

The Utopia Project

Main Research Findings

**Seppo Tella: Modern Communication and Information Technologies
in the Development of an Open Learning Environment. Part 2.
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(In Finnish with an English-language abstract)**

From the Teachers' Viewpoint

- ✓ tools for computer-mediated communication (e-mail, computer conferences, gopher, telnet, usenet news) (“telematics enhances a human being's normal intellectual capacity”)
- ✓ outdoing “ordinary” schools in the command of communication and information technologies
- ✓ stimuli, information, and models for debate and action concerning the teaching uses of ICT
- ✓ approaching sources of global information (thinking globally and acting globally)
- ✓ contacts near and far
- ✓ multi-directional social network (e.g., e-mail and computer conferences)
- ✓ an open, multimedia-based, networked learning environment (“virtual school”)
- ✓ integrating theory and practice (professionally active in using ICT)

From the Students' Viewpoint

- ✓ a ICT project (themes, specific tasks, teaching applications of telematics...)
- ✓ models for action, based on a constructivist conception of knowledge
- ✓ a shared thematic week full of activities: pupils as ambassadors, virtual school (“night at school”), virtual classes, e-mailing, “chatting” ...

From a School Subjects and Curricula Viewpoint

- ✓ communication independent of space and time
- ✓ communication being accelerated and adopting a multidimensional character
- ✓ available and useful in a number of school subjects and teaching methods (cooperative learning; self-regulatedness; autonomous learning; problem-based learning)
- ✓ usefulness of international communications networks varies in different subjects
- ✓ all subjects profit from ICT proficiency

From the School's Viewpoint

- ✓ models for debate and action; introduction of ICT into schools
- ✓ support given by out-of-school experts
- ✓ enhanced status of the school due to the profilisation process

From an Innovation Propagation Viewpoint

- ✓ models of action created within the framework of computer-mediated communication (CMC) and ICT in general can easily be adapted by other schools and institutes

Utopia recommendations

Modern Communication and Information Technologies in the Development of an Open Learning Environment. Part 2

A) Creating, Developing, and Maintaining an Open, Multimedia-based, and Networked Learning Environment

- ✓ establishing virtual classrooms (virtual school & distance education assignments; several teachers interested in developing ICT; solutions tested in virtual classes adapted for other classes)
- ✓ implementing advanced e-mail systems (multimedia e-mail, e.g., sending pictures & sound documents; computer-mediated fax; e-letters, etc.)
- ✓ enhanced co-operation between school, libraries, media and AV centres

- ✓ linking out-of-school experts to school activities (thinking integrated in various ways; ability to define new problems; increasing awareness of boundaries between information and knowledge; enhancing ability to assess one's own learning outcomes)
- ✓ upgrading and updating the school's hardware (technology as tools and as communications media)
- ✓ connecting all school computers to a communications network (common room; library; classrooms ...)
- ✓ from modems to permanent lines in LANs (progress calls for unlimited amount of communication and exact information about monthly costs)
- ✓ accessing international communications networks (Internet, Freenet, TeleSampo, Infotel, Edu.fi) (from school-monitored accounts to teacher- and pupil-monitored accounts)
- ✓ participation in several computer conferences, and developing teaching in a virtual school mode (follow-up of class discussions or lectures, mock tests, virtual exercises...)
- ✓ developing a networking learning environment at a number of levels

B) The Change Process of Teaching Practices, and the School as a Community

- ✓ training across school subjects and levels of schools (tolerance of information with multiple meanings; deeper comprehension and recognition of contexts; command of multi-strata and pluridirectional interaction; understanding change and growth; unity of emotional life and cognitive development)
- ✓ acknowledging the importance of the headteachers, and allowing them to train with their teachers
- ✓ allocating time for teachers to learn to make full use of ICT (telematics in particular) (preferably at school and during school time)
- ✓ new solutions for the class schedules (e.g., telelogic or communication hours)
- ✓ developing virtual school -type forms of teaching and studying (changes in teachers' and pupils' roles; restructuring the lesson)
- ✓ increasing learning and working situations using ICT (learning assignments based on a constructivist conception of learning; real-life problem solving tasks)

✓ ICT as tools, but also as instruments for documentation and assessment (e.g., a computer conference = a repository of new ideas but also an archive and a database for its users)

✓ underlining process- and self-assessment (instead of product-focused assessment)

C) The Change Process of Teachers' Beliefs, Preferences, and Attitudes

✓ increased awareness of the need for continuing education at teachers', pupils', and school level

✓ emphasised role of ICT in teachers' pre-service and in-service education (at the same time, importance of self-study, self-regulated experimentation, and personal-level insights)

✓ importance of teachers' being spurred to experiment with and autonomously use international telematic services, and to introduce authentic and up-to-date information retrieved from the networks into teaching (communications networks; databases; mailing lists; gophers; telnet; WWW ...)

✓ encouraging teachers to purchase a computer, a modem and communications software to be used at home—and also to think of home as a new telelogic learning environment (awareness of differences between office hours and leisure time; requirements set by family life not to be overlooked)

✓ accepting computer-mediated communication to integrate to one's new working environment, in which new kinds of assignments substitute for part of traditional work (attitudes toward e-mail tend to become more positive as its use increases)

✓ accepting telematic proficiency as part of teacher's new competence requirements (not only e-mail, but a broad command of computer-mediated communication, e.g., telnet, gopher, FTP, WWW ...)

✓ acknowledging resistance to change as part of school's democracy (building on pioneers' models—space and time for the others to follow suit, and an openness and tolerance for others to perhaps not follow CMC pathway at all)

✓ awareness of the influence exercised through teachers' and pupils' expectations, beliefs, attitudes, and proficiencies on the development of the school (insufficiency to *solely* develop teaching methods or practices or school organisation/structures)