

Technology-enhanced learning

WP 2011-2012 Objective 8.1 Technology enhanced Learning

Cultural Heritage and Technology-enhanced Learning
Unit
Information Society and Media Directorate General

The workprogramme 2011-2012

Challenge 8: ICT for learning and access to cultural resources

- Obj 8.1 : to develop technologies and methodologies that make people learn more effectively and support the acquisition of new skills.**

Objective ICT-2011.8.1

Technology-enhanced learning

Target outcomes

- a) Adaptive tutoring systems**
- b) Educational technologies for science, technology and maths**
- c) Workplace Learning (targeting, in particular, SMEs)**
- d) Creativity in learning processes**
- e) Exploratory activities**

Target outcome a)

Technology Enhanced Learning systems endowed with the capabilities of human tutors

Foci: Advance systems' capabilities to react to learners' abilities and difficulties and systems' understanding and use of the appropriate triggers (praise, comments, etc.) **influencing learning.**

Characteristics:

- use of **systematic feedback** based on innovative ways of interpreting the user's responses - particularly in relation to deep/shallow reasoning and thinking.
- improve learners' **metacognitive skills**, understand and exploit the underlying drivers of their learning behaviours.

Technologies: Natural language interaction (dialogues); rich and effective user interfaces; pedagogically sound; smart and personalised instructional design

Target outcome b1) Educational technologies for science, technology and maths

B1)

- Supporting students to **understand** and **construct** their knowledge and meanings of scientific, technological and/or mathematical subjects.
- **Characteristics of the solutions:**
 - **accompanying** the learners through the **complexity** of a subject (*technologically and methodologically*)

How?

- activating and feeding curiosity and reasoning
- support the creative applications of the theory

Instruments: STREP; NoE

Target outcome b2) Educational technologies for science, technology and maths

B2)

Supporting European wide federation and use of remote laboratories and virtual experimentations for learning and teaching purposes.

Output:

- Services enabling online interactive experimentations accessing and controlling real instruments, or using simulated solutions
- Stimulus to the growth of the network of labs
 - Open interfacing components for easy plug-and-play of remote and virtual labs

Research characteristics: user interfaces mediating the complexities of creation and usability of experiments, in pedagogical contexts - in primary and secondary schools, universities, etc..

Instrument: IPs that include large scale pilots.

Target c)

Advanced solutions for fast and flexible deployment of learning opportunities at the workplace (targeting, in particular, SMEs)

Context: networking/fostering (cross-) organisational learning and help SMEs to adopt and sustain effective learning attitudes.

Characteristics:

- faster, situated, just-in-time up-/reskilling
- lower the costs/efforts of production quality instructional material - in continuing education and training processes.
- novel business training models – understanding overcoming barriers to adoption - take up of the technologies

Focus: specifically on the needs of SMEs - in sectors without an established tradition in the adoption of learning solutions and - facing innovation and competitiveness challenges deriving from efficiency needs or new processes/products development.

Partnership: include SMEs /professional associations. SMEs users actively involved in pilots.

Instruments: IP

Target d) Computational tools fostering creativity in learning processes

Context: Creativity in the learning environments

Focus: innovative tools encouraging

- nonlinear, non-standard thinking and problem-solving
- exploration and generation of new knowledge, ideas and concepts, or new associations between existing ideas or concepts.

Application: supporting people's learning as well as the formation and evolution of creative teams

Approach: technological solutions that facilitate questioning and challenging, foster imaginative thinking, widen the perspectives and make purposeful connections with people and their ideas.

Instrument: STREP

Target e) Exploratory activities

Looking ahead – specific exploratory actions – 10+ years horizon - for:

Fundamentally new forms of learning through ICT

Networking and test-beds:

Establishment of a pan-European network of living schools for validations, demonstrations and showcases

Instrument: CSA

Expected impacts

- Stronger and smarter **adaptation and personalization** of educational technologies.
- **Engagement** in science, technology and maths,
- Timely and more **cost-effective up/re-skilling** through learning technologies and their sustained adoption.
- Emergence of **new learning models**, including models invoking creativity

Use of instruments, budget and call planning

- **Use of instruments** per target outcome
 - a) STREP; b) STREP/NoE (b1) and IP (b2); c) IP; d) STREP; e) CSA
- **Budget: 60 Meur**
 - IP/STREP: EUR 53 million with a minimum of 40% to IPs and 30% to STREPs
 - NoE/CSA: EUR 7 million
- **Call: 8**
 - **opens** 26/7/11 – **closes** 17/1/12

To know more

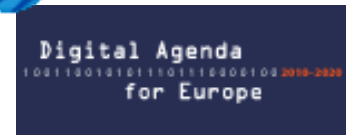
ICT research results

<http://cordis.europa.eu/ictresults/index.cfm>



Technology Enhanced Learning Research

http://cordis.europa.eu/fp7/ict/telearn-digicult/telearn_en.html



Digital Agenda for Europe

http://ec.europa.eu/information_society/digital-agenda/