INSIGHTS FROM INTERNATIONAL WORK ON INNOVATIVE LEARNING ENVIRONMENTS

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BETTER POLICIES FOR BETTER LIVES

Why learning? Why innovation?

- Learning is at heart of 21st century knowledge societies & economies
- Even on conventional measures (e.g. PISA) far too many students are not performing well enough
- We are increasingly demanding of students; we expect 21st century skills, deep learning, lifelong learning
- Innovation is essential in a rapidly changing knowledge society and for meeting these demanding objectives

A project and a philosophy

- **“Learning Research”**

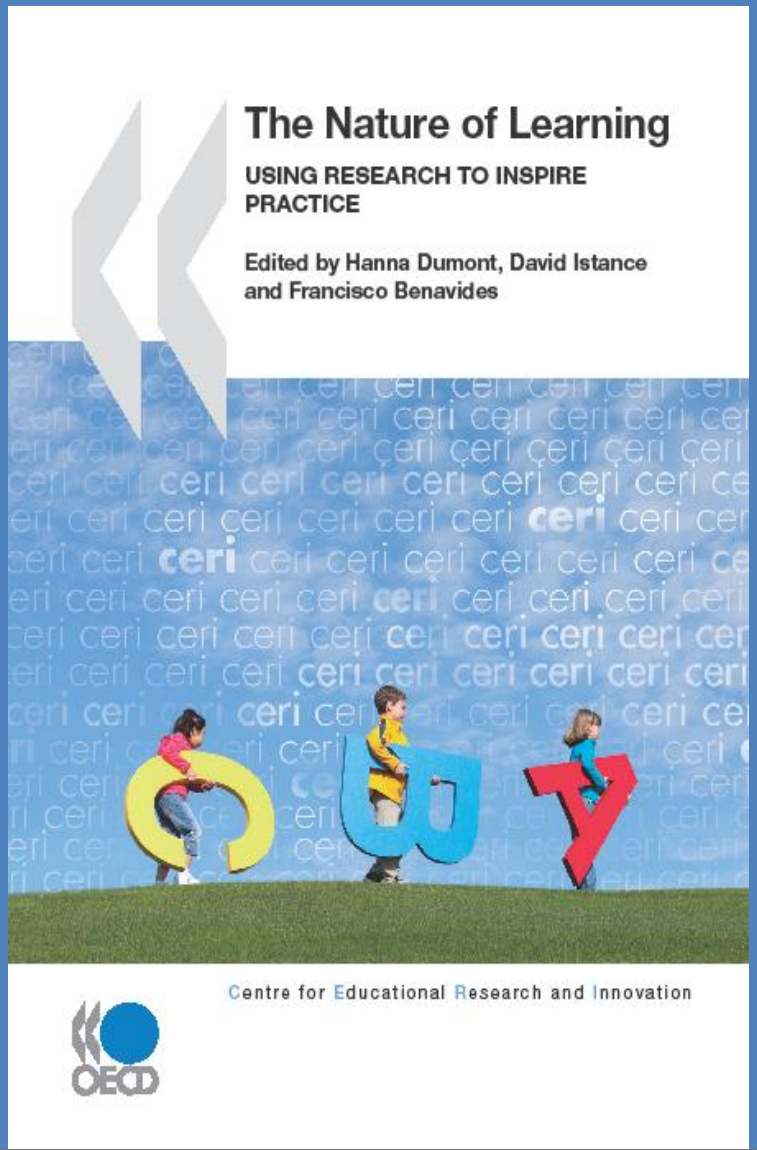
  (The Nature of Learning: Using Research to Inspire Practice, 2010)
- **“Innovative Cases”**

  (Innovative Learning Environments, 2013)
- **“Implementation and Change”**

  (Ongoing, Final Reports, 2014)

THE NATURE OF LEARNING

"*The Nature of Learning: Using Research to Inspire Practice*" OECD Publications, Sept. 2010, 338pp.



Learning literature review – implications for design for education

1. Analysing & Designing Learning Environments for the 21st Century

2. Historical Developments in the Understanding of Learning

3. The Cognitive Perspective on Learning

4. The Crucial Role of Emotions & Motivation in Learning

5. Developmental & Biological Bases of Learning

6. Formative Assessment

7. Technology and Learning

8. Cooperative Learning & Group-work

9. Inquiry-based Learning

10. The Community and Academic Service Learning

11. The Effects of Family on Learning

12. Implementing Innovation: from visions to everyday practice

13. Future Directions

“The Principles of Learning”

Learning environments should:

- Make learning central, encourage engagement, and be where learners come to understand themselves as learners (‘self-regulation’)
- Ensure that learning is social and often collaborative
- Be highly attuned to learners’ motivations and the importance of emotions
- Be acutely sensitive to individual differences including in prior knowledge
- Be demanding for each learner but without excessive overload
- Use assessments consistent with its aims, with strong emphasis on formative feedback
- Promote horizontal connectedness across activities and subjects, in-and out-of-school

All should be present, not just one or two!

WHAT ARE INNOVATIVE LEARNING ENVIRONMENTS? THE ILE FRAMEWORK

Why the term ‘learning environment’?

- We sought alternative concepts to the “school” and “classroom”
  - These are institutional units, not about learning *per se*.
  - So much learning takes place outside schools and, even within schools, outside “classrooms”.
- But schools are very important locations for learning
- So, a key aim is to help educators and leaders make schools more “learning focused”.

‘Innovative Learning Environments’ 2013

•Based on 40 case studies from 20 countries, (plus 85 self-report notes)

• Presents the ILE framework for designing powerful learning environments

•Extended extracts - innovations are ‘in their own words’, and bring the concepts and ‘principles of learning’ to life

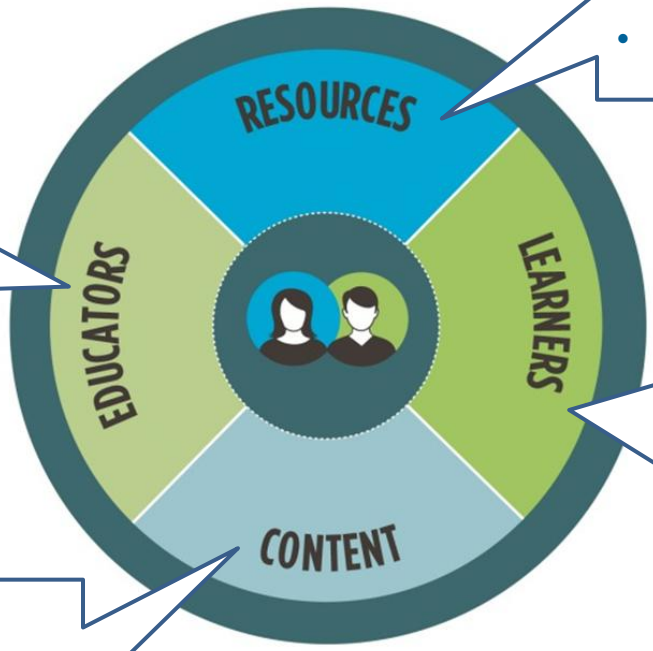
Innovating the **basic elements** of the ‘pedagogical core’

- The analysis of the case studies shows that rethinking the four elements of the "pedagogical core" - learners, educators, content and resources - is fundamental to the innovation of any school or learning environment

Innovating the **basic elements** of the 'pedagogical core'

Profile of 'teachers' may be innovated by adding:
- Volunteers
- Learning professionals
- Experts;
- Distant teachers
- Peer teaching

Innovation through which resources used and how used.
- Digital resources
- Use of learning space



Selection or outreach can alter learner profiles
Innovations include:
- Distant learners
- Parents as learners

Knowledge, competences & values. Innovations include:
- 21st c competences
- Languages, culture
- Interdisciplinarity

Innovating the **organisation and dynamics** of the 'pedagogical core'

- Innovating the Pedagogical Core's elements requires rethinking of the organisational patterns that deeply structure schools – the single teacher, the segmented classroom with that teacher, the familiar timetable structure and bureaucratic classroom units, and traditional approaches to teaching and classroom organisation.

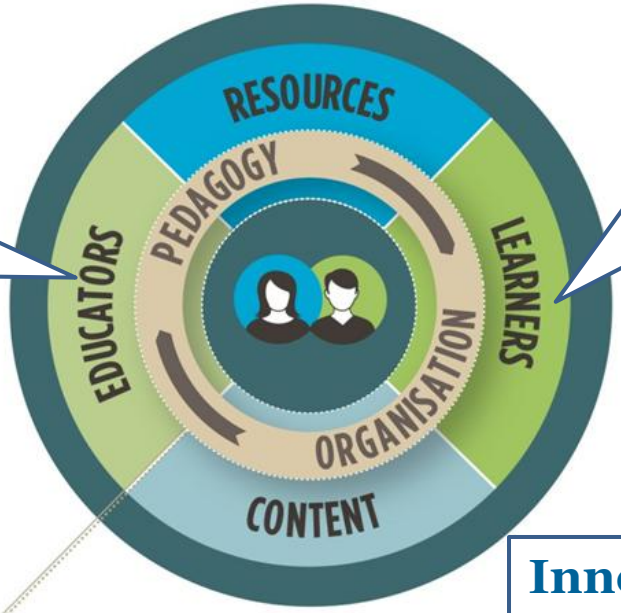
Innovating the **organisation and dynamics** of the 'pedagogical core'

Flexible and collaborative teaching

Team teaching to expand pedagogical possibilities
To target specific learners

Rethinking how learners grouped

Varying size & profile of learner groups
Smaller groups in larger groups
Mixed age groups



Rethinking learning time

Flexibility in timetabling
Personalised timetabling
In and out of school
To permit deep & collaborative learning

Innovating pedagogical options

Options include:
Inquiry-based methods
Tech-rich possibilities
Strong formative feedback
Remixing pedagogies

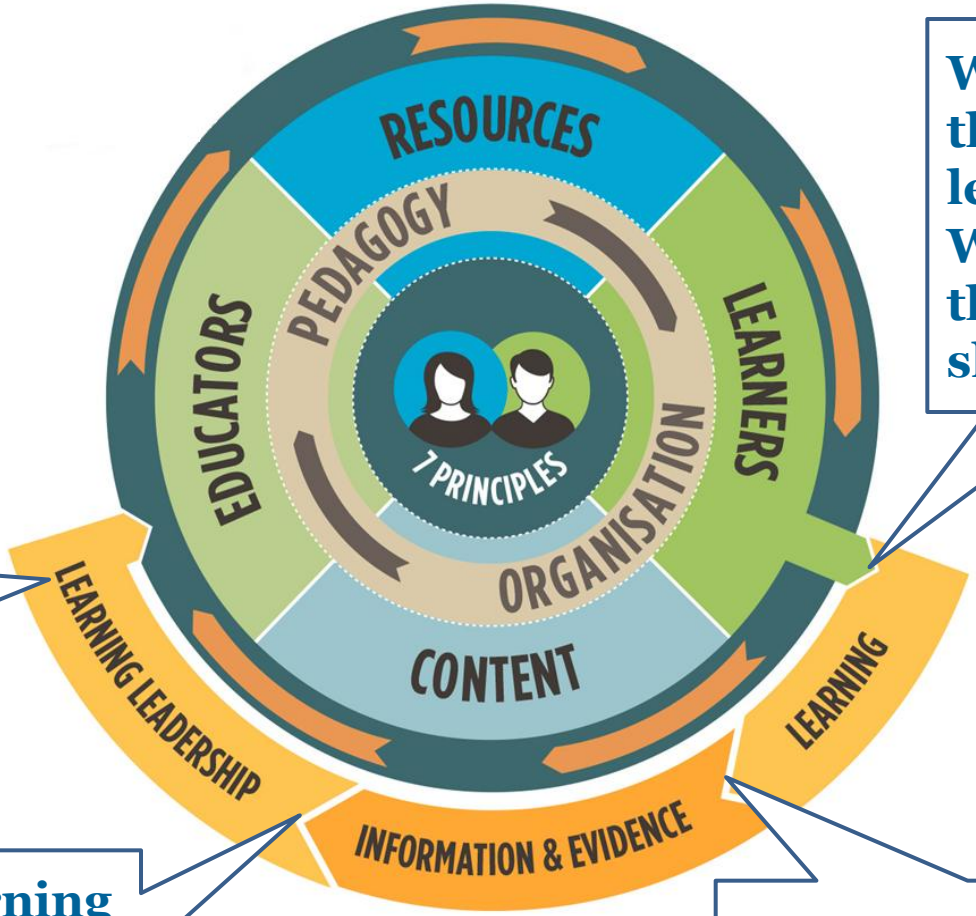
Organisation & pedagogy

- Groupings
- Use of time
- Pedagogy & Assessment

Learning Leadership and the Formative Learning Environment

- The analysis of the case studies also shows how learning environments can become “formative organisations” through strong design strategies with corresponding learning leadership, evaluation and feedback.

Learning Leadership and the Formative Learning Environment



What are the learners learning? What does the evidence show?

Who is leading decisions about teaching & learning?

How is the learning evidence used formatively?

How is evidence of learning made usable and accessible?

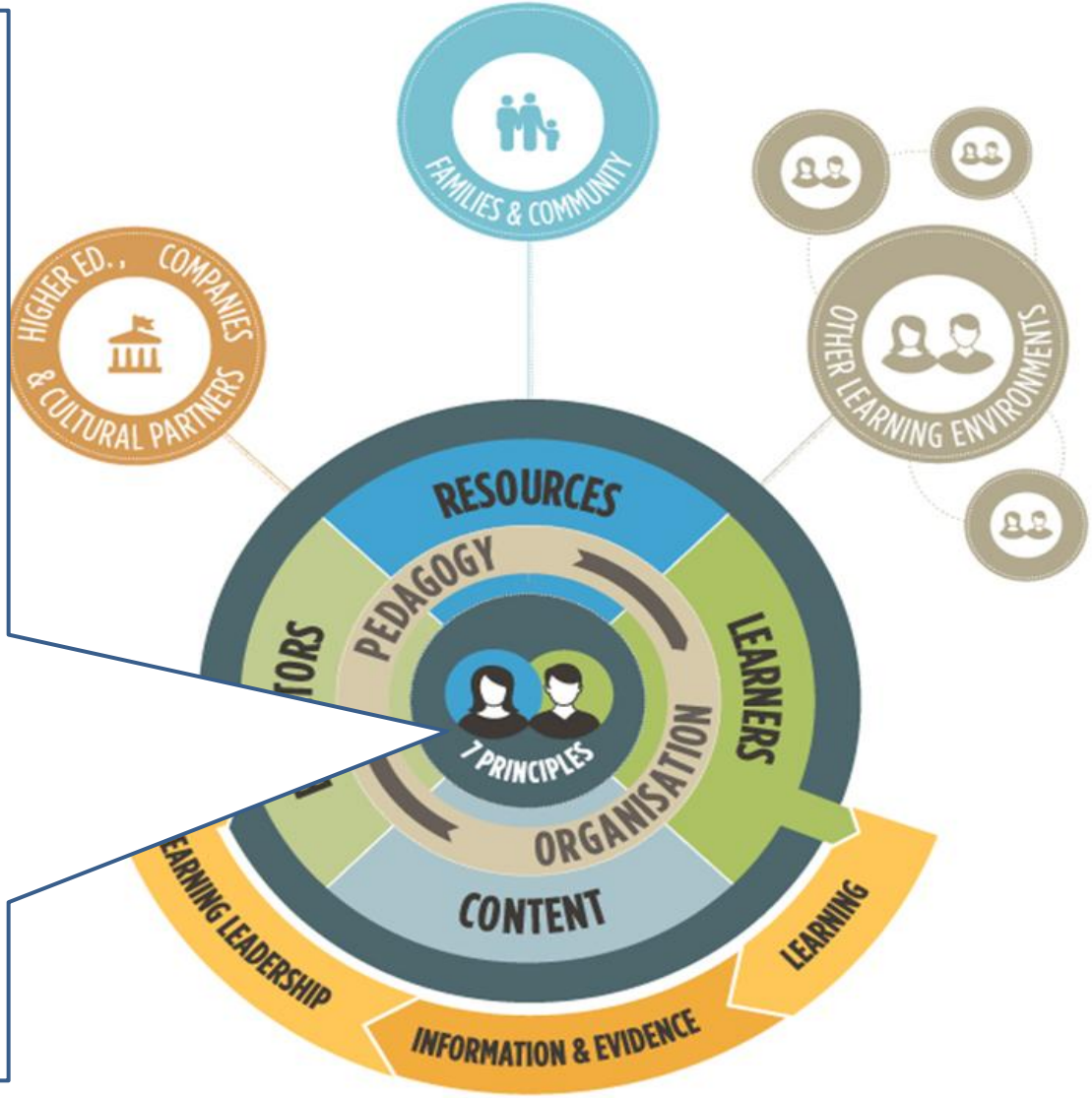
Partnerships enrich the pedagogic core, learning leadership and extend boundaries and capacity

- The analysis of the case studies also shows how opening up to partnerships helps grow social and professional capital, and allows for sustaining renewal and dynamism.

Partnerships enrich the pedagogic core, learning leadership and extend boundaries and capacity

All permeated by and designed to the 'principles of learning'

1) Learning and learner engagement central
2) Learning is social and often collaborative
3) Highly attuned to learners' motivations & emotions
4) Acutely sensitive to individual differences
5) Demanding for each learner, without overload
6) Assessment coherent with learning aims & emphasis on formative feedback
7) 'Horizontal connectedness' across activities & subjects, in- & out-of-school



21st century learning environments should

- Integrate and apply the ILE learning principles
- Innovate the “pedagogical core”
- Engage the “Design/Redesign” formative cycle
- Extend capacity through partnerships

- ICT and digital learning could enter the learning environment in numerous ways, at different levels; but there is no single technology effect or means through which it might reshape the nature of learning environments

Technology redefining the elements of the Pedagogical Core

Technology may recast all elements of the pedagogical core :

- Learners e.g. by bringing in excluded learners
- Educators - the online tutor or expert
- Content - ICT is extending materials well beyond textbooks
- Resources - digital resources, as well as ‘learning space’

Innovating the **basic elements** of the 'pedagogical core'

Instituto Escuela Jacint Verdaguer, Catalonia, Spain

- Integrated pre-primary, primary and secondary school.
- Emphasises learner autonomy, inquiry based and co-operative learning.
- Avoids using textbooks outside certain subjects.
- The teachers (facilitators of learning) design and prepare any materials used, mainly by means of the Moodle platform.
- The teachers also look for the best available resources: software, web pages, educational games, videos, simulations.

Technology innovating the core dynamics

Technology may also innovate the core dynamics:

- Contemporary learning environments use time more flexibly which goes hand in hand with individualised learning plans
- Virtual settings break down the notion that learning has to take place in a fixed place and at a fixed time
- ‘Mix of pedagogies’ enriched through digital learning

Innovating the **organisation and dynamics** of the 'pedagogical core'

Mevo`ot HaNegev, Israel

- Caters for 13-18 year old students.
- Shorter school week (5 days) and longer lessons (60 min).
- Emphasis on project based learning.
- The "virtual campus" school system enables every teacher to develop a course website.
- 500 virtual learning environments used to store learning products available *any place, any time*, and provide an ongoing communication between teachers and learners on the various courses and classes.

Technology Supporting Leadership, Design and Redesign

- A formative learning environment needs to be highly informed about learning that takes place with in it – “learning evidence”
  - ICT e.g. data management systems, online portfolio’s , online feedback by teachers, etc.
- Distributed leadership may also depend on ICT for communication and collaboration

Learning Leadership and the Formative Learning Environment

Australian Science and Mathematics School, South Australia, Australia

- Grades 10 to 12.
- Students work with an individual learning plan and an electronic portfolio.
- Students and parents can access a virtual learning environment that students use for group work and storing of materials.
- On campus of Flinders University.

Technology Opening up Wider Partnerships

- Creating wider partnerships is a defining feature of innovative learning environments through forging of alliances, partnerships and networks, while extending the environments boundaries, learning spaces and resources
  - Technology often integral part of and supports such widening of partnerships

Technology in the Learning Principles

- We have not singled out technology as defining a separate principle: learning research, as we understand it, does not suggest that ICT needs to be exploited as a condition for learning to be effective
- But, technology is greatly important - its creative and informed application can be seen to enhance all of the principles – far from reducing technology's centrality, the principles reinforce the argument for more and better use of ICT in contemporary education

Technology in the Learning Principles

For example

- Technology has repeatedly shown its value in engaging young learners (hence, reinforcing the principle “learner centeredness”).
- Technology can facilitate collaboration and joint learning, including through use of social media (hence, underpinning the “the social nature of learning” principle).
- Individual differentiation can be greatly facilitated through, for example, more systematic tracking of individual learning paths and performances (principle “sensitivity to individual differences”).
- Similarly, it can support formative assessment and feedback (principle “use of assessment strategies consistent with expectations”).

Innovative learning environments and ICT

- We live in a digital age – technology is not an option
- However, learning should not be “technology centered”, but instead should be “learner centered”, and if desired ICT enabled
- The presented ILE framework offers a frame to address the multiple roles and opportunities for ICT to innovate learning environments and enhance learning

GROWING & SUSTAINING INNOVATIVE LEARNING ENVIRONMENTS

‘Implementation and Change - strand’

Central question: ***How can innovative learning environments be developed, brought to scale and sustained?***

… includes data collection and analysis of ‘promising strategies/initiatives for spreading and sustaining innovative learning environments’

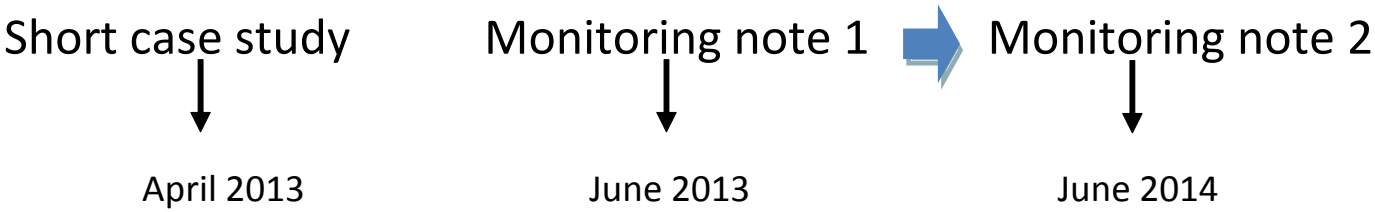
- Necessarily involve several and possibly many different sites
- Operated through time so that there is evidence of implementation
- Can be large scale reforms, but also other approaches

‘Implementation and Change - strand’

Work with ‘systems’:

- Over 26 involved
- 17 ‘in-depth case studies’
- Forthcoming report

Timeline data collection



Selection of 'systems' engaged in Implementation and Change - strand

'Systems' (country, state or organisation)	Reform/stategy/initiative
South Australia (Australia)	Department for Education and Child Development
Victoria (Australia)	School Improvement at Scale
Austria	New Secondary School
Fédération Wallonie-Bruxelles (Belgique)	Décolâge
Alberta (Canada)	Inspiring Hearts and Minds
British Columbia (Canada)	Networks of Innovation and Inquiry, Centre for Innovative Educational Leadership
Chile	Multiple initiatives
Finland	**Finnish National Board of Education**
France	Respire
Israel	Experiments and Entrepreneurship Division, MoE
Korea	Center for Multi-Cultural Education, Along with Hanul Club, Rainbow Chorus
Lego Education (Peru)	Lego Education Program in Peru
CONAFE (Mexico)	Intinerant Pedagogical Advisor
Union of Businessmen for Technology in Education (Mexico)	UNETE 2.0
New Zealand	Learning and Change Network
Norway	The Advisory Team
MIET/Zwazulu Natal (South Africa)	ICT in Education project
Spain	Curricular Integration of Key Competences Project
Sweden	Mother Tongue Theme Site
Ticino (Zwitserland)	School Improvement Advisor/Researcher
UNICEF (Former Yugoslav Republic of Macedonia)	Teacher Education Programme on Early Numeracy and Literacy

Growing and sustaining change

Selection of preliminary findings

- Culture change
- Capacity building & collaboration
- Communication technologies & platforms
- Change agents
- The importance of policy leadership to create favourable climates, conditions & capacities for learning leadership to flourish throughout the system

- Final reports end of 2014

SELECTION OF FINDINGS FROM OTHER OECD WORK

Selection of findings from other OECD work on technology in education

- "Innovation in a Knowledge Economy" (OECD, 2004) - four sources or "pumps" of innovation for organisations in different sectors of the economy, including to education:
  - *Modular reorganisation and specialisation*
  - *Engaging in and exploiting R&D*.
  - *Networking and sharing knowledge*.
  - *Technologies and technological advance*.
- An analysis of educational patents over the last 20 years shows there has been a clear rise in the production of innovative educational technologies.
  - 'But' the evidence shows this emerging industry targets non-formal and tertiary education, rather than primary and secondary (Foray and Raffo, 2012)

Selection of findings from other OECD work on technology in education

- Many of those considered ‘digital natives’ are not sufficiently ‘digitally literate’ yet (PISA)
- “Connected Minds” (OECD, 2012): Young people’s expectations as learners in relation to technology use in formal education seem not to be changing dramatically and they are not always comfortable with innovative educational uses of technology despite the social media and digital practices they otherwise engage in as young people.
  - This is not to say that they want no change as they do expect technology to be a:
    - a) source of engagement to make learning more interesting and relevant;
    - b) means to make school work more convenient; and
    - c) means to make it more educationally productive.

Selection of findings from other OECD work on technology in education

- A need for more systematic knowledge about technology in education, with an evolving framework for sustaining both top-down and bottom-up technology based innovations and appropriate capacity building, and well organised, easily accessible and up to date knowledge base(New Millennium Learners Project).

THANK YOU!

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www.oecd.org/edu/ceri/innovativelearningenvironments.htm