History and future of Technology-Enhanced Learning (TEL)

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- 19,000 students
- E-learning

250 fte CELSTEC
110 fte

Your mood

Time

Film at schools (1910)

Pressey testing machine (1920)
Educational radio (1930)

Educational tv (1950)

Groucho Marx

“Oh, I find tv very educational: every time the tv is switched on, I go to another room and read a good book.”

Skinner’s teaching machine (1960)

Audio cassette (1970)

Microcomputer (1980, 1990)

Video cassette (1980)
Intrinsic conservatism of Education
- Traditional and fragmented (Heinich)
- Culture of writing
- Art/Craft rather than a science (Bates)
- Teachers are lagging behind students (Estes)
- Pre-medieval apprenticeship model (Bates)
- Emphasis on instrumental IT for administrative purposes

Example of new technology

Causes
- Power: Innovations affect the power of teachers
- Direct costs: Change requires huge efforts
- Boundary conditions The inertness of operational business
- Culture: Teachers are the product of their own system

Rogers’ diffusion theory of innovations

Educational research versus teaching practice

Poor research reputation
- OECD, CERI-report (2000):
  - Educational research is insufficiently convincing.
  - Educational research is not relevant for practice.
- De Bie (2004):
  - “Researchers write for researchers”
- Reeves (2005)
  - “Randomised trials make no sense”
- Shaver (1983)
  - “Statistical significance is meaningless”
Research is lagging behind teaching practice

“Confirmations of the obvious”
“No prescriptive power”
“Technophobia”

But now: the internet (1990–…)

Marshall McLuhan:
“First we build the tools, …then they build us.”

Internet access

Pervasive technologies

Integrating technologies

Natural human computer interfaces
Cross-fertilisation of psychology and computer science

Maturity of TEL community

- FP7 call 5, Challenge 4.2 first separate TEL funding target
- STELLAR: TEL Network of Excellence
- ECTEL conference: continuous growth of volume
- The EU Commission’s report on “Shaping the ICT research and innovation agenda for the next decade” rated Education and Learning Systems among the top 5 most important societal challenges requiring ICT
- In USA, the Obama’s Administration proposed investments for education for the 21st century in which around $600 million for education-technology grants.

Web 2.0: Human empowerment

A new human species

The knowledge society

Why TEL will work!

- Large scale adoption of new technologies
- Fast moving pervasive technologies
- Integrating technologies
- Natural user interfaces
- Cross-disciplinary work
- Maturity of TEL research
- User empowerment
- Digital natives
- Crucial role of knowledge in today’s society
Thank you for your attention!

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