Transforming teaching and learning
Some issues on innovation in school education
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European Schoolnet

European Schoolnet is the **network of 30 European Ministries of Education**. A not-for-profit organisation, we aim to support innovation in teaching and learning by working with ministries of Education, schools, teachers, researchers and industry partners.

European Schoolnet aims to support:

- **Schools** in the effective use of ICT in teaching and learning for all
- **Education reform** through working groups, studies and projects for policy-makers
- **Cross-border collaboration** - the European dimension in education

Through our activities, we aim to *transform teaching and learning processes*, using the integration of ICT as a force for improvement.
European Schoolnet was founded in 1997.

Based in Brussels, with around 65 staff.

The governing bodies of European Schoolnet are composed by Ministries of Education who are full members of the network.

Members: Austria, Belgium, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, and UK

Membership under consideration: Georgia, Iceland, Israel, Latvia, Romania, Bulgaria

Observer status: Germany
A FEW CURRENT PROJECTS
Presentation structure

• Where are Europe’s schools with ICT?

• What does innovation look like?

• The challenge of mainstreaming
The Survey of Schools: ICT in Education

Survey of schools: ICT in Education

This study collected and benchmarked information from 31 European countries (EU27, HR, IC, NO and TR) on the access, use, competence and attitudes of students and teachers regarding ICT in schools. ICT provision and use in European schools is improving but several obstacles remain. First, teachers still believe that insufficient ICT equipment is the biggest obstacle to ICT use in many countries. Second, whilst teachers are using ICT for preparing classes, ICT use in the classroom for learning is infrequent. Teacher training in ICT is rarely compulsory and most teachers devote spare time to private study. Third, students and teachers have the highest use of ICT and ICT learning-based activities when schools combine policies on ICT integration in teaching and learning. However, most schools don’t have such an overarching policy. Therefore it is not surprising that teachers generally believe that there is a need for radical change to take place for ICT to be fully exploited in teaching and learning.

Whole study

Survey of schools: ICT in Education

Previous study

e-Learning Policy Indicator - SMART 2005/0059

Data

Explore the data from the study

Country chapters

- Austria
- Belgium
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- Turkey
- United Kingdom
Huge national differences

Between 3 and 7 students per computer on average in the EU

Laptops, tablet and netbooks are becoming pervasive but only in some countries – between 8 and 11 students per laptop

2/3 of computers are located in computer rooms
Digitally equipped schools

37% (grade4), 24% (grade 8), 55% (grade 11g), 50% (grade11v) are in highly digital schools

No overall relationship between high level of ICT provision and student and teacher confidence, use and attitudes
The Survey of Schools: ICT in education

Student's ICT based activities frequency during lessons at grade 11 in general education (mean scores; 2011-12)

Students’ use of ICT during lessons not yet on a weekly basis
The teacher effect

Frequency of ICT-based activities according to teacher profile
(mean scores on a scale from 1 to 4, EU level)
Results of the answers analysis

Means through which teachers engage in ICT related professional development during the past two years (in % of students; EU level; 2011-12)

- Personal learning about ICT in your own time:
  - Grade 4: 70%
  - Grade 8: 74%
  - Grade 11 gen.: 72%
  - Grade 11 voc.: 71%

- ICT training provided by school staff:
  - Grade 4: 40%
  - Grade 8: 51%
  - Grade 11 gen.: 44%
  - Grade 11 voc.: 41%

- Participation in online communities:
  - Grade 4: 25%
  - Grade 8: 31%
  - Grade 11 gen.: 28%
  - Grade 11 voc.: 28%

A pleasant surprise (ie readiness, positivity)

Untapped potential
Three major findings

1. Infrastructure provision at school level varies considerably between countries – lack of it is still an obstacle to greater use of ICT in schools.

2. Use of ICT, as measured in the surveys, may not have risen as much as might have been expected.

3. There is no overall relationship between high level of ICT provision and student and teacher confidence, use and attitudes.
Two key policy actions

Strengthen public action at institutional, local, regional, national and European level to boost ICT use at school to reduce the gap between ICT use outside and inside school

1. Policy measures are needed to support ICT use in classroom:
   - Teaching scenarios as models?
2. Focus on pedagogical intentions for ICT use
   - To lead to a change in teaching/learning
3. Frequent use of ICT at school is the only way to develop students’ confidence in their digital skills
   - Frequent use out of school is not enough
Two major recommended policy actions

Increasing professional development opportunities for teachers in an efficient way

• Focus strongly on professional development as a lever

• Build policy measures on teachers’ readiness:
  ▪ More training in the pedagogical use of ICT?
  ▪ Focus on online learning communities as a new CPD model?
What does innovation look like?
Lessons from the iTEC project
Innovation in school education – a complex process

Potential systemic adoption of innovation

Self directed learning
Learning in and out of school
Flipped classroom

Pedagogy

IWB - 1:1 – tablets
Mobile learning
BYOD

Technology

Teaching processes

Education systems

Curriculum

Assessment

Digital textbooks
Open Educational Resources

eExaminations
Online laptops
Learning analytics

Governance

Autonomy – curriculum flexibility
Administration – Cloud computing
Validation of innovation

Innovative Technologies for an Engaging Classroom
Largest initiative in Europe (2,000 classes) on the
design of learning and teaching for the future
classroom http://itec.eun.org

Fully equipped, reconfigurable,
teaching and learning space
developed by European Schoolnet:
http://fcl.eun.org
iTEC has positively impacted in the classroom on:

**Students’**
- Knowledge, skills and understanding
- 21st Century skills
- Motivation, engagement and attitudes

**Teachers’**
- Technology-supported pedagogy
- Digital competence
- Motivation, engagement and attitudes
Evidence of Impact

2211 iTEC classroom pilots
Evidence of Impact

Carrying out iTEC learning activities had a positive impact on students’

- **63%** Attainment
- **82%** Active and Independent Learning
- **82%** Engagement in School Work
- **89%** Ways to Express Themselves
- **90%** Skills for Collaborative Work
- **90%** Development of Creative Skills
Evidence of Impact

Carrying out iTEC learning activities had a positive impact on teachers':

- 75% attending to students' individual learning needs
- 73% interest about own pedagogical practice
- 87% incorporation of new pedagogical practices
- 80% knowledge of the pedagogical use of ICT
- 75% knowledge of ICT
- 84% interest to use more ICT
Innovation in the classroom through iTEC

The difference between the maths lessons and the other lessons is that in these lessons we work a lot with Geogebra, with Facebook, and with Glogster and we record things and in other lessons we don’t. In the other lessons the most we can do is some work on the computer once in a while. (Portugal, student, C2)

- Pedagogically-led approach
- Increased effective use of ICT
- Introduced innovative technologies and tools
Sustainability: Learning Stories and Learning Activities

iTEC Learning Stories and Learning Activities provide concrete examples, emphasize innovation and flexibility, and encourage teachers to become learning designers.

I am convinced that iTEC is an innovation not only here, in our school, but also throughout Hungary. Finally, we have something useful in hand as we don’t have Learning Stories like that, which give us guidelines, step-by-step description and ideas. I feel strongly that this is something that fills a gap. So I’m pretty sure this will lead to more and more joining us who will incorporate modern technologies and use them in a deliberate way. (Hungary, ICT co-ordinator, C2)
Sustainability: the impact of the scenario development process

The scenario development process:
- is widely viewed as innovative
- supports curriculum planning
- brings a wide range of stakeholders together
- highlights new pedagogies and new technologies
- standardises approaches to developing and documenting good practice
- provides flexibility to respond to local, regional or national issues
The Eduvista Toolkit

Toolset 1 - Involving key stakeholders

Toolset 2 - Self-review: Innovation Maturity Model

Toolset 3 - Identifying trends

Toolset 4 - Writing a Future Classroom Scenario

Toolset 5 - Adapting existing Scenarios

Toolset 6 - Making effective use of a Future Classroom Scenario
## The Innovation Maturity Model

<table>
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<tr>
<th>Stage</th>
<th>Description</th>
<th>Details</th>
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</table>
| 1     | Exchange    | Localised use  
Technology used within current teaching approaches. 
Learning is teacher-directed and classroom-located. 
Learner as ‘consumer’ of learning content and resources. |
| 2     | Enrich      | Internal Coordination  
Technology supports a variety of routes to learning. 
Learner as ‘user’ of technology tools and resources. |
| 3     | Enhance     | Process redesign  
Teaching and learning ‘redesigned’ to incorporate technology, building on research in learning and cognition. 
Institutionally-embedded technology supports the flow of content and data, providing an integrated approach to teaching, learning and assessment. 
Learner as ‘producer’ using networked technologies to model and make. |
| 4     | Extend      | Network redesign & embedding  
Ubiquitous, integrated, seamlessly connected technologies support learner choice and personalisation beyond the classroom. 
Teaching and learning distributed, connected and organised around the learner. 
Learners take control of learning using technology to manage own learning. |
| 5     | Empower     | Redefinition & innovative use  
Technology supports new learning services that go beyond institutional boundaries. 
Mobile and locative technologies support ‘agile’ teaching and learning. 
Learner as co-designer of the learning journey, supported by intelligent content and analytics. |

### The stage of the innovation

**Review where we are**

**Toolset 2 - Self-review: Innovation Maturity Model**
Identifying trends

- A shift which can be documented and observed now, in the present, and is expected to continue.
- Trends in the wider environment.
- Trends in the school.
Developing scenarios

• Narrative description of learning and teaching that:
  – provides a vision for innovation and advanced pedagogical practice.
  – takes into account trends and challenges.
  – describes the roles of learners, teachers and other participants;
  – is not limited to the ‘classroom’.

• They allow us "to shape, not predict, the future" (OECD 2006).
Scenario creation

- Trends
- Challenges
- Maturity modelling
- Scenario building
  - Library of 50+ freely adaptable scenarios
Using the scenarios

• Action planning.
• Identifying resources.
• Developing specific teaching activities.
Mainstreaming challenge

Any new ICT in education project should be front-ended by the iTEC process so that those involved can really reflect on what it means to innovate with ICT before they start to focus on the particular technology in question.

We spent £1bn on technology, what we did wrong was we didn’t teach the teachers. We thought they would share best practice.

David Blunkett, UK Education Secretary 1997-2001

Help teachers to rethink teaching and learning before they open the technology ‘box’
The challenge of mainstreaming
The challenge of innovation in education

- Governance and leadership of innovation
- Scaling of innovation
- Initial and continuing teacher education
1: Governance of innovation - new role of ministries?

- Validating compliance with regulations, standards and expectations/targets
- Leading and supporting through change
- Guiding and advising schools
- Differentiating support to schools as they make their choices

Measure the change necessary at all levels of governance

Challenge of responsibility, accountability and assessment
2: Teacher training for the 21st century

A quantitative challenge

3,000,000+ missing teachers (UNESCO)

Also a challenge at EU level

60% of teachers above 40 years old

A qualitative challenge

« Efficient professionals »

New training models better preparing for practice
If a 5% annual increase in the education budget were targeted on professional development in these areas, it could have a huge impact on the quality of teaching, learning and achievement in all schools.

Sir Ken Robinson (November 2013)
3: Mainstreaming
From a few to many ... getting everyone involved

The pioneers and early adopters: being first, taking risks

The «Transformers»
...what’s possible

The majority:
what works for others

The “laggards”

No. of teachers

High

Digital confidence

Low

3% 75% 25%
Four recommendations

- Legislate to facilitate new practices
- Empower teachers to take up new practices
- Strengthen the evidence base of new practices (representative pilots)
- Nurture innovation through networks

Balance between top down and bottom up approaches
### Critical success factors

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<tr>
<th>Make it known</th>
<th>Recognition and time</th>
<th>Political decision</th>
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<tbody>
<tr>
<td>• Evidence demonstrating it can happen – practices videos</td>
<td>• Giving recognition and time to teachers</td>
<td>• No way backwards possible</td>
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Conclusion

- **The future classroom**
  - more a pedagogical than a technological challenge
  - will be everywhere: outside as well as inside the school
- **Complex issue**
  - technical integration obstacles to overcome
  - ... but more importantly processes
  - teacher appetite exists
- **Cooperation and comparison between countries**
  - indispensable laboratory of practices and analysis
  - sharing results of, for example, 1:1 initiatives
- **Research (and evaluation)**
  - more necessary than ever to support and guide a major evolution of our education systems
Thank you

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