Training Higher Education Lecturers in Internet Technologies

CARLOS HERNANDEZ FRANCO, IGNACIO BOSCH ROIG, JORGE GOSALBEZ CASTILLO
Communications Department
Universidad Politécnica de Valencia
Camino de Vera s/n, 46022, Valencia
SPAIN
http://personales.gan.upv.es/chernan

Abstract: - The Information and Communications Technologies are making possible a new form to teach and to learn in a global context that cannot be ignored by the Universities. Their educative policies in the Information and Knowledge Society have to stimulate the creation of synergies between universities, departments, research groups, students, etc, not only in a national but in a new and wide international scope, which entail to an improvement in the quality and efficiency of the education process. The paper describes the creation of "e-workgroups" in order to implement an "e-collaborative" course related to using Internet technologies by different Spanish Institutions and Universities. This collaborative course was implemented making use of a free computing application for university and research environments or institutions.

Key-Words: - Information, Internet, Technologies, Higher Education, Collaborative Work, BSCW

1 Introduction

The Information and Communications Technologies (ICT) are making possible a new form to teach and to learn in a global and "interconnected" context that cannot be ignored by the university world, stimulating the creation of synergies between universities, departments, research groups, students, etc, not only in a national but in a new and wide international scope. The Bologna process establishes the construction of the Higher Education European Space among different countries belonging to the European Union [1]. This complex and wide process will reframe the roll of the teaching staff "now" facilitating the learning process and "tomorrow" fomenting at any moment the participation of the students: "learning to learn" is the main goal to reach.

In the following sections we are going to describe the creation of "e-workgroups" in order to implement an "e-collaborative" course related to using Internet technologies by different Spanish Institutions and Universities. This collaborative course was implemented making use of a free computing application for universities and research centres.

2 The "e-Collaborative" Work

2.1 Information technologies

Nowadays there turns out to be undeniable the impact that the ICT as element that allows the restructuring and the "redesign" of the form or way in that carries out any process or activity, have had on all the aspects of the society [2].

And the education, as fundamental element of this Information and Knowledge Society, neither can, nor has to, stay to the margin of all this impact. This process of restructuring and redesign that has begun does not limit itself, for example, to the utilization of a personal computer connected to Internet to give formation distantly, or to the auto holding learning, or to the creation of Virtual Campuses, etc, but also to the own way of giving the presence education.

All this provokes that the teacher should modify the way in which he relates to the students who go, or "e-assistance", to the class, magisterial lesson, practical class, session of laboratory, seminar, etc. Nowadays, the Universidad Politécnica de Valencia (UPV) develops a plan of actions directed to the promotion of the European Convergence [3], for example outlined the utilization of the platform "**PoliformaT**", http://poliformat.upv.es, Fig. 1.
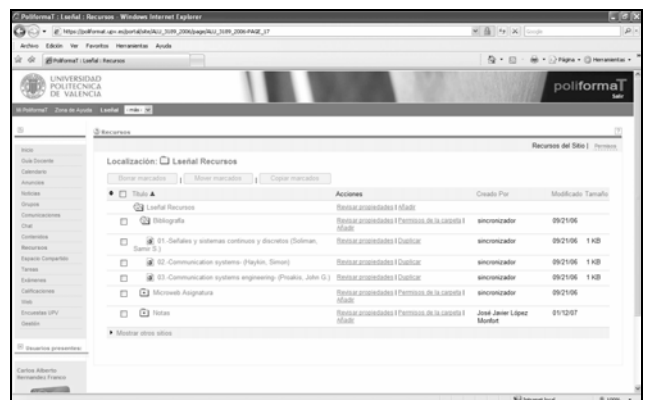

Fig. 1 Technological Platform "PoliformaT"

In the same line of educational innovation with PoliformaT's tools, the technological platform "Polimedia", developed by the UPV, facilitates the production and distribution of contents multimedia for the distance learning, Fig. 2. Between the principal characteristics of the platform we find the following ones [4]:

- It's a system of production of educational materials of quality

- It turns out to be very adapted as support and complement to the presence and not presence education

- The author is the intellectual owner of the materials created with the same one

- Is of easy utilization, not needing the previous knowledge of audio-visual aspects

- The created content is available of immediate form for his distribution

- Is possible to use, in the presentation, any type of program or computer application

Fig. 2 Technological Platform "Polimedia"

Both technological platforms are to disposition not only of the University Community of the UPV but also for all those communities that relate of a form or other one to this institution across training courses permanently, master, workshops, etc.

In this respect, the Project "TELDE: e-learning for the development", www.upv.es/telde, it's connected and adjusts perfectly with the creation of synergies between universities, departments, research groups, students, etc, not only in a national but in a new and wide international scope, Fig. 3.

Fig. 3 The "TELDE" Project.

Among the aims of the TELDE Project we find:

- System of e-learning that is used by the Universities of the Valencia Community for the performances of cooperation to the development

- Produce courses of university level by means of multimedia technologies and it's diffusion across Internet and satellites, etc

- Broadcast of the courses across the technological developed platform, using the Hispasat satellites system, www.hispasat.com, with coverage in the whole Spanish America

2.2 Collaborative work

Traditionally university education has been based on the magisterial lesson, where the educative process is based on the explanations of the professor. He is responsible of providing knowledge and techniques to the students group to memorise and assimilate. Nevertheless, during the last years there is a strong tendency to introduce active and innovative learning methods in college where students have a more important role in the teaching/learning process.

Nevertheless, to develop a good collaborative work with useful results for the rest of the students the professor has to facilitate the knowledge of the matter, but also has to facilitate the methodology and tools for students to work in a collaborative way. Therefore, to teach to work in a collaborative way becomes an additional objective of the subject, course, etc. On the other hand, final evaluation should not only depend on the assimilated contents, but also on the attitudes developed throughout the process. Therefore it is important the pursuit of the activity of the work groups, as well as the valuation that each member has on the rest of the group.

The last item is important because it allows detecting special roles inside of the groups and can serve in the future to form balanced work groups. The development of the TIC has supposed the appearance of applications that facilitate the incorporation of collaborative education methodologies inside and outside of the classroom. At the same time, if these tools are used daily, it will cause that technological learning of the student will be more natural and simple.

Without a doubt, Internet has the main role in the TIC world. Thanks to this technology, it is possible "e-collaborative" in real time between members of different groups without physical meetings. Then, it is possible to "e-work" without being "here and now". Next, it is described a tool that facilitates forming work groups and their controls. So, the necessity of physical meetings is reduced and replaced by virtual meetings where the tasks made by each member of the equipment or work group are shared.

2.3 Basic Support for Cooperative Work

The computer application Basic Support for Cooperative Work (BSCW), developed by the Germany company GMD FIT, http://bscw.gmd.de, makes possible the creation and management of a common space between their members. , A hierarchical control is established to access and to control [5]. The members can accesses, share documents and projects, make discussions, schedule work… All the steps, movements, modifications… are always registered. These facts facilitate the pursuit and the continuous evaluation of the activity of each member of each group, in our case, professors and students.

The access to the common space is done through Internet using a navigator, similar to Web access. Then no additional resources are required (devices or programs). This fact constitutes a great advantage for collaborative education because it allows a common shared space of work, different schedules agendas, geographical dispersion of universities, different computer platforms, etc. This common space of work with BSCW can be lodged in the company GMD FIT servant or in an own servant. The last option is preferred since the application is free for university surroundings use.

The application registers all the activities that are made by the members of the common space of work, so it facilitates the pursuit and the continuous evaluation of the work of professors and students. It is possible to setup the application to send periodically "Activity Report" by means e-mail or by means Really Simple Syndication (RSS) service.

It is important to notice that communication protocol and the storage of the information is encrypted to guarantee confidence.

3 Internet Technologies Course

The learning process included the creation of "e-workgroups" in order to design and implement an "e-collaborative" course related to using Internet technologies by students from different Spanish Institutions and Universities.

The course had had an "e-planning" of 30 hours distributed in several "e-sessions" and "e-tutorial" during 4 weeks [6]. This collaborative course was implemented making use of the BSCW a free computing application described and relates in Section 2.3, Fig. 4.

Fig. 4 The Shared Space of the Course.

3.1 Contents

The technological themes, analyzed in a theoretical and practical way, were the following:

1. Blogs
2. Really Simple Syndication
3. Podcasting
4. Study case

3.2 Results

From the 19 of February to the 2 of March of 2007, beginning and ending of the course, the students were working in 5 Groups. Because of the use of BSCW, email, chats, blog, Fig. 5, and others technological tools, there were practically unnecessary meetings of the members of the groups.

Also, the teacher staff and each member would able to know in real time what was doing other students in the course, their partial results, etc. This capability was very useful because it allowed to interchanges ideas, etc.

It is very important to indicate that all contents created by the different groups, have been based on the philosophy of "copyleft" or licenses using the "Creative Commons", http://es.creativecommons.org, standard. In other words, we created and we make available to everyone our work, of course, establishing several considerations to be respected and take into account, for example:

- to **share** — to copy, distribute and transmit the work

- to **remix** — to adapt the work

- To **attribute**, non commercial, etc

Copyleft is still difficult to accept by the teaching staff and students in the different levels from education.

Fig. 5 The Blog of the Course.

3.3 Lecturers' Training

The introduction and use of ICT in our classrooms not only would be associated with a permanently teacher staff training, but with the students as well. In the UPV there are available a lot of courses in this direction. Through the "Instituto de Ciencias de la Educación", www.ice.upv.es, lecturers can receive a wide training in several learning subjects or topics.

4 Conclusion

At the moment, the ICT are doing possible "to expand" the classrooms, and the learning process itself, until a "new physical border" with a "non-temporary limit or scope" and "news relations" among teachers and students. This new form or way to teach and to learn takes place in a global context and the Universities would be adapted as soon as possible. From the UPV the use of diverse educative platforms is fomented as they are them PoliformaT and Polimedia.

References:
[1] González, Julia; Wagenaar, Robert, "*Tuning Educational Structures in Europe. Final Report - Pilot Project - Phase 1*", Universidad de Deusto, University of Groningen, 2003

[2] Hernández Franco, Carlos; Rubio Parrilla, Nieves, "*Enseñanza Colaborativa en la Sociedad de la Información*", V Jornadas de Informática y Sociedad (JIS), Universidad de Deusto, Bilbao, 2004

[3] Vicerrectorado de Estudios y Convergencia Europea, "*Plan de Acciones de Convergencia Europea*", Universidad Politécnica de Valencia, 2005

[4] Instituto de Ciencias de la Educación, "*Polimedia: Modelo de la UPV para la Producción de Contenidos Multimedia para la Teleeducación*", Universidad Politécnica de Valencia, 2007

[5] Fraunhofer FIT – Institute for Applied Information Technology, "*Basic Support for Cooperative Work*", 2005

[6] Appelt, Wolfgang, "*WWW Based Collaboration with the BSCW System*", Proceedings of SOFSEM'99, Springer Lecture Notes in Computer Science 1725, 1999