



Study of the impact of technology in primary schools

steps.eun.org

Brussels – 25.06. 2009 – Anja Balanskat (EUN)

DRAFT, RESTRICTED CIRCULATION, NOT FOR FORWARD DISSEMINATION



Literature Review Analysis

Overview (60 studies reviewed,
2003- latest June 2009)

- Policy/Project evaluations
- Inspection reports
- Scientific Research
- Literature Reviews
- Topical Reviews
- Requirement studies
- Handbook



DRAFT, RESTRICTED CIRCULATION, NOT FOR ONWARD DISSEMINATION



steps.eun.org

Literature Review Analysis

Topics (Learners, Teachers, School)

General – Specific use of ICT

Home - School ICT use

Teachers use and Training

ICT and disadvantaged learners

ICT and the Curriculum

Virtual Learning Environments

Methods (measuring or assessing use and impact)

Large scale- small scale

Quantitative and/or qualitative research

Perception based surveys

Experimental control groups

Longitudinal studies

Case studies



steps.eun.org

Literature Review Analysis

Challenges

Complicated nature of reviewing ICT impact (definitions, what is measured, bias)



Solutions

Reference to individual studies
Impact definitions,
analytical framework

Accessing, identifying, describing studies other than in English, French, German, Italian



National Correspondents for selection,
common template for description

DRAFT, RESTRICTED CIRCULATION, NOT FOR OFFICIAL DISSEMINATION



steps.eun.org

Literature Review Analysis

Limitations

- A rich but not a complete picture
- No generalisation- specific context of the study
- Steps knowledge base
http://kb.empirica.biz/kb_steps/login.do
- Everything counts as evidence, but some weighs more than other.
- Terms used in studies



steps.eun.org

Findings- Learners

Impact

Discrepancy between home use of ICT and ICT use at school

- 86% vs 50% (OECD, 2005)
- Frequency of use: “especially children under 10 use the Internet more frequently” (KIM study, 2008 DE)
- Type of activities (fun vs. educational marked activities)
- High motivation to use ICT

BUT

- Underuse in schools
- Access:
«There are differences in the amount of access that pupils have to ICT depending on class and ethnic origin» (Instituto de Evaluación, ES, 2006)



Findings- Learners

Enablers- Role of school

- Balancing inequalities
- Exploit learner potential
- Diversity of tasks and open ended tasks
- Discovery and inquiry based learning rather than highly structured exercises

Model of balance “ Accompanied or promoted independence” (Feil, DE 2004)



steps.eun.org

Findings- Learners

ICT impact on skills and competencies

- Digital literacy
- Communication
- Language (first and second)
- Social and cognitive
- Situated and collaborative learning

BUT

- Differences between students
- Lack of basic computer skills



steps.eun.org

DRAFT, RESTRICTED CIRCULATION, NOT FOR ONWARD DISSEMINATION



Findings- Learners (1)

ICT impact on learning outcomes (control groups)

- Raising skills level and performance of students in poor disadvantaged areas and from a minority group starting from a lower level (HU)
- Positive impact on developing pupils' basic skills (elearning Nordic)
- Gains in maths, science and English for key stage 1, especially for girls (UK)



steps.eun.org

Findings- Learners (2)

ICT impact on learning outcomes (control groups)

- Test scores in science and English improve when using interactive whiteboards (UK)
- Digital picture books develop linguistic competences (NL)

• No differences in test scores (SK)



steps.eun.org

Findings- Learners

Enablers

- ICT rich constructivist learning environments
- Multimedia rich content and variation
- Extensive and experienced use of ICT
- Appropriate use of software and in coherence with curriculum objectives

DRAFT, RESTRICTED CIRCULATION, NOT FOR ONWARD DISSEMINATION



steps.eun.org

Findings- Learners

Enablers

- « In certain subjects the longer experience of teachers with interactive whiteboards the greater the likelihood of positive attainment gains »
- « The biggest impact happens when pupils have the opportunity to use the IWB individually or in small groups rather than as part of whole class teaching »

DRAFT, RESTRICTED CIRCULATION, NOT FOR ONWARD DISSEMINATION



steps.eun.org



Findings- Teachers (1)

Teachers are ICT optimists

- Judge ICT helpful for their teaching (more personalised and differentiated learning)
- Teachers in primary schools more often regard ICT as supporting their pedagogical methods than teachers in secondary schools (elearning Nordic)
- To motivate students, keep attendance and discipline

BUT

- Also slightly negative attitudes, complex ICT and no support
- Traditional thinking : importance of subject skills and knowledge
- ICT can cause interruption

Findings- Teachers

Enablers

- Step by Step integration and support
- Time and experience to realise gains

DRAFT, RESTRICTED CIRCULATION, NOT FOR ONWARD DISSEMINATION



steps.eun.org

Findings- Teachers (2)

Teachers use ICT for organisation and planning and less for teaching

- In Ireland the majority of teachers make some use of ICT in lesson planning (newly qualified teachers are more likely to use it for this purpose)
- Ediary system used by teachers in Estonia

BUT

- Decrease in instruction (ITU Monitor, 2007)
- The use of ICT for teaching and learning purposes is still limited especially in primary schools (elearning Nordic)
- Lack of pedagogical vision to integrate ICT effectively in teaching



steps.eun.org



Findings- Teachers (3)

- Evaluation of Teacher Training Programmes
- Important professional development tool
- Raised skills levels of teachers

BUT

- No translation into pupils' gains and pedagogical use of ICT
- Conflicting evidence: topic specific programmes or generic programmes for wider appeal

DRAFT, RESTRICTED (PROTECTED) NOT FOR ONWARD DISSEMINATION



steps.eun.org



Findings- Teachers

Enablers

- Competence of ICT use
- ICT use activity
- Attitude towards ICT use
- ICT access at home and at school

- Continuous training at all levels (in service, initial)
- On site training preferable to off site, support specific learning goals
- Inspiring educational practice
- Formal recognition



steps.eun.org

DRAFT, RESTRICTED CIRCULATION, NOT FOR ONWARD DISSEMINATION

Findings- Teachers

Enablers

“Different types of teachers
need
different types of support”

DRAFT, RESTRICTED CIRCULATION- NOT FOR ONWARD DISSEMINATION



steps.eun.org



Findings- Schools (1)

- Enhanced equipment, resources and Internet access in the last years
- Differences between small and large primary schools (equipment and lab)
- Different use of resources in primary schools (digital equipment, digital resources designed for teaching)
- Computers in classrooms to foster integrated subject use

DRAFT, RESTRICTED CIRCULATION NOT FOR ONWARD DISSEMINATION



steps.eun.org

Findings- Schools (2)

- ICT is part of the curriculum, but to various extent
- Use of VLE's and KMS mainly administrative, but increasingly used
- Primary schools use ICT for communication less so for organisation

- Not always well functioning ICT
- Low impact of ICT on knowledge sharing
- Overloaded syllabus
- Translation into pupils' gains and pedagogical use of ICT
- School collaboration (working in teams, interdisciplinary approaches)?

Findings- Schools

Enablers

- School leader willingness to integrate ICT
- Having time to assimilate knowledge sharing systems (several years)
- Instant and known support including pedagogy

Features of the digital literate school: (ITU Monitor, 2007)

- A framework
- Infrastructure
- An open culture
- Systematic educational practice

DRAFT, RESTRICTED CIRCULATION, NOT FOR ONWARD DISSEMINATION



steps.eun.org

Some Reflections

In some areas more evidence (e.g. teacher training)
than in others (e.g. collaboration)

Gap between potential of ICT – perceived impact – measured impact

Focus on the inputs (resources, equipment,)
then on use, fewer on the outputs of the systems or impact

We know a lot, but not everything, do we have to know everything?



«Notre monde est dominé par les chiffres, les statistiques les mathématiques et les sciences exactes alors que la vie est tout sauf exacte. Ce qui me guide, c'est la doute pas la certitude»

Paolo Conte



steps.eun.org

