e-Learning 2.0 at the "Politehnica" University of Timişoara

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Abstract – Learning, as an educational process, has known a significant evolution along the recorded history. After immemorial times, there were the Greek and Roman schools of thought, then the monasteries of the Middle Ages, modern educational reforms after that, as well as countless intermediary stages. During the information age, computer aided learning appeared, which in turn transformed into what today we call e-Learning. With the emergence of the so called "social software", and the WEB 2.0 "revolution", this concept began evolving again. The tools that, at first, allowed regular users to easily create online content, started being used for pedagogical purposes, turning electronic learning (asynchronous, so far), into a two way street. This allows tutors to adapt their teaching style and content, in real time. The tools previously used for informal, social interactions, like the forum, blog, wiki, chat or even the humble email, become essential to the educational process, not only as means of socialization, but as vital instruments of learning. Enter e-Learning 2.0.

Keywords: eLearning, web 2.0, blended learning

I. WHAT IS E-LEARNING?

Accurately defining e-Learning has been a delicate problem ever since the term was introduced. Maybe the clearest definition is also the simplest: "E-learning (or Electronic Learning) is a general term used to refer to computer-enhanced learning" [3]. Using CD's or DVD's for presentations, or a projector connected to a laptop during a class can be regarded as e-Learning, however, the general conception is that e-Learning refers to online courses.

The traditional situation of e-Learning finds the learner seated in front of his/her computer, downloading online content, and completing their assignments by surfing the Web and writing essays, case studies, or, in some cases, taking online tests. The tutors regularly evaluate the learner's actions, including the time spent visiting the course's interface and/or required activities. After the course's completion, the learner receives a certificate of attendance, and the recognition inherent to that particular course.

Most of today's online courses have some form of official attestation, usually from institutions of higher learning, but since these courses are generally not free, one must be wary before joining such a course, by first seeking relevant information about it.

Another important part of e-Learning, actually defining a whole environment fertile for the concept, is the so called "corporate e-Learning". Large companies spend billions each year on training programs, usually teaching new employees the company policy and/or specific techniques and technologies. With the emergence of e-Learning, courses are created, which employees can then follow over and over again, exponentially reducing the costs.

II. WEB 2.0

The term became popular following the first O'Reilly Media Web 2.0 conference in 2004 [5]. Again, there are a great number of rival definitions, but most of them encompass the following aspects:

- Software Services. The trend in software design is to insure the usage of certain software packages without first installing them on the client's computer. This means that the users only need an internet connection and a decent web-browser. Some of these products require registration fees, but there are quite a few, especially online word-processors which are completely free.

- Harnessing Collective Intelligence. Every major web company, almost without exception, uses the visitor's input to further improve customer services. Giants like Google with its PageRank, or Youtube with the tags that users assign to the videos, trust the mass of internet users to help the search process. Sites involved in selling products or services always take into account the users' preferences in order to keep up with the demand.

- Everyone as Publisher. The transition to a user-driven web has begun for quite some time. Today, anyone can create a blog, write in a wiki, add their own photos on Flickr, and videos on YouTube. Many people have referred to this as the transition to the "Read-Write Web."

- Aggregation & Tagging. Of course, now that everyone publishes, information overload is taken to even new heights. So, to help make sense of

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this, there are ways of grabbing this information and pulling it together through mechanisms like RSS aggregators. There is also the problem that information is not neatly organized, so one of the approaches to help organize it is Tagging as is done in online systems like del.icio.us.

In its essence, the concept of WEB 2.0 is not a revolution in technology. Even though advances in bandwidth has surely helped (watching even a short video without broadband would be excruciatingly slow), WEB 2.0 depicts the way the web is now being used. It's about user created content, virtual communities and new ways for the common user to actively use the internet.

III. THE EVOLUTION OF E-LEARNING

E-Learning could not remain immune to the changes brought by this new wave of internet "culture", and by integrating the tools and concepts specific to WEB 2.0, took its first steps towards what is commonly known as "e-Learning 2.0" [2].

The term, disputed by some as presumptuous [4], was advocated by Stephen Downes in his article E-Learning 2.0, which appeared in "E-Learn Magazine" in 2006 [1] and tries to emphasize the implications of using learner-generated content in the learning process.

E-learning 2.0 adds the following characteristics:

- students create content, collaborate with peers through mechanisms such as blogs, Wikis, threaded discussions, RSS and others to form a learning network with distributed content creation and distribution of responsibilities;
- the learning process takes advantage of many sources of content aggregated together into learning experiences;
- it utilizes various tools including online references, courseware, knowledge management, collaboration and research.[4]

In a nutshell, e-Learning 2.0 means bringing the student in the front of the learning process, by not just "feeding" him information, but letting him test specific applications, perform simulations, make free connections, and in the meantime benefiting from his experience and using the most valuable content created in this manner, in the training of the next set of students.

IV. ADVANTAGES AND DISADVANTAGES OF E-LEARNING

The key advantages of using e-Learning are flexibility, convenience and the ability to work from any place where an internet connection is available, using the learner's specific pace of study [3]. This provides a great learning opportunity for those with a family, regular jobs or even people with disabilities, since they are no longer bound to a location or a timeframe, and they have to struggle less in order to keep up with (or wait for!) their other classmates.

Another great advantage is the possibility of interaction with colleagues independent of the physical distance in between, using electronic means such as e-mails, IM, forums, etc.

The use of digital media, such as live streaming lectures, or recorded MP3's which can be consulted over and over again, contributes to the ease of study, providing a rich and colorful learning environment.

Critics of e-Learning find that e-Learning depersonalizes the educational process, by cutting off the teacher-student face-to-face interaction. They also cite the feeling of isolation that a learner might experience, although the interactive online activities, such as forums or discussion-boards try to balance that, by creating virtual communities. Any type of human interaction is highly encouraged.

Another disadvantage is that in the case of collaborative assignments, the lag time between user entries can seriously delay the completion of the task. The time flexibility becomes here a drawback, since each learner of the group works in his/her own pace, often different from the others.

V. E-LEARNING AT THE "POLITEHNICA" UNIVERSITY OF TIMISOARA

The first steps towards e-Learning have been taken at the "Politehnica" University of Timisoara with the creation of the Center for Distance Learning portal (http://cid.upt.ro).

Fig. 1: The Center for Distance Learning – CID

Here, students from all over Romania could obtain learning material, submit assignments, find out news about the learning activities and post questions to the tutors and to their colleagues. And with the introduction of WEB 2.0 specific tools (forum, wiki, blog, podcast, etc.), a gradual shift began towards the new and improved e-Learning, with all its pros and cons.

This first platform was developed in-house by members of the Communications Department (I developed the blog section from scratch) and did not constitute a proper Learning Content Management System (LCMS), since the students downloaded materials as PDF files, submitted assignments by email, and were pretty much studying on their own.

October 2009 saw the debut of the new educational platform for the Center for Distance Education, (called Virtual Campus or CV – accessible at: http://cv.upt.ro), largely based on the open-source LCMS Moodle [6]. The communication tools that this platform has to offer greatly facilitated the educational process, by creating an attractive, easy to use and efficient environment for study. The learning content is also available online and is constantly updated, and many activities (such as solving assignments and collaborative work) take place on the platform, thanks to the aforementioned tools.
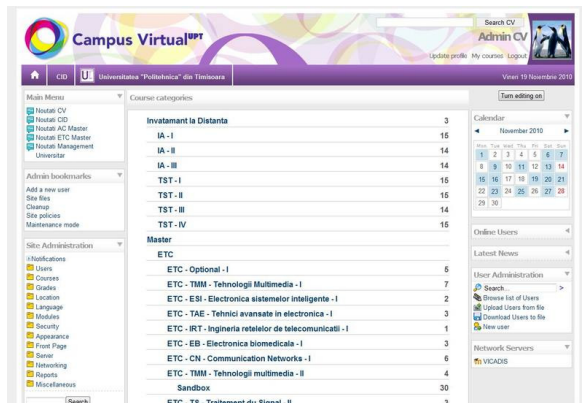

Fig. 2: The Virtual Campus Platform (CV)

I was the main author of the initial configuration of the platform, as well as the developer of new blocks (such as the "My Menu" block – a personalized and adaptive block which offers quick access to important areas of the platforms, such as relevant forums, personal blogs, profiles, etc.). I installed and adapted third-party modules, like the booking, attendance, podcast and OU blog modules, or the advanced user administration block – an indispensable tool for managing the large number of users currently enrolled on the platform, which I heavily modified to suit the needs of administrators of the platform. I also customized the core of the platform, by adding the possibility to define a proper title for the users, and by creating an archiving solution, which permits users to access all of their courses and resources from past years, for consultative purposes.

The CV platform is becoming increasingly important for the "Politehnica" University of Timisoara, because aside from the Distance Learning courses, beginning in fall 2010, all of the University's Masters' programs will have courses and users (students and professors) hosted on it.

Other activities on the Campus include the management of the students' final theses, by providing the administrative and pedagogical online support for choosing a theme, completing paperwork, and communicating between students and their coordinating professors.

Also, a national program for improving management in higher education uses the CV platform to provide resources and activities for its participants.

Future development which I intend to do for the Virtual Campus include a more adaptive interface from the regular users' point of view, including an interactive tutorial for a seamless introduction into the functioning of the platform for new users.

Other than the CV platform, students at the "Politehnica" University of Timisoara can also access the direct result of an international project that UPT coordinated.

ViCaDiS (or Virtual Campus for Digital Students – http://www.vicadis.net/campus) is an online application that anyone can use by joining a common virtual space shared by students and tutors from the six partner European universities.

Fig. 3: Virtual Campus for Digital Students – ViCaDiS

Each partner offers, besides general topics of discussion, courses in English with open registration. And by using a direct link between the two platforms (CV and ViCaDiS), students from the Center for Distance Education can use their CV credentials to join available courses or discussion groups. This experiment proved to be a success and a valuable experience to all parties involved.

I was actively involved in the deployment and customization of this platform (also based on moodle), and in the installation and management of courses, blocks, and third-party modules that are currently used.

VI. CONCLUSIONS

The type of learning described above doesn't represent a pure example of e-Learning. Students from the Center for Distance Education still participate at a minimal number of face-to-face activities, and take classical, hand-written exams. However, the vast majority of activities takes place online, using concepts, methods and tools specific to e-Learning, therefore we are dealing with a hybrid type of learning, called blended learning.

The Masters' programs are also classroom-based, and only use the platform as an auxiliary tool for managing the pedagogical processes.

This form of learning should be the goal of pedagogical reforms in classroom–based learning, meaning that traditional learning which occurs today in regular universities can benefit from the electronic means of learning, with additional material (pre-recorded classes, for instance), but mostly from the ideology of e-Learning 2.0, by shifting the focus of

the learning process, towards the learners. They should provide their tutors with constant feedback, and also complete creative assignments, that not only have instructional value, but also can prove to be valuable learning content for the future generations of learners.

And with the tools described in this article, the "Politehnica" University of Timisoara has taken the first steps towards this goal.

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