

A technological related discussion on the potential of change in education, learning and training

Luís Manuel Borges Gouveia
CEREM research member
University Fernando Pessoa
Praça 9 de Abril, 349 P4200 Porto Portugal
(+351) 2-5506713; FAX: (+351) 2-5508269
lmbg@ufp.pt

This is a poster prepared based on the presentation material for a paper with the same name presented at the conference. The goal is to discuss the supporting role of Information & Communication Technology (ICT) in education activities and puts in context the impact that CSCW systems can have both in Open and Distance Learning and in general education, learning and training.

The NetLab concept is presented and used to support the paper positions and serves as the base to propose a roadmap to a virtual university setting.

1. PRESENTATION CONTEXT

At the end of the century education is on change. In particular, the high levels of students that miss presence classes and display a lack of interest to attend most of the subjects in their higher education is already a common problem for the great majority of european and north american institutions [1].

On-line applications in classroom education, a widespread trend in industrialised societies, can be distinguished from on-line education. The on-line education is now an important trend: in U.S., it has been estimated that 55 per cent of all the 2215 four-year colleges and universities have courses available off-site [2]. Many of the top-rated universities in the U.S. offer on-line degrees and act now as dual-mode education (providing on-campus and distance education) [3]. In Europe, the situation is different and although several universities have their programs the vast majority still lives in the "on-campus age".

What are the advantages of off-line campus? The main reasons are the convenience of place and time to learning, may be financially convenient for the student and rewarding for the educational institution [2]. But there is another reason that might contribute to the changing shape of the education needs. In fact, in a recent local inquiry [4] most of students reported that they want to work as soon as possible and they have a strong concern about their future jobs. They also declare that it will be better to pass shorter periods in on-campus activities and longer periods in a working environment. Many more studies reported similar situations where it seems to grow an idea of the usefulness

of longer period degrees: time is playing an important role, as more and more lifelong education is a requirement.

In the traditional school environment, the central mode of learning continues to be face-to-face interaction between teacher and learner, however with a growing influence of asynchronous technological gadgets such as e-mail, web published information, Internet access and the use of CSCW systems and VR techniques.

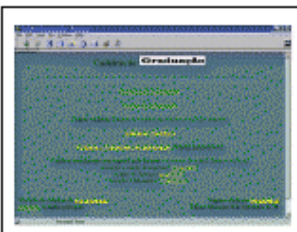
Based on this context the author proposes a roadmap to a virtual university where content and actual facilities in higher education institutions present a major advantage. The resources (human, location, facilities and knowledge database) can be used to shift from traditional face-to-face sessions to a broader offer of learning facilities integrating both on-campus and off-campus activities. These new offerings act also as an innovation vector to introduce shorter and more learner-oriented education settings.

The poster schema (figure 1) include some screen dumps, shown to serve as a demonstration web site to support teacher activity in classroom, the presentation and the paper version. The three top screen show the first pages (the root path with black background) and the general resource menu page. The third page is the class menu where all the disciplines for which the author is responsible are listed. The bottom three pages represents the information system class homepage (first), the available pedagogical texts and scientific publications where the author have some participation (the images represents partial web pages for that content).

2. REFERENCES

- [1] D. Puttnam. "Communication and education". The ninth Colin Cherry lecture. Imperial College, London, June 1996.
- [2] L. Gubernick and A. Ebeling, "I got my degree though e-mail", Forbes, 19 June 1979.
- [3] M. Bastos, "Globalisation and On-line Degrees: opportunities for students and threat to Universities in Developing Countries?". BITE98 international conference, March, 1998.
- [4] L. Gouveia, "Expectativas dos alunos em relação ao seu curso e saídas profissionais", UFP relatório interno, Fevereiro, 1998.

Figure 1 - the NetLab concept



new technologies for higher education

Let's build a digital campus
with a digital lab

lmbg@ufpr

A technological related discussion on the general changes in education, learning and training

What is this about?

- discussion of the supporting role of ICT in Information & Communication Technology in education scenarios
 - path to realize the impact of CCSI, Campus Digital and Virtual Reality, use from both in CCSI, Open and Distance Learning, and in general education, learning and training
- the NetLab concept is presented and serves as the basis for a project roadmap in a virtual university setting

The content

- an-lab application in classroom are a pedagogical tool in educational scenarios
 - 4th and 5th education (primary, secondary, tertiary and distance education)
 - the whole from primary, distance, middle and high school education (with large focus on ICT in high school 2000 figures)
 - post-graduate support and also on the social and cultural
 - what is the main goal? support from the social and cultural
 - focus of the research is centered on the social and cultural



A roadmap to a virtual university

- shift from a traditional face-to-face program to a broader offer of learning facilities incorporating both on-campus and off-campus scenarios
 - based on the university resources (people, facilities and knowledge database)
 - open sharing and other resources, but without sharing and more heterogeneous education settings
 - what is the main goal? to create a virtual university program, how is playing an important role in social and more learning education and improvement

The environment

- private higher education institutions
 - 4th and 5th, 2000 figures and an educational staff of about 20 people (distance learning)
 - if general facility, sharing an university in 4th in the emerging market of the facilities
- characteristics by a combination of:
 - a network with 4th and 5th primary, middle, secondary and tertiary education (remote education)
 - access to the network of Internet services
 - many different levels of learning, computer classes etc

The NetLab concept

- goal of the NetLab is to create a virtual university
 - only primary, middle and secondary
 - open sharing of the facilities
 - primary, middle and secondary facilities on the NetLab
 - what is the main goal? support from the social and cultural
 - focus of the research is centered on the social and cultural
 - what is the main goal? support from the social and cultural



NetLab contributions

- provide a platform and web knowledge oriented, knowledge communication oriented
- provide a platform for learning, research and research by sharing of technology, research, and provide space for multidisciplinary projects
- lead step in program and technology oriented and also support the research and development of ICT technologies in this activity
- knowledge that higher education institutions can utilize one of the major research products and have a program to continue to research that can be used and available

Get the potential users involved

- users have a crucial role in the technology adoption, with research results reporting a strong correlation between user satisfaction and usage behavior
- a proposal for the users involvement
 - what is the goal? to create a virtual university
 - what is the goal? to create a virtual university
 - what is the goal? to create a virtual university

Technologies

- need for a strong support to be effective
- use of the change and process management
- four questions arise when dealing with IT to enhance the NetLab
 - what is the goal? to create a virtual university
 - what is the goal? to create a virtual university
 - what is the goal? to create a virtual university



Why CSCI and CSOW

- once again about group learning
 - what is the goal? to create a virtual university
 - what is the goal? to create a virtual university
 - what is the goal? to create a virtual university
- group learning is a collection of individuals who have made specific decisions, and who perceive themselves as group members recognized by non members
- people working cooperatively in CSCI environments do work in groups in complex ways

Why CSCI and CSOW

- What are the reasons of cooperative learning?
 - cooperative methods lead to higher achievement than competitive or individualistic ones
 - cooperative learning increases the positive affect of education and students' learning experiences
 - more cooperative, they have personal objectives such as to be a good student, have to be a good student
 - cooperative learning leads to learning about the learning process

Why CSCI and CSOW

- CSCI as a study area, can be considered as a subtopic within the broader field of Information Systems
- with the use of CSCI systems we can extend the study of learning environments to other environments
- CSCI systems explore features:
 - group of people
 - how to use the computer network
 - an open and flexible learning environment
 - technology supporting the group activity



Why CSCI and CSOW

- the goal of CSCI is to discover ways of using computer technology to further enhance the group work process through support in the time and place dimension
- the focus of CSCI is the social interaction of people, not the technology

Conclusions

- the technologies
 - Internet and ICT based ODL are rapidly gaining popularity and importance in terms of providing lifelong learning - LLL
 - use of technologies like CSCI and VR can enhance collaboration, knowledge representation and developed systems that provided various experiences

Conclusions

- the systems
 - developing a chain reaction of products and services learning environment like the networkable sites
 - networkable sites are to prepare an educational agenda to involve in users
 - psycho-pedagogical studies in the educational field shows that students can learn from by managing, manipulating, and organizing the information in classrooms

