

CICERO GLOBAL CAMPUS
New Technologies Transforming Learning Practices -
The Social and Individual Learning Agents
8th Oct 2008

Pedagogical Challenge of the Information Society - **Future School Research**

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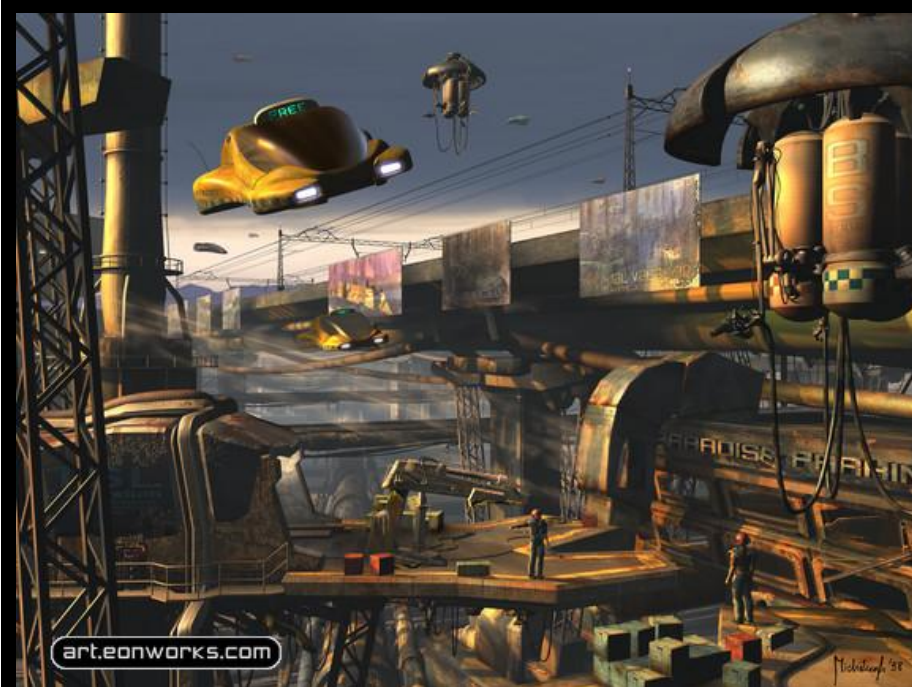
Deputy Head

Department of Educational Sciences and Teacher Education

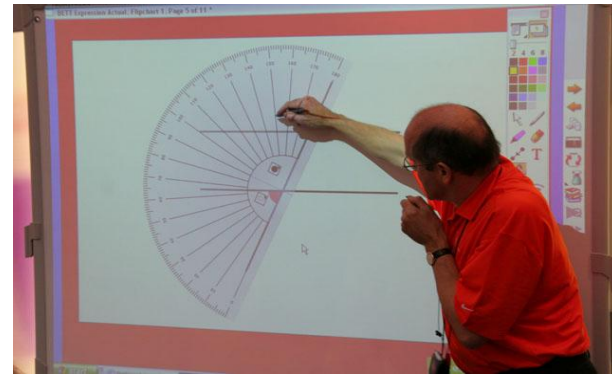
University of Oulu

Finland





Future



Future School





- **Descriptive approach**
 - Gathering data without any manipulation of the research context
 - Aims to describe the most probable future
 - Compare to 'predict', 'foretell', 'reading tea leaves / stars'
 - UTOPIA – Only one hypothetical picture of the future
- **Normative approach**
 - Aims at finding out not only how things *are*, but above all how they *should be*
 - Compare to 'planning'
- **Combination / Mixed approach**
 - Existing state of the activity as a starting-point for the research
 - Normative objectives

Future School Research

FSR Oulu Model

- **City of Oulu**

- Microsoft: Innovative Schools program
- Ritaharju Future School
- Smart School –pilots (10+)
- Smart Touch
- Shanghai World Expo 2010

- **University of Oulu**

- Faculty of Education / Department of Educational Sciences and Teacher Education
- Faculty of Technology
- Faculty of Humanities
- Department of Information Processing Science

- **Partners**

- ETEN – European Teacher Education Network
- University of Helsinki / CICERO Learning
- Science center Heureka
- City of Kalajoki
- ESF (ESR) – European Social Fund
- Corporation collaboration

UNIVERSITY of OULU
OULUN YLIOPISTO



Future School
Research



Future School Research -programme

FSR – Descriptive data

- PISA-results excellent, still lot of doing
- Education framework has changed
- Social connections are much more complicated than they used to be
- In principle school has not changed
 - Does not respond to the challenges of new era and modern students as consumers of new media (Suoranta, 2003)
 - Teaching is still teacher- and book-driven (Atjonen et al., 2008; Korkeamäki & Dreher, 2006)
- Finnish National Curriculum (2004) emphasizes versatile, student-focused methods and new learning environments



Educational Trends in Learning Practices

- Bulimic learning model (Lonka et al 2008)
- "Teach less, learn more" (Sahlberg 2008)
- Digital gap and inequity will broaden
- Most visible trends
 - Wide range of learning possibilities
 - Informal vs formal learning
 - Learning by doing will increase
 - Lifelong learning
 - Role of technology in education is emphasized



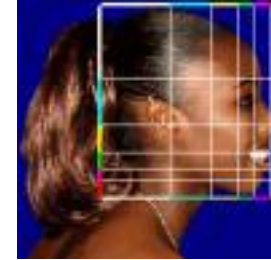
Role of New Educational Technology

- **Devided cognitive load** (see Hakkarainen, Lonka et al)
 - Socially, culturally and physically distributed cognition
 - Human beings & External thinking tools (written notes, simulations, computers, wikies, blogs, interactive white boards...)
 - Demanding tasks call for advanced tools and artifacts
 - Spread intelligence
 - Prosthesis / Artificial limbs of intelligent activity
 - Social web
 - Communal technology & Community of Practice
 - A group of persons with particular skills or expertise who interact in a type of networking
 - Jazz group improvising
- **Intelligent learning environments**
- **Changing identities (Castells 1997)**
- **Digital natives vs digital immigrants?**



Signals Adapted by Decision-Makers

- **Strong signals** (policymakers united)
 - Role of Information and Communication Technology
 - Personal learning
 - Student centrality
 - Global educational markets
 - Quality of teaching and learning
- **Quite strong signals** (policymakers quite united, but some spread)
 - E-Portfolios
 - Metaskills
 - Mixture of learning and worklife
 - Edutainment
 - Chargeable education
 - Global standards
- **Weak signals** (policymakers clearly spread, but can important)
 - Economical issues, some catastrophe might displace education, enterprise training
 - Private universities
 - Versatile identities and roles of human beings in information society



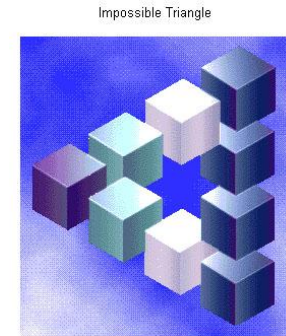
LEONIE-project, Sokrates / EU

Delphi-research: Social Trends in Educational Policies 2004-2014



How to Motivate Learners?

- **The 4 C's of Intrinsic Motivation** (Lepper & Henderlong 2000)
 - Challenge
 - Competence
 - Curiosity
 - Context
- An optimal experience: **FLOW** (Mihály Csikszentmihály)
 - Challenge and Competence in balance = Flow
 - Flash
 - Flow
 - Organized work



How to Build Innovative Learning Environments for the Future?

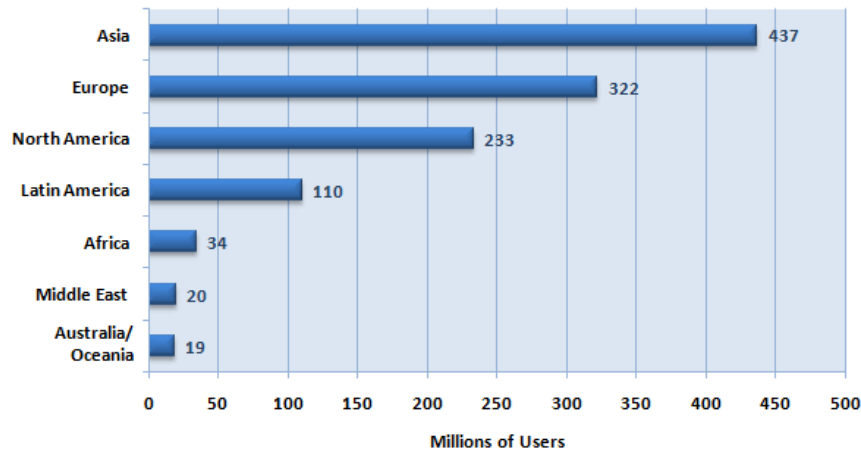
- Increasing understanding of agency and ownership in learning processes
- Authentic environments and contexts
- Promoting flow and understanding the interplay btw emotions and intelligence action
- Blended learning instead of eLearning
- Peer-to-peer interaction and collaborative learning
- Introducing new interactive technologies in teacher education
- Developing new learning environments
- Developing new social knowledge practices

(Lonka 2008)



Internet Penetration 2007

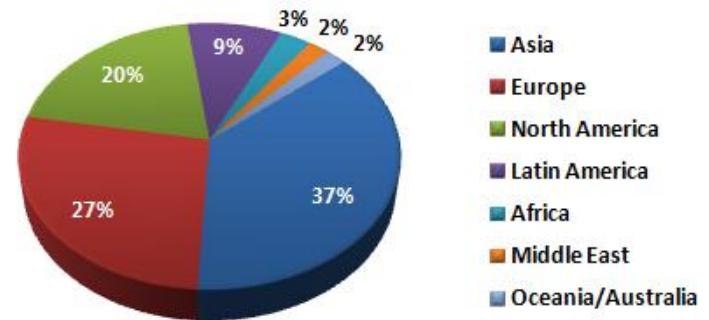
Internet Usage by World Region



Copyright © 2007, www.internetworldstats.com

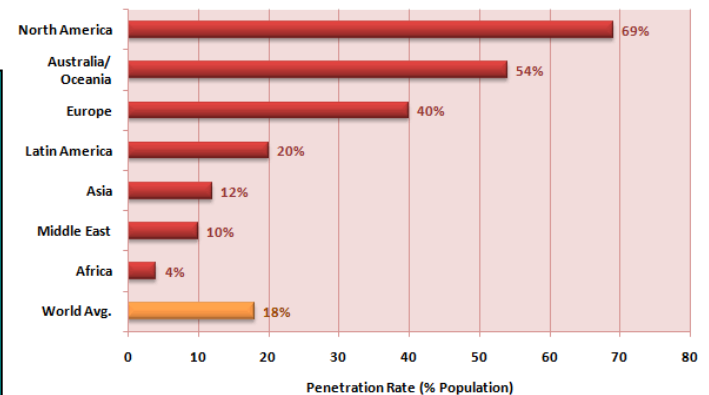
1,173,109,925 users
 17,8 % of global population (6,6 billion)
www.internetworldstats.com/stats.htm 30.6.2007

World Internet Users



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Internet Penetration by World Region

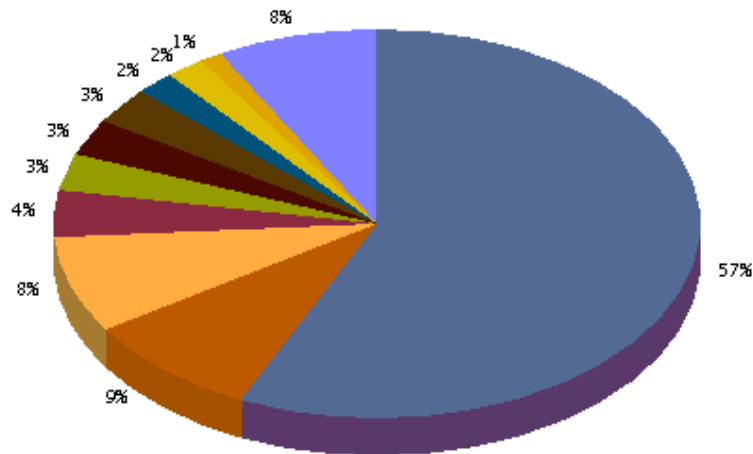


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Internet content: USA 55 %, Germany 6 %, Japan 5 %, England 3 %... (OCLC 2002)



Internet Genre, 27.8-2.9.2007



Genre	Impression
Email	32,265,854,000
Portals & Search Engines	4,959,389,000
General Community	4,283,495,000
General/National News	2,434,248,000
Sports & Recreation	1,842,772,000
Finance	1,501,137,000
Entertainment	1,489,384,000
Shopping & Auction	1,378,815,000
Local/Regional	1,143,845,000
Weather	803,782,000
Other	4,631,084,000
Total	56,733,805,000

See: www.nielsen-netratings.com



Techies at School

	General hobbyists	Gamers	Hackers
All school-subjects in average	8,19	7,94	8,40
Theoretical subjects	8,27	7,97	8,34
Information technology	9,48	9,10	9,74
Maths	8,18	8,15	8,50
Mother tongue (finnish)	8,27	7,87	8,29
1st foreing language (english)	8,64	8,46	8,74
Technology	8,20	8,16	7,89
Sports	8,03	8,31	7,63
Music	8,32	7,88	8,16
Arts	8,26	7,63	8,70

Young MENSA-members scoring average at school-subject **8,37**
(6-10) (*Uusikylä 1998, 72-73*)

(*Kumpulainen 2004, 153.*)



No more language studies!

Automatic translation is here!



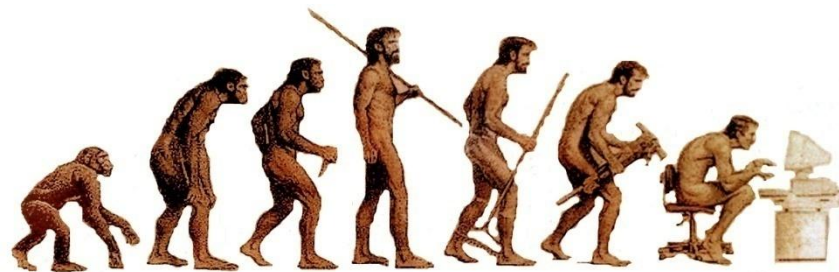
ILMA-ALUS Kauppa-apulainen

Epic Ilmailu kin lankut kotona veres ja käytetty ilma-alus. Polveutua veres Cessna Asuntovaunu jotta käytetty Skyhawks, me kanisteri arvioida te kotona asettaa istumaan -lta plataani -lta sinun haaveilla. Epic Ilmailu ymmärtää aina- ailahteleminen maailma -lta ilmailu, ja me kanisteri auttaa te hankkia ilma-alus että parhaiten kattaa sinun välttämättä. Antaa meidän ylänkömaa opetettu esikunta aikaansaada avulla te jotta määritellä sinun välttämättä, ja we'll auttaa hankkia aivan lentokone ajaksi te. Asettua yhteyteen meidän kauppa-apulainen departementti avulla sinun erityinen välttämättä nykyisin.



ICT – Global (Pros and) Cons

- Users' physical condition
- Display radiation
- User's mental wellfare
- Addiction
- Fragmented diurnal-rhythm
- Social exclusion
- Gaps: Generation, gender, education
- Internet hazards



Somewhere, something went terribly wrong



Future School Research -projects

- Literacy in the 21st Century
- FutureStep
- FutureStory
- **Smart Touch: Pedagogical use of NFC-technology**
- **Liikkeelle!** – Spatial orientation in pedagogical framework
- **Supporting Learning and Teaching in Future School**
- **From Violence to Careing** (Finnish Academy + Daphne)
- **FutureMath**
- **FuturePolice**

First Wave Projects



<http://www.youtube.com/watch?v=zqaPFAZS1K8>

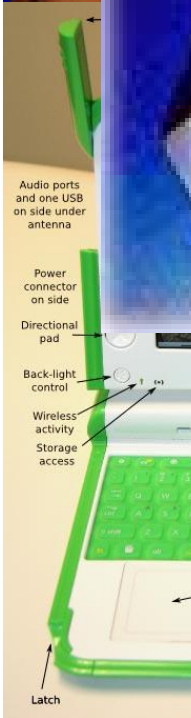
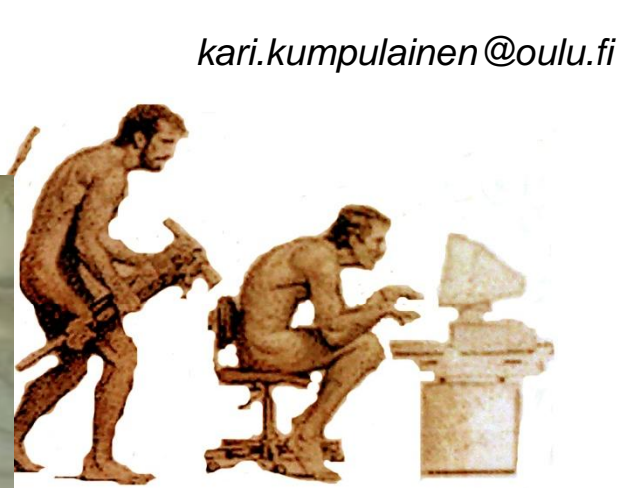


Do not force your children
to follow your habits,
they are meant
for a dissimilar time.

Sokrates

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DOCTOR FUN



Bill Gates' next book

19 Oct 99

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