Joint Research Centre (JRC)

Results from expert consultations on the future of learning

Yves Punie & Christine Redecker

Conference on Self-regulated Learning in Technology Enhanced Learning Environments: Problems and Promises, STELLAR NoE, 1 October 2010, University of Barcelona

IPTS - Institute for Prospective Technological Studies
Seville - Spain
http://ipts.jrc.ec.europa.eu/
http://www.jrc.ec.europa.eu/
Institute for Prospective Technological Studies (IPTS) is a Research Institute supporting EU policy-making on socio-economic, scientific and/or technological issues. It is part of the Joint Research Centre of the EC.
IPTS research on ICT for Learning

Learning Spaces
Future of Learning in knowledge-based society

2005-2008

eLearning
Development of eLearning in NMS (EU10)

2006-2008

Ageing
Active ageing and the potential of ICT for Learning

2008

Learning 2.0
Use and potential of social media in formal education to support innovation and inclusion

2008-2009

2009-2010
Creativity & Innovation in obligatory schooling

2009-2010
The Future of Learning
New ways to learn new skills for future jobs

2009-2012 LLL project
Tellnet
Teachers LLL Networks
Meeting future skills needs

In 2020, of all jobs
35% high qualifications
50% medium qualifications
15% low qualifications

Source: Cedefop, 2010

According to European companies, 90% of jobs in 2015 will require some sort of ICT skills (IDC, Nov 2009)
As our societies are changing…

we need to rethink E&T and to envision future learning that is more efficient, equitable, innovative and meaningful than it ever was in the past

Foresight is not about predicting the future but rather a tool for longer-term strategic thinking and priority setting based on collaboratively developed shared visions and scenarios
Key Questions

How will E&T meet future learning needs?

How can demand & supply of skills be matched?
### TEACHERS
- **Targeted consultations**
  - Workshop at eTwinning Conference, Seville, Feb 2010
- **Different approaches**
  - 4 working sessions
    - 35 teachers

### EXPERTS & PRACTITIONERS
- **Targeted consultations**
  - GCM Vision Building Jan 2010
  - Expert Workshop, May 2010
- **Different approaches**
  - Email
    - 3 sessions
    - 13 experts
  - Via LinkedIn a.o.
    - 4 rounds, 90 - 150 experts
  - 1,5 day of synchronous discussion
    - 15 experts

### EC POLICIES
- **Targeted consultations**
  - Scoping Workshop Sept 2009
  - Interim Workshop May 2010
- **Different approaches**
  - DG EAC, DG INFSO, DG EMPL a.o.
    - 2x circa 15 participants

### PLANNED ACTIVITIES
- **Online eTwinning Learning Event**
- **Online Dissemination & Validation**
- **MS educational policymakers**

### STUDENT COMPETITION
- **Student Competition**
### IPTS project on the future of learning

#### Targeted consultations
- **Workshop at eTwinning Conference, Seville, Feb 2010**
- **GCM Vision Building, Jan 2010**
- **Online surveys, Apr-May 2010**
- **Expert Workshop, May 2010**
- **Scoping Workshop Sept 2009**
- **Interim Workshop May 2010**

#### Different approaches
- **4 working sessions**
  - **35 teachers**
- **Email 3 sessions**
  - **13 experts**
- **Via LinkedIn a.o.**
  - **4 rounds, 90 - 150 experts**
- **1,5 day of synchronous discussion**
  - **15 experts**
- **DG EAC, DG INFSO, DG EMPL a.o.**
  - **2x circa 15 participants**

#### Planned activities
- **Online eTwinning Learning Event**
- **Online Dissemination & Validation**
- **MS educational policymakers**
- **Student Competition**
Views from experts (GCM)

One important change of Education in 20 years will be...

- **Group Concept Mapping**
- **13 Educational experts generated 203 unique statements**
- **Idea generation, clustering, ranking**
- **Individual – via email**
- **Clustering and rating of statements**

**TNO-NL, Open University NL and Attic Media-UK**


- Personalised, flexible, interactive learning
- Learner in control
- Stronger focus on job-related learning
- Formal education goes informal
- LLL: learning shifts to home, work, community
- Changing pedagogy: people learn differently
- Increased use of facilitators (tools and services)
- Recognise what people do and can
- Globalisation of education
- Institutions become enablers and connectors
- Teacher becomes also mentor, coach
- Open education and resources
- Use of technology for learning
A landscape of Future Learning

- Personalised, flexible, interactive learning
- Learner in control
- Stronger focus on job-related learning
- Institutions become enablers and connectors
- Formal education goes informal
- Teacher becomes mentor, coach
- Changing pedagogy: people learn differently
- Use of facilitators (tools and services)
- Globalisation of education
- LLL: learning shifts to home, work, community
- Open education and resources
- Assess/validate what people do and can
- Use of technology for learning
- Use of technology for learning
- Institutions become enablers and connectors
- Formal education goes informal
- Personalised, flexible, interactive learning
- Learner in control
- Stronger focus on job-related learning
- Teacher becomes mentor, coach
- Changing pedagogy: people learn differently
- Use of facilitators (tools and services)
- Globalisation of education
- LLL: learning shifts to home, work, community
- Open education and resources
- Assess/validate what people do and can
- Use of technology for learning
Lerner control: job-related learning

Institutions as enablers & connectors

Formal education goes informal

Personalised, flexible, interactive learning

Changing pedagogy: people learn differently

Globalisation of education

Lifelong Learning: learning shifts to home, work, community

Open education and resources

Use of ICT for learning

Assess/validate what people do and can

Use of facilitators (tools and services)
Changing roles of institutions, teachers and assessment

- Institutions as enablers & connectors
- Formal education goes informal
- Teachers as mentors
- Lerner control: job-related learning
- Lifelong Learning: learning shifts to home, work, community
- Changing pedagogy: people learn differently
- More personalised and job-related learning
- Globalisation of education
- Open education and resources
- Assessment: Recognise what people do and can
- Use of facilitators (tools and services)
- Use of ICT for learning

Central Place of Lifelong Learning

Importance of technology-enabled learning
TNO-NL, Open University NL and Attic Media-UK, in collaboration with IPTS
2. Personalisation

Emma is 16 and a good student who generally enjoys learning. However, school bores her. There are so many things she wants to know, to say and to do and no room to express herself. She can’t wait to get to university where she hopes to be finally treated like an adult.

Please rate the following statements (1=strongly disagree - 5=strongly agree):

“Open discussion on LinkedIn”

“Mini-survey”
### Learning profiles and individual needs

<table>
<thead>
<tr>
<th></th>
<th>Formal Learning</th>
<th>Non-Formal Learning</th>
<th>Informal Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Children &amp; Youth</strong></td>
<td>Quality &amp; Efficiency</td>
<td>Early School Leaving</td>
<td>Social Cohesion</td>
</tr>
<tr>
<td></td>
<td>Emma, 16, needs new challenges</td>
<td>Bruno, 14, skips school</td>
<td>Chanta, 8, feels lost in a foreign country</td>
</tr>
<tr>
<td><strong>Qualifying for a job</strong></td>
<td>Workers with no/low qualifications</td>
<td>Re-skilling</td>
<td>Labour Market Re-integration</td>
</tr>
<tr>
<td></td>
<td>Ingrid, 32, needs to enter a new job field</td>
<td>Martina, 59, needs to enter a new job field</td>
<td>Sven, 42, full-time father, looking for a job</td>
</tr>
<tr>
<td><strong>Skills development</strong></td>
<td>Transition from Higher Education</td>
<td>Up-skilling</td>
<td>Teacher Training</td>
</tr>
<tr>
<td></td>
<td>Joshua, 23, relevant degrees, but lack of key skills</td>
<td>Slavi, 55, wants to improve his management skills</td>
<td>Frank, 75, wants to pass on his knowledge</td>
</tr>
</tbody>
</table>
72% reject the statement that schools will disappear altogether and be replaced by learning opportunities that are integrated in life and society.

40% think that the existing structures of formal education and training will remain intact; 35% disagree

62% do not believe that standardised degrees and testing procedures will disappear.

90% assert that schools have to increase their efforts to open up to society and integrate real life experiences into their teaching practices.

No radical change for schools structures and standard assessment practices
78% think that, by 2025, schools will have implemented personalised learning plans.

88% argue that E&T institutions have to implement better monitoring and assessment mechanisms which detect individual learning needs.

82% assert that curricula need to take into account students' interests.

67% believe that more attention should be paid to general competences and transversal skills.

66% underline that learning needs to become competence based, rather than knowledge based.

Towards personalisation and competence based learning
The role of ICT

85% believe that technology will allow schools and educators to create tailor-made learning experiences which increase learning outcomes.

76% think that a range of technological tools will help [students] to design [their] own learning trajectory, combining face-to-face tuition at school with online university courses and online learning communities.

92% emphasize that the advantages of technologies need to be better exploited for personalising school education.

ICT enables personalisation and learner-centred learning
The role of Teachers and Trainers

71% believe that teachers will be guides, mentors, friends and partners in self-regulated, personalised and collaborative learning processes.

86% oppose to the supposition that online resources and digital tools will be so powerful learning sources that teachers are no longer needed.

58% doubt that teachers will be replaced by “learning coordinators” who are not directly involved in learning processes, but compile sets of learning tools.

Changing not disappearing, emphasis on pedagogical guide
87% expect that it will be normal that people will need to supplement their official qualifications with extra on the job training.

76% believe that it will be common for citizens to change their professional profiles completely, even repeatedly, over the course of their life.

87% think that people will need to become increasingly self-responsible for their own qualifications.

Lifelong learning; flexibility and change; self-responsibility
86% argue that skills and competences obtained in non-formal ways need to be better recognised and accepted as formal qualification criteria.

56% think that, by 2025, informal learning experiences will have been recognised as a valuable asset for a new job.

60% believe that people will be able to obtain official recognition of their skills by taking a standardised test.

84% assert that people with low qualifications should aspire to follow a training course to formally upgrade their qualifications to have more employment options.

- Validation of non-formal and informal learning but not only...
- Formal qualifications remain important
## Expert ratings on importance and feasibility

<table>
<thead>
<tr>
<th>Importance</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personalised, flexible, interactive learning</td>
<td>Open education and resources</td>
</tr>
<tr>
<td>Learner in control</td>
<td>Use of facilitators (tools and services)</td>
</tr>
<tr>
<td>Stronger focus on job-related learning</td>
<td>Use of technology for learning</td>
</tr>
<tr>
<td>Formal education goes informal</td>
<td>Recognise what people do and can</td>
</tr>
<tr>
<td>LLL: learning shifts to home, work, community</td>
<td>LLL: learning shifts to home, work, community</td>
</tr>
<tr>
<td>Changing pedagogy: people learn differently</td>
<td>Personalised, flexible, interactive learning</td>
</tr>
<tr>
<td>Use of facilitators (tools and services)</td>
<td>Teacher becomes also mentor, coach</td>
</tr>
<tr>
<td>Recognise what people do and can</td>
<td>Institutions become enablers and connectors</td>
</tr>
<tr>
<td>Globalisation of education</td>
<td>Changing pedagogy: people learn differently</td>
</tr>
<tr>
<td>Institutions become enablers and connectors</td>
<td>Globalisation of education</td>
</tr>
<tr>
<td>Teacher becomes also mentor, coach</td>
<td>Learner in control</td>
</tr>
<tr>
<td>Open education and resources</td>
<td>Stronger focus on job-related learning</td>
</tr>
<tr>
<td>Use of technology for learning</td>
<td>Formal education goes informal</td>
</tr>
</tbody>
</table>
High priority areas but more difficult to realise

Personalised, flexible, interactive learning
Learner in control
Stronger focus on job-related learning
Formal education goes informal
LLL: learning shifts to home, work, community
Changing pedagogy: people learn differently
Use of facilitators (tools and services)
Recognise what people do and can
Globalisation of education
Institutions become enablers and connectors
Teacher becomes also mentor, coach
Open education and resources
Use of technology for learning

Importance
4.06
3.21

Feasibility
3.91
3.15
Confirmation of LLL as a key priority

Expert ratings on....

<table>
<thead>
<tr>
<th>Importance</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual &amp; social nature of learning</td>
<td>Open education and resources</td>
</tr>
<tr>
<td>Learner in control</td>
<td>Use of facilitators (tools and services)</td>
</tr>
<tr>
<td>Stronger focus on job-related learning</td>
<td>Use of technology for learning</td>
</tr>
<tr>
<td>Formal education goes informal</td>
<td></td>
</tr>
<tr>
<td>LLL: learning shifts to home, work, community</td>
<td>LLL: learning shifts to home, work, community</td>
</tr>
<tr>
<td>Changing pedagogy: people learn differently</td>
<td>Recognise what people do and can</td>
</tr>
<tr>
<td>Use of facilitators (tools and services)</td>
<td>Individual and social nature of learning</td>
</tr>
<tr>
<td>Recognise what people do and can</td>
<td>Teacher becomes also mentor, coach</td>
</tr>
<tr>
<td>Globalisation of education</td>
<td>Institutions become enablers and connectors</td>
</tr>
<tr>
<td>Institutions become enablers and connectors</td>
<td>Changing pedagogy: people learn differently</td>
</tr>
<tr>
<td>Teacher becomes also mentor, coach</td>
<td>Globalisation of education</td>
</tr>
<tr>
<td>Open education and resources</td>
<td>Learner in control</td>
</tr>
<tr>
<td>Use of technology for learning</td>
<td>Stronger focus on job-related learning</td>
</tr>
<tr>
<td></td>
<td>Formal education goes informal</td>
</tr>
</tbody>
</table>
ICT: feasible priority

Expert ratings on....

**Importance**
- Personalised, flexible, interactive learning
- Learner in control
- Stronger focus on job-related learning
- Formal education goes informal
- LLL: learning shifts to home, work, community
- Changing pedagogy: people learn differently
- Use of facilitators (tools and services)
- Recognise what people do and can
- Globalisation of education
- Institutions become enablers and connectors
- Teacher becomes also mentor, coach
- Open education and resources
- Use of technology for learning

**Feasibility**
- Open education and resources
- Use of facilitators (tools and services)
- Use of technology for learning
- LLL: learning shifts to home, work, community
- Recognise what people do and can
- Personalised, flexible, interactive learning
- Teacher becomes also mentor, coach
- Institutions become enablers and connectors
- Changing pedagogy: people learn differently
- Globalisation of education
- Learner in control
- Stronger focus on job-related learning
- Formal education goes informal
On relative importance and feasibility

- Changes in learning & teaching processes (learner-centred, informal and job-related) are most important but more difficult to realise
- "Lifelong Learning" (Lifewide Learning) and personalisation important "and" difficult to realise
- Technology-oriented changes are most feasible
Emerging future landscape...

Formal Education and Training

• No radical change for schools and its assessment practices
• Shift towards more personalisation, learner-centred learning, self-responsibility and competence based learning
• Changing role of teacher, emphasis on pedagogical guide

Skilling and workplace learning

• Lifelong learning and on the job training
• Flexibility, change and self-responsibility for learning & career paths
• Certification/validation of informally acquired skills

All strongly enabled by various and versatile ICT
Emerging future landscape...

How will E&T meet future learning needs?

• No radical change for schools and its assessment practices
• Shift towards more personalisation, learner-centred learning, self-responsibility and competence based learning
• Changing role of teacher, emphasis on pedagogical guide

How can demand & supply of skills be matched?

• Lifelong learning and on the job training
• Flexibility, change and self-responsibility for learning & career paths
• Certification/validation of informally acquired skills

All strongly enabled by various and versatile ICT
Multi-dimensional nature of “educational change”

- Different ways of learning and of teaching (pedagogical change)
- Changing roles of actors and institutions, shifting responsibilities (organisational change)
- Enabling role of technologies (technological change)
- Changing skills needs and competences (including digital competence) in society and economy (societal change)

To make learning more efficient, equitable, innovative and meaningful than it ever was
Thank you

yves.punie@ec.europa.eu