the following activities: establishing the teaching objectives; investigation of existing educational resources; setting the team of teachers; establishing the content; applying the methodology; ensuring evaluation of the teaching activity.

EURO-QLIO project is based on the Information and Electronic Communications Technology for education and professional development. In this regard, the project aims for the following:

a) supports a permanent link with technology - use of the web platform as the basis of educational process; the material dimension of technology - access to information resources necessary to support the process of education and the social dimension of technology – issues regarding the depersonalization of student-teacher contact trough a joint education approach;
b) provides a dynamic process of education - a course does not belong to a person, but to a team of teachers who are improving and modifying it continuously from the curricular and contents point of view.

The information technology used in the EURO-QLIO project must cover three main functional perspectives:

a. Student's perspective: unless it is particularly dysfunctional, the e-learning they use will be taken as given and will not usually be questioned. There is a fairly common expectation for more and better support, both educational and pastoral, and as such, if e-learning is perceived as being able to provide that support then students have tended to be enthusiasts for using such kind of systems. The corollary of this is that when things do not function as they might that they are often the harshest critics. Students have some concerns regarding the effects of using e-learning environment, for instance the costs of printing notes and resources are being moved to the student as materials are only supplied online. There are also issues of computers access, particularly in certain places and concerns that the e-learning reduce the contact time with the teacher.
b. The teacher's perspective: teachers will spend much longer time than their students in higher education and are responsible for providing them with learning opportunities. E-learning must be perceived by teachers as a truly normative component of the teaching and learning environment. But e-learning must be widely adopted because response to increasing student numbers and a reduction in funding; e-learning makes the teacher's work easier and more efficient. Using an e-learning may require teachers to rethink the way they teach and how they work with their students and it may require different and potentially new skills, and will need to be carried out in a different support environment. As such an e-learning may not provide initial benefits and may indeed make a teacher's life harder, paradoxically at the same time as it provides a better student learning experience.
c. The institutional perspective: e-learning becomes one of their many essential business systems that can add real value to the library, registry and communications systems they already own. Many of the same criteria of system efficiency and central control may be exercised over the e-learning and the same causal expectations made of its ability to support learning. Implementing e-learning may incur significant up-front and recurrent costs, and it may only be viable at a cross-institutional level. In these circumstances, usually, the practice is to accept the system defaults and reconfigure the organization and its activities around what is presented to them.
d. National and international perspectives: a mix of competition and collaboration emphases the relationships between institutions. National bodies such as funding councils and technology advisory bodies usually determine which the dominant factor at any is given time, because the use of e-learning is now widespread in university education across the developed world and is becoming increasingly common elsewhere. Increasingly transnational organizations are using e-learning for internationally based teaching and learning.
e. The commercial perspective: the use of E-learning is becoming widespread in business, mostly in support of training rather than education, and mostly under the guise of learning management systems. A major difference in the work-based sector is the emphasis on training rather than education and the way it informs the quality of the activities of the participants in their mainstream duties. In education learning and the resulting academic awards process are the mainstream activities.

E-learning integrates a number of different functions and services into one system, these components can be:

1. Scheduling: the provision of timetables, calendars, the organization of staff, student time, the organization of rooms, meetings and other events, milestones and stages of a course's cycle.
2. Communication: can be one-way (one-to-many/broadcast) or two-way (one-to-one/ unicast or one-to-group/multicast) communication between staff and students including email, discussion boards (asynchronous) and chat rooms (synchronous).
3. Content: this cover both the support of actual working processes of courses such as: simulations, problem-based learning, group or project work, storage, authoring and presentation of static or dynamic course content. This would also include the provision of banks of images and questions and learning object repositories.
4. Assessment: this includes the support of formative and summative assessment and the administration and logistics of these processes.
5. Personalization: the system can allow be customizing and personalizing by users considering their own interests and activities, including: web pages, content annotation, personal timetables and setting up groups for communication and sharing resources.
6. Administration: this includes the creation and maintenance of class/groups lists, the tracking of staff and student time, the use of resources and the completion of audit and other logging activities.
7. Regulations: the provision and maintenance of rules, codes of good practice and documentation relevant to the management of the course.

8. Presentation: the provision of presentation and teaching materials, such as lecture and tutorial resources.
9. Portfolio: the submission and storage of portfolio items such as coursework, logbooks and personal reflections, logos, pictures, etc.
10. Curriculum: the provision of course and pedagogical frameworks, such as: curriculum guides, learning goals and results that students may pursue.
11. Portal Services: the provision of third party functionality and content of the e-learning platform. Examples would include searching external catalogues and repositories, video and audio streaming and linking to external materials.
12. Security: the provision of user's authentication, security of content and the maintenance of privacy over sections and content within the system.
13. Multiple Roles regarding the objects: allows different users to have different rights over the features and functions within the system. A tutor may be able to modify, read or create objects whereas a student will not. Some systems may only have a restricted range of user types while other may support any number of roles.

3. CONCLUSIONS

In the context of the development of methods for virtual campus, the paper presents a specific case of use of educational software tools implemented for an ERASMUS project called „Filière Euro Qualité Logistique des Organisations", acronym EURO-QLIO. This virtual campus is based on e-learning platform which assures an effective learning process, created by mixing digital content with communication, allowing communities to be defined by learning groups or virtual classes and to offer support throughout the learning process. This tools provides the advantage of using blend pedagogy because the e-learning process offers flexibility and affordability "anywhere anytime", allowing each actor of pedagogic process to control their particular role.

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education and the social dimension of technology – issues regarding the depersonalization of student-teacher contact trough a joint education approach;

- provides a dynamic process of education - a course does not belong to a person, but to a team of teachers who are improving and modifying it continuously from the curricular and contents point of view.

Designing systematically and methodically the teaching process, based on the virtual campus is very advantageous because: it supports the training centered on learning; maintains a real, efficient and attractive training; sustains the communication between designers, teachers, computer specialists and users; facilitates diffusion and dissemination of teaching knowledge; offers practical and acceptable solutions to problems that occur during the training process; the phase of analysis sustains future development of support courses; ensures that what has been thought is necessary for reaching the learning objectives of the students and also, facilitates a correct and precise evaluation of the training process.

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