REFLECTIONS ON ICT IN EDUCATION POLICIES

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Why develop ICT policies?

- **Authentic development and assessment of competences**: revealing and documenting cognitive processes online.

- **Creative problem solving**: assessed → developed in computer-supported environments.

- **Supporting equity** through ICT: still a global challenge.

- **Evidence based policy making**: made possible through international assessment → modelling efforts.
Authentic development and assessment for evidence based policy making

PISA 2012: all 34 OECD member countries + 31 partner countries and economies, representing more than 80% of the world economy.

Cca 510,000 students, 15 -16 years.

Mathematics, reading & complex problem solving tests also administered online in some countries.

Student background questionnaire: familiarity with and use of ICTs included.
Authentic development and assessment: potential effects of ICTs

Framework for 21st century skills

UNESCO Competence Framework for Teachers / Standards
Microsoft Partners in Learning
IEA surveys: SITES 1, SITES 2, EUN ESSIE, OECD Skills Outlook 2013

Any role for social media? E.g. in foreign language learning: yes!

Of the 64 countries and economies with comparable data, 32 improved their reading performance between 2003-2012.

Intel® Teach
Jumpstarting 21st Century Learning

By Cheryl Lemke, Metiri Group
Commissioned by Intel Corporation
January 2012
Creative problem solving: any role for ICTs?

Exploring and understanding: searching for and understanding information; finding obstacles; interacting with the problem situation.

Representing and formulating: using tables, graphs, symbols or words; formulating hypotheses and mental models

Planning and executing: strategy to and execution of problem solving

Monitoring and reflecting on the solution, the information provided with the problem, or the strategy adopted.
PISA 2012: complex problem solving skills: assessed in computer-supported environments

Testing environment = online simulation
- interactive tasks
- thinking processes documented → used for qualitative / quantitative evaluation
Recognition of shapes and directions in space as represented by abstractions/pictograms.

Where is Benny going?
Follow the pictograms and the arrows!

**eDIA**: diagnostic assessment of competences,
Center for Research on Learning and Instruction, University of Szeged
GeoGebra Dynamic Geometry System used for manipulating models in virtual space
Supporting equity through ICT

OECD/Hungary Workshop
Budapest, Hungary, 12-13 June 2003

PROMOTING EQUITY THROUGH ICT IN EDUCATION:
PROJECTS, PROBLEMS, PROSPECTS

OECD
Organisation for Economic Co-operation and Development
OECD
HM Ministry of Education

The Hole in the Wall project revisited

Thierry Karsenti, Simon Collin & Toby Harper-Merrett

Background
The most recent addition to the PanAfrican network is a team of researchers from the School of Education, University of Zambia (UNZA). Led by Mr. Benson NDLOVU, a lecturer at the Department of Library and Information Studies, the Zambian PanAfrican team has joined the initial network of five study schools to share indicators on the Observatory at www.observatory.org.

New OECD project: Review of Policies to Improve the Effectiveness of Resource Use in Schools (results in 2015)

Promoting Equity Though ICT in Education.
OECD: Paris, 2004
Increased motivation: any role for ICTs?

PISA 2012: socio-economically disadvantaged students not only score lower in mathematics, they also reported lower levels of engagement, drive, motivation and self-beliefs.
More balanced school performance: any role of ICTs?

Increasing their shares of top performers AND reducing their shares of low performers:

• Italy, Poland and Portugal in **mathematics**, 
• Albania, Israel and Poland in **reading**, 
• Italy, Poland, Qatar, Estonia and Israel and in **science**.

• Australia, Canada, **Estonia**, Finland, Hong Kong-China, Japan, Korea, Liechtenstein and Macao-China **combine** high levels of performance with equity in education opportunities
Increasing resilience through ICT?

PISA 2012: some 6% of students across OECD countries – nearly one million students – are “resilient”, meaning that they overcome socio-economic handicaps and exceed expectations.

In Korea, Hong Kong-China, Macao-China, Shanghai-China, Singapore and Viet Nam, 13% of students or more are resilient and perform among the top 25% of students across all participating countries and economies.

Several policy options, sometimes applied in combination, can improve performance and equity in education, e.g.: target disadvantaged children through additional instructional resources or economic assistance.
Artistic creation

... developed through digital design and expression
What Makes Schools Successful? Resources, policies and practices!

Most countries and economies with comparable data between 2003 and 2012 have moved towards better-staffed and better-equipped schools.

PISA 2012 results show that beyond a certain level of expenditure per student, excellence in education requires more than money: how resources are allocated is just as important as the amount of resources available.
UNESCO IITE Policy Briefs, A. Khvoshilov, Editor-in-Chief

Intel Education Policy Guide and Online Policy Tool
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