Strategic debate on international assessments

IIEP, 15 December 2011

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Advisory of the OECD Secretary-General on Education Policy
OECD Directorate for Education
<table>
<thead>
<tr>
<th>Then</th>
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<tr>
<td>Learning a place</td>
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<td>Outcomes</td>
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**Then:**
- Learning a place
- Prescription
- Delivered wisdom
- Uniformity
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- Provision

**Now:**
- Learning an activity
- Informed profession
- User-generated wisdom
- Embracing diversity
- Ingenious
- Learner-centred
- Outcomes
Changes in the skills that count
Economy-wide measures of routine and non-routine task input (US)

The dilemma of schools: The skills that are easiest to teach and test are also the ones that are easiest to digitise, automate and outsource

(Levy and Murnane)
PISA 2009 in brief

- Over half a million students...
  - representing 28 million 15-year-olds in 74* countries/economies
- took an internationally agreed 2-hour test...
  - Goes beyond testing whether students can reproduce what they were taught...
  - to assess students’ capacity to extrapolate from what they know and creatively apply their knowledge in novel situations
- and responded to questions on...
  - their personal background, their schools and their engagement with learning and school
- Parents, principals and system leaders provided data on...
  - school policies, practices, resources and institutional factors that help explain performance differences.

* Data for Costa Rica, Georgia, India, Malaysia, Malta, Mauritius, Venezuela and Vietnam will be published in December 2011
PISA 2009 in brief

PISA seeks to...

... Support governments to prepare students...
    ... to deal with more rapid change than ever before...
    ... for jobs that have not yet been created...
    ... using technologies that have not yet been invented...
    ... to solve problems that we don’t yet know will arise

... Provide a basis for policy dialogue and global collaboration in defining and implementing educational goals, policies and practices

- Show countries what achievements are possible
- Help governments set policy targets in terms of measurable goals achieved elsewhere
- Gauge the pace of educational progress
- Facilitate peer-learning on policy and practice
PISA 2009 in brief

Key principles

- ‘Crowd sourcing’ and collaboration
  - PISA draws together leading expertise and institutions from participating countries to develop instruments and methodologies...
  ... guided by governments on the basis of shared policy interests
- Cross-national relevance and transferability of policy experiences
  - Emphasis on validity across cultures, languages and systems
  - Frameworks built on well-structured conceptual understanding of assessment areas and contextual factors
- Triangulation across different stakeholder perspectives
  - Systematic integration of insights from students, parents, school principals and system-leaders
- Advanced methods with different grain sizes
  - A range of methods to adequately measure intended constructs with different grain sizes to serve different decision-making needs
  - Productive feedback, at appropriate levels of detail, to fuel improvement at multiple levels.
The development of PISA

PISA 2000

Examining individual, institutional and systemic factors associated with quality, equity and efficiency in education

Extending the range of competencies through which quality is assessed

Proliferation of assessment areas.

Understanding drivers of successful reform trajectories

'Modemcratising PISA'

Monitoring educational progress

Understanding the instructional context of learning outcomes - Linking how students learn with what teachers do

Money pits

Electronic delivery of assessments

More difficult

Less difficult

Low-hanging fruits

High policy value

Quick wins

Moderate policy value
Examining individual, institutional and systemic factors associated with quality, equity and efficiency in education

Extending the range of competencies through which quality is assessed

Measuring student learning outcomes in key subjects and establishing the comparative strengths and weaknesses of education systems

Understanding drivers of successful reform trajectories

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PISA 2003

Low-hanging fruits

Understanding the instructional context of learning outcomes - Linking how students learn with what teachers do

‘Democratising PISA’

Monitoring educational progress

Understanding drivers of systemic factors associated with quality, equity and efficiency in education

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Examining individual, institutional and systemic factors associated with quality, equity and efficiency in education

Extending the range of competencies through which quality is assessed

Affective dimensions of outcomes
Assessment of digital literacy

PISA 2009

Measuring student learning outcomes in key subjects and establishing the comparative strengths and weaknesses of education systems

Electronic delivery of assessments

Money pits

Proliferation of assessment areas

Understanding drivers of successful reform trajectories

Monitoring educational progress
‘Democratising PISA’

Understanding the instructional context of learning outcomes - Linking how students learn with what teachers do

High policy value

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PISA

IIEP, 15 December 2011

Moderate policy value
Design, implementation and alignment of policies
# PISA framework

<table>
<thead>
<tr>
<th>Level</th>
<th>Domain 1</th>
<th>Domain 2</th>
<th>Domain 3</th>
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</thead>
<tbody>
<tr>
<td>Level A</td>
<td>Individual learner</td>
<td>Outputs and Outcomes</td>
<td>Policy Levers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>impact of learning</td>
<td>shape educational outcomes</td>
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<tr>
<td>Level B</td>
<td>Instructional settings</td>
<td>Quality and distribution of knowledge &amp; skills</td>
<td>Individ attitudes, engagement and behaviour</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Socio-economic background of learners</td>
</tr>
<tr>
<td>Level C</td>
<td>Schools, other institutions</td>
<td>Quality of instructional delivery</td>
<td>Teaching, learning practices and classroom climate</td>
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<tr>
<td></td>
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<td></td>
<td>Student learning, teacher working conditions</td>
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<tr>
<td>Level D</td>
<td>Country or system</td>
<td>Output and performance of institutions</td>
<td>The learning environment at school</td>
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<td></td>
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<td></td>
<td>Community and school characteristics</td>
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<td></td>
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<td>Social &amp; economic outcomes of education</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Structures, resource alloc and policies</td>
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<tr>
<td></td>
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<td>National educ, social and economic context</td>
</tr>
</tbody>
</table>
Average performance of 15-year-olds in reading - extrapolate and apply

High reading performance

Low reading performance

17 countries perform below this line

Shanghai-China
Korea
Finland
Hong Kong-China
Singapore
New Zealand
Japan
Australia
Belgium
Poland
Switzerland
United States
Germany
Sweden
France
Ireland
Hungary
United Kingdom
Macao-China
Slovenia
Slovak Republic
Czech Republic
Luxembourg
Israel
Austria
Dubai (UAE)
Russian Federation
Chile
Serbia

440,000
460,000
480,000
500,000
520,000
540,000
560,000

25
35
45
55
Average performance of 15-year-olds in science – extrapolate and apply

High average performance
Large socio-economic disparities
Low average performance
High social equity

Strong socio-economic impact on student performance

Socially equitable distribution of learning opportunities

High reading performance
Low reading performance
Durchschnittliche Schülerleistungen im Bereich Mathematik

- Low average performance
- Large socio-economic disparities
- High average performance
- Large socio-economic disparities

- High social equity
- Strong socio-economic impact on student performance
- Socially equitable distribution of learning opportunities

- High reading performance
- Low reading performance

- Australia
- Belgium
- Canada
- Chile
- Czech Rep
- Denmark
- Finland
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Israel
- Italy
- Japan
- Korea
- Luxembourg
- Mexico
- Netherlands
- New Zealand
- Norway
- Poland
- Portugal
- Spain
- Sweden
- Switzerland
- UK
- US

- Shanghai-China
- Hong Kong-China
- Singapore
- Japan
- Korea
- Finland
- Canada
- Netherlands
- Norway
- Estonia
- Liechtenstein
- Iceland
- Chinese Taipei
- Denmark
- United Kingdom
- United States
- France
- Hungary
- Austria
- Slovenia
- Czech Republic
- Slovak Republic
- Luxembourg
- Austria
- Russia
- Russian Federation
- Lithuania
- Turkey
- Italy
- Latvia
- Spain
- Croatia
- Lithuania
- Turkey

2009
Durchschnittliche Schülerleistungen im Bereich Mathematik

- Low average performance
- Large socio-economic disparities
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- Large socio-economic disparities
- Low average performance
- High social equity
- High average performance
- High social equity

Strong socio-economic impact on student performance
Socially equitable distribution of learning opportunities

Australia, Belgium, Canada, Chile, Czech Rep, Denmark, Finland, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, UK, US

2009
High performing systems often prioritize the quality of teachers over the size of classes

Contribution of various factors to upper secondary teacher compensation costs per student as a percentage of GDP per capita (2004)

- Salary as % of GDP/capita
- Instruction time
- 1/teaching time
- 1/class size

Percentage points

Difference with OECD average
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Durchschnittliche Schülerleistungen im Bereich Mathematik

Low average performance
Large socio-economic disparities
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Low average performance
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Strong socio-economic impact on student performance

Socially equitable distribution of learning opportunities

Australia
Belgium
Canada
Chile
Czech Rep
Denmark
Finland
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Japan
Korea
Luxembourg
Mexico
Netherlands
New Zealand
Norway
Poland
Portugal
Spain
Sweden
Switzerland
UK
US
Durchschnittliche Schülerleistungen im Bereich Mathematik

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Socially equitable distribution of learning opportunities

High reading performance

Australia  Belgium  Canada  Chile  Czech Rep  Denmark  Finland  Germany  Greece  Hungary  Iceland  Ireland  Israel  Italy  Japan  Korea  Luxembourg  Mexico  Netherlands  New Zealand  Norway  Poland  Portugal  Spain  Sweden  Switzerland  UK  US

2000

High average performance

China  Korea  Hong Kong–China

High social equity

Large socio-economic disparities

Low reading performance

Dubai (UAE)  Russian Federation

Low average performance

High social equity

Serbia  Turkey
Durchschnittliche Schülerleistungen im Bereich Mathematik

Low average performance
Large socio-economic disparities

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Large socio-economic disparities

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Socially equitable distribution of learning opportunities

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Japan
Korea
Luxembourg
Mexico
Netherlands
New Zealand
Norway
Poland
Portugal
Spain
Sweden
Switzerland
UK
US

2000

Other rapid improvers in reading:
Peru, Indonesia, Latvia, Israel and Brazil

Rapid improvers in mathematics:
Mexico, Brazil, Turkey, Greece, Portugal, Italy and Germany

Rapid improvers in science:
Qatar, Turkey, Portugal, Korea, Brazil, Colombia, Italy, Norway, United States, Poland
Changes in performance by type of task

Increase in percentage correct:
- Multiple-choice - reproducing knowledge: 0.8 to 1.7 (OECD)
- Open-ended - constructing knowledge: 1.7 to 6.5 (OECD)

OECD vs. Japan:
- Multiple-choice - reproducing knowledge: 2006 (0.8) vs. 2009 (1.7)
- Open-ended - constructing knowledge: 2006 (1.7) vs. 2009 (6.5)
Percentage of students reading for enjoyment

- 2006: OECD 69, Japan 45
- 2009: OECD 64, Japan 56

OECD
Japan
Increased likelihood of tertiary participation at age 19/21 associated with PISA reading proficiency at age 15 (Canada) after accounting for school engagement, gender, mother tongue, place of residence, parental, education and family income (reference group PISA Level 1).
The old bureaucratic system  The modern enabling system

Student inclusion

Some students learn at high levels  All students need to learn at high levels

Curriculum, instruction and assessment

Routine cognitive skills, rote learning  Learning to learn, complex ways of thinking, ways of working

Teacher quality

Few years more than secondary  High-level professional knowledge workers

Work organisation

‘Tayloristic’, hierarchical  Flat, collegial

Accountability

Primarily to authorities  Primarily to peers and stakeholders
• www.oecd.org; www.pisa.oecd.org
  - All national and international publications
  - The complete micro-level database

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... and remember:
Without data, you are just another person with an opinion