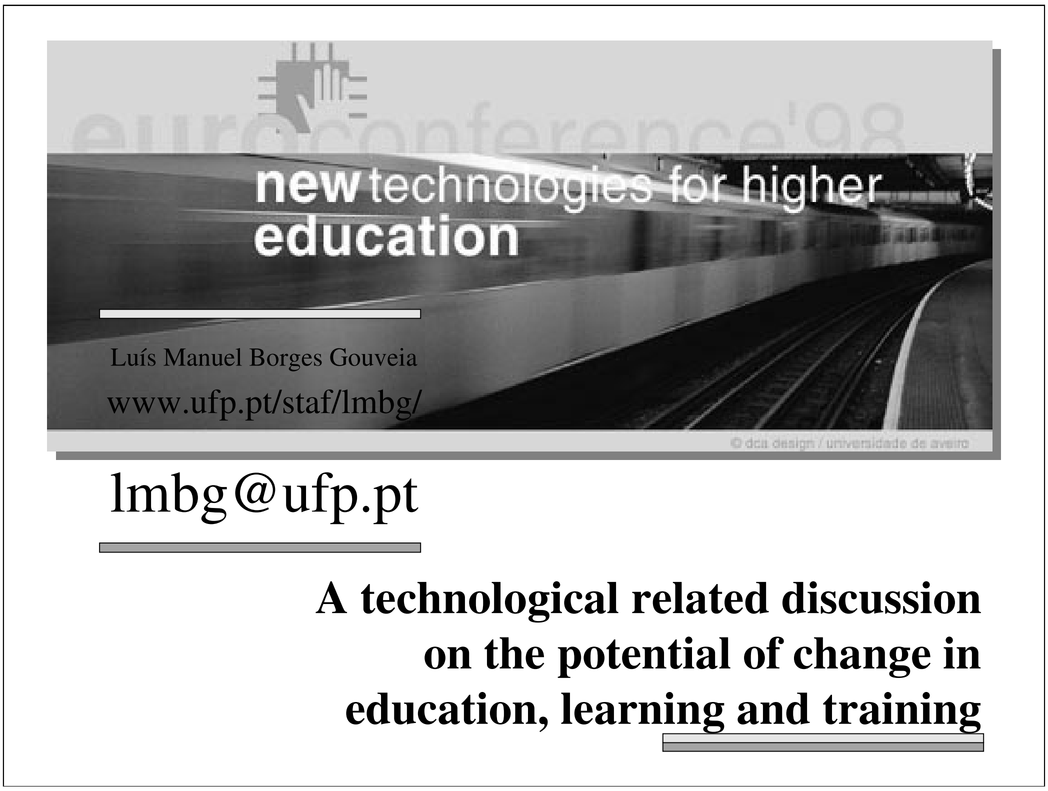


euroconference'98

new technologies for higher education

Luís Manuel Borges Gouveia

www.ufp.pt/staf/lmbg/

© dca design / universidade de aveiro

lmbg@ufp.pt

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

Euroconference’98 New Technologies for Higher Education, Aveiro

Universidade de Aveiro

16/19 September, 1998

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

Luís Manuel Borges Gouveia

What is this about?

- discussion of the supporting role of ICT - *Information & Communication Technology* - in education activities
  - puts in context the impact that **CSCW,** *Computer Supported Cooperative Work,* can have both in **ODL,** *Open and Distance Learning,* and in general education, learning and training
- the **NetLab** concept is presented and serves as the base to propose a **roadmap to** a **virtual university** setting

The context

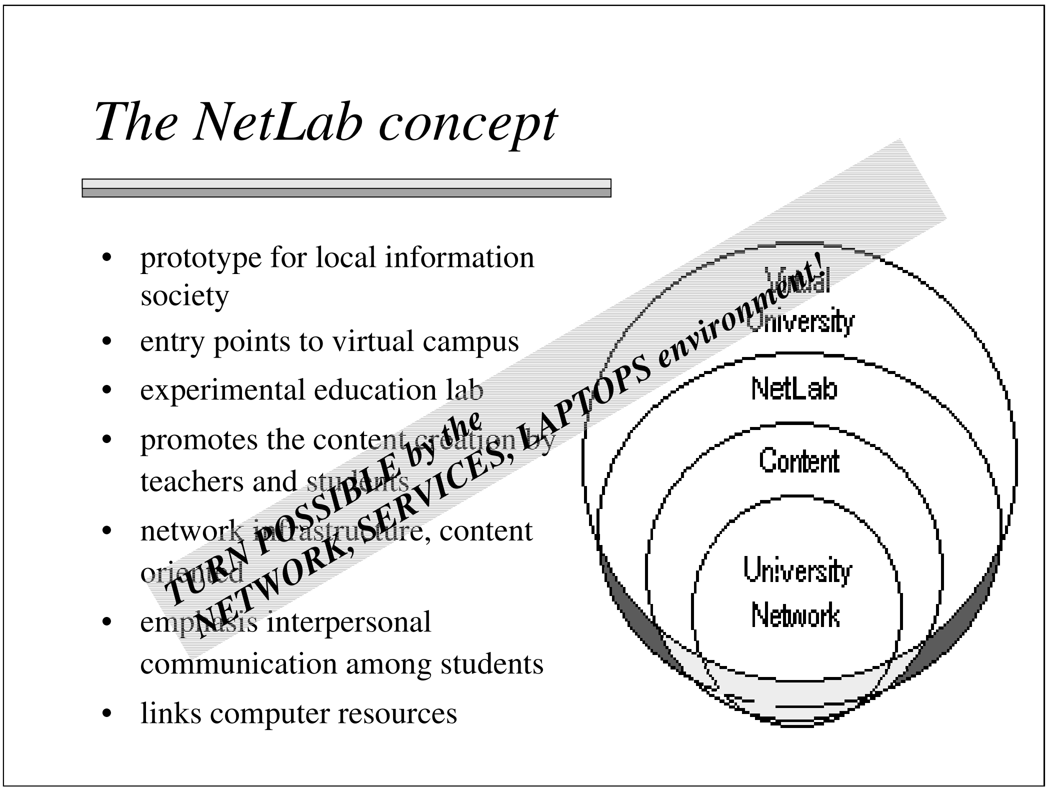
- on-line applications in classroom are a widespread trend in industrialised societies
  - dual-mode education is gaining acceptance (on-campus and distance education)
  - the ratio between print, electronic media and face-to-face sessions will change from 85:0:15 to 69:25:15 (fall 2000 figures)
    - print will not disappear and stays as the most used media
    - electronic media gains importance as a current media
    - face-to-face sessions remain with the same overall weight

A roadmap to a virtual university

- shift from traditional face-to-face sessions to a broader offer of learning facilities integrating both on-campus and off-campus activities
  - based on the university resources (human, location, facilities and knowledge database)
  - new offerings act also as innovations that introduce shorter and more learner-oriented education settings
  - rethink the time spend in consecutive periods in education programs; time is playing an important role as more and more lifelong education is a requirement

The environment

- private higher education institution
  - 4900 students, 380 teachers and an administrative staff of about 80 people (last academic year figures)
  - 10 years of history, starting as university in 94 as the merging result of two Institutes
- characterised by simultaneous presence of:
  - a network with 400 DHCP entry points, in labs, classrooms and social locations (1 access for each 6 users)
  - access to the most usual Internet services
  - every student has his own laptop computer (since 95)



The NetLab concept

- prototype for local information society
- entry points to virtual campus
- experimental education lab
- promotes the content creation by teachers and students
- network infrastructure, content oriented
- emphasis interpersonal communication among students
- links computer resources

TURN POSSIBLE by the NETWORK, SERVICES, LAPTOPS environment!

Every student can connect to NetLab using their own computer or through the campus facilities. Students will be able to use networked facilities, and set up projects on their area: Advertising, Marketing, Anthropology Studies, Communication, Business on-line.

The first year students of all courses have a notebook as a pre-requisite for entry university. Based on this entry specification the introduction of computers in the university day to day has changed dramatically.

The massive presence of notebook computers now takes part of the IT infrastructure of the University. This affect in news and diverse ways the needs and the use of a CWIS.

NetLab contributions

- is people-centered and not technology oriented;
- has a strong reinforcement in mobility;
- provides greater involvement between students and university by sharing of technology investments;
- provides a space for multidisciplinary projects;
- first step to prepare and prototyping on-line material and off-campus on-line courses and train teachers to integrate ICT technologies in their activity
- take advantage that higher education institutions constitute one of the major content producers and have a proper workforce to maintain these materials update and usable

Get the potential users involved

- teachers have a crucial role in the technology adoption with research results reporting a strong correlation between *curricular relevance* and *teacher interest*
- a proposal for teachers involvement
  - start using ICT in the development of their own learning materials;
  - take advantage of the laptop and network in their own classes;
  - use the network to communicate with students and other teachers;
  - become publishers and permanent developers of on-line material.

Technologies

- need for a strong support to be effective
- area of fast change and great setup costs
- four questions arise when dealing with IT to harness the NetLab:
  - connections: how can computers intelligently connect information seekers to sources?
  - utility: how can information access be complete, correct (precision), timely, transparent, authorised and secure?
  - system evolution: what architectures can best leverage rapidly changing information environments?
  - collaboration: how can groups of people and computers co-operate effectively over distributed networks?

Why CSCL and CSCW

- three issues about cooperation
  - defined as "acting together, in a coordinated way at work, or in social relationships, in the pursuit of shared goals..."
  - is seen as central to our everyday lives
  - cooperative learning is process driven
- a human group is a collection of individuals, who have interdependent relations, and who perceive themselves as a group that is recognised by non members
- people working cooperatively in CSCL environments do work in groups in complex ways

Why CSCL and CSCW

- What are the outcomes of cooperative learning?
  - cooperative methods lead to higher achievement than competitive or individualistic ones.
  - cooperative learning increases the positive affect of classrooms and students working cooperatively become more cooperative; they learn pro-social behaviours such as how to get with others, how to listen and so on.
  - cooperative learning fosters knowledge about the learning process

Why CSCL and CSCW

- CSCW as a study area, can be considering as a sub-topic within the broader field of Information Systems
- with the use of CSCW systems we can extend the study of learning environments to work environments
- a CSCW system implies four items:
  - a group of people;
  - their would-be cooperative activity;
  - an organisational context of some kind;
  - technology supporting the group activity.

Why CSCL and CSCW

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

Conclusions

- the technologies…
  - Internet and ICT based ODL are rapidly gaining popularity and importance as means of providing lifelong learning - LLL
  - use of technologies like CSCW and VR can enhance collaboration, knowledge representation and developed systems that provided vicarious experience

Conclusions

- the system…
  - developing a chain reaction of production/refining learning materials on line is the main NetLab's idea
  - a major NetLab concern is to propose an emotional agenda to involve its users
  - psycho-pedagogical studies in the educational field shown that students can better learn by managing, manipulating and organizing the information **on their own**

Luís Manuel Borges Gouveia
www.ufp.pt/staf/lmbg/

lmbg@ufp.pt

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