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## **A network monitoring tool for student training**

**Miguel A. Mateo Pla, M.P. Malumbres**  
**Departamento de Informática de Sistemas y Computadores (DISCA)**  
**Facultad de Informática (FI)**  
**Universidad Politécnica de Valencia (UPV)**  
**{mimateo,mperez}@disca.upv.es**

### *Abstract*

*Computer networks are an important element in any modern organization. Computer science students must be able not only to use the computer networks but also to tune them in order to maximize their performance. In our Computer Networks course (Computer Network Courses main page: <http://www.redes.upv.es>), we have introduced some laboratory sessions where students learn the TCP/IP protocol suite using a set of software tools.*

*This paper presents one of them, a network-monitoring tool, that was developed to help our students. This tool gathers the information that TCP/IP protocols exchange and displays it to the user in such a manner that it is easy to understand the behavior of TCP/IP protocol family. It has the following features: Free for students, simple to use and configure, it has a friendly user interface, and its design is based on educational purposes.*

**Keywords:** *Network monitoring, students training, Internet discovering, TCP/IP protocols.*

## **Tools for distributed learning at the University**

**Eduardo Luis Cardoso, MSc**  
**CEFE - Associate Director**  
**Universidade Católica Portuguesa / Escola Superior de Biotecnologia**  
**E-mail: [elc@esb.ucp.pt](mailto:elc@esb.ucp.pt)**  
**Rua Dr. António Bernardino de Almeida o 4200-072 Porto - Portugal**  
**Tel: 351-22-5580070 o Fax: 351-22-5580072**  
**Altamiro B. Machado, Ph.D.**  
**Full Professor - Head of Department Information Systems**  
**Minho University**  
**Portugal**  
**E-mail: [altamiro@dsi.uminho.pt](mailto:altamiro@dsi.uminho.pt)**

### *Introduction*

*It's widely accepted that network technologies, namely the Internet, offer great opportunities for innovation in teaching and learning, nevertheless, its integration in the curricula it's far from being reached (Aubrey, 1996). At the same time, it's important to take into consideration that the quick generalisation of technological solutions could*

prevent, and be a major obstacle, in the implementation of the best pedagogical practices in the teaching/learning process (Chaloupka, 1999).

Indeed, Internet/WWW functionalities can offer, to an instructor, flexible and powerful tools either for a "pedagogical enrichment" or a "pedagogical redesign" of the courses (Collis, 1997), where interaction can be developed based in tools for computer mediated communication (CMC). Those tools are emerging as effective ways to support educational collaborative approaches (Wolz, 1997), and promote active learning (Laurillard, 1993).

Integrated distributed learning environments, namely web-based, can offer the tools to design appropriate strategies giving the ground to build context rich virtual communities. Emphasis should be given to strategies where learning can happen within activity rich, interaction rich, and culturally rich social environments (Figueiredo, 2000). The goal should be the creation and development of learning communities, based on collaborative approaches in the teaching/learning processes.

Facing the take-up of Web-Based Learning Environments (WBLE) in the learning and teaching at Higher Education Institutions (HEI) as an innovation process, the major barrier seems to be the process of changing peoples behaviour (Lewis, 1998). But it is also arguable that HEI have to be themselves redesigned, to fully exploit the opportunities offered by learning technologies (Liber, 1999). Innovations promoted at a course level should so be articulated within a broader institutional level, leading to conditions to rethink the way in which HEI operate (Taylor, 1998).

## ANÁLISIS DE UNA EXPERIENCIA DE ENSEÑANZA VIRTUAL EN LA UNIVERSIDAD POLITÉCNICA DE CARTAGENA

Alejandro Gallego Rodríguez & Eva Martínez Caro  
Affiliation Universidad Politécnica de Cartagena

### *Abstract*

*En la Universidad Politécnica de Cartagena se realiza una investigación sobre gestión del conocimiento y su aplicación a la mejora de la calidad de la docencia universitaria, basada en la aplicación de las tecnologías de la información y la comunicación al desarrollo de un modelo de enseñanza que posibilite a la Universidad alcanzar mayor difusión y calidad en su oferta educativa. Se ha impartido un curso en modo virtual sobre Administración de la Producción a alumnos último curso de Ingeniería Industrial. En este trabajo presentamos los resultados de esta primera experiencia.*

**Key words:** *Comunicación, Conocimiento, Enseñanza, Información, Internet, Tecnologías, Virtual.*