Excellence and equity
Policy lessons from top-performers

Wellington, July 2013

Andreas Schleicher
Special advisor to the Secretary-General on Education Policy
Deputy Director for Education
Across the world more people obtain better qualifications but the pace of change varies hugely across countries
A world of change – higher education

Expenditure per student at tertiary level (USD)

Graduate supply

Tertiary-type A graduation rate (%)

Cost per student

1995

Australia
Austria
Belgium
Canada
Chile
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Japan
Korea
Luxembourg
Mexico
Netherlands
New Zealand
Norway
Poland
Portugal
Slovak Republic
Slovenia
Spain
Sweden
Switzerland
Turkey
United Kingdom
United States

Graduate supply

Tertiary-type A graduation rate (%)
A world of change – higher education

- Tertiary-type A graduation rate (%)
- Expenditure per student at tertiary level (USD)

1995

- United States

Cost per student

Graduate supply

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Belgium
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United States
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

United Kingdom
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

Australia

2001
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2002

Countries:
- Australia
- Austria
- Belgium
- Canada
- Chile
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Israel
- Italy
- Japan
- Korea
- Luxembourg
- Mexico
- Netherlands
- New Zealand
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A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate
A world of change – higher education

Expenditure per student at tertiary level (USD)

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A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

New Zealand
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

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- Slovenia
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- Sweden
- Switzerland
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A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2009

Countries represented in the graph:
- Australia
- Austria
- Belgium
- Canada
- Chile
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- Denmark
- Estonia
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- Germany
- Greece
- Hungary
- Iceland
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Strong performers and successful reformers
Andreas Schleicher

A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

Iceland
Poland
Australia
New Zealand
UK

ANZOG 2013
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

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2010

US
Benchmarking quality and equity
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
What 15-year-olds can do
Average performance of 15-year-olds in reading - extrapolate and apply

... 17 countries perform below this line
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Excellence and Equity

Average performance of 15-year-olds in science – extrapolate and apply

Low average performance
Large socio-economic disparities

High average performance
Large socio-economic disparities

Low reading performance
High reading performance

High average performance
Low social equity

High average performance
High social equity

Strong socio-economic impact on student performance
Socially equitable distribution of learning opportunities
New Zealand, July 2013

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Durchschnittliche Schülerleistungen im Bereich Mathematik

Low average performance

Large socio-economic disparities

High average 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

High reading performance

2009

High average performance

Large socio-economic disparities

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Strong socio-economic impact on student performance

Strong socially equitable distribution of learning opportunities

Socially equitable distribution of learning opportunities

2009
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Low average performance
Large socio-economic disparities

High average performance
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Socially equitable distribution of learning opportunities
High reading performance
High social equity

Strong socio-economic impact on student performance
High average performance
Low average performance

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Netherlands
New Zealand
Norway
Poland
Portugal
Spain
Sweden
Switzerland
UK
US

2009

540,000
520,000
600,000
35
30
25

Shanghai-China
Hong Kong-China
Singapore
Australia
Japan
New Zealand
Canada
Netherlands
Luxembourg
Iceland

High reading performance
High average performance

Low reading performance
Low average performance

High social equity
Large socio-economic disparities

Low average performance
Large socio-economic disparities

High average performance
High social equity
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

Difference with OECD average

Percentage points

15
10
5
0
-5
-10

Portugal  Spain  Switzerland  Belgium  Korea  Luxembourg  Germany  Greece  Japan  Australia  United Kingdom  New Zealand  France  Netherlands  Denmark  Italy  Austria  Czech Republic  Hungary  Norway  Ireland  Iceland  Mexico  Finland  Sweden  Poland  United States  Slovakia
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Durchschnittliche Schülerleistungen im Bereich Mathematik

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

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2009
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Durchschnittliche Schülerleistungen im Bereich Mathematik

Low average performance

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Strong socio-economic impact on student performance

Socially equitable distribution of learning opportunities

Austria Belgium Canada Chile

Czech Rep Denmark Finland Greece

Hungary Iceland Ireland Israel

Italy Japan Korea New Zealand

Netherlands Norway Poland Portugal

Spain Sweden Switzerland UK US

Australia Belgium China Denmark

Finland France Germany

Greece Hungary Iceland

Ireland Israel Japan

Korea Luxembourg Mexico

Netherlands New Zealand Norway

Poland Portugal Spain

Slovak Republic Slovenia Switzerland

Turkey Ukraine United States

Windows 10 2000

Russian Federation

United Kingdom

High reading performance

Low reading performance

High average performance

Low average performance

Large socio-economic disparities
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Durchschnittliche Schülerleistungen im Bereich Mathematik

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

Socially equitable distribution of learning opportunities

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Sweden
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UK
US

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
School performance and socio-economic background

New Zealand

- School performance and students' socio-economic background within schools
- Student performance and schools' socio-economic background

Score

Student performance

Private school
Public school in rural area
Public school in urban area

Disadvantage
PISA Index of socio-economic background
Advantage
Changes in performance by type of task

- **Multiple-choice - reproducing knowledge**
  - OECD: 0.8
  - Japan: 1.7

- **Open-ended - constructing knowledge**
  - OECD: 6.5
  - Japan: 1.7
Achieving excellence with equity

- Must haves
- Quick wins
- Low feasibility
- High feasibility
- Money pits
- Low hanging fruits

High impact on outcomes

Low impact on outcomes
Excellence and Equity

Low impact on outcomes

High impact on outcomes

Low feasibility

High feasibility

Money pits

Low hanging fruits

Must haves

Commitment to universal achievement

Capacity at point of delivery

Resources where they yield most

Incentive structures and accountability

Gateways, instructional systems

Coherence

Quick wins

Commitment to universal achievement

Capacity at point of delivery

Resources where they yield most

Incentive structures and accountability

Gateways, instructional systems

Coherence

Low feasibility

High feasibility

Money pits

Low hanging fruits
A commitment to education and the belief that competencies can be learned and therefore all children can achieve

- Universal educational standards and personalisation as the approach to heterogeneity in the student body
- Clear articulation who is responsible for ensuring student success and to whom
Clear ambitious goals that are shared across the system and aligned with high stakes gateways and instructional systems

- Well established delivery chain through which curricular goals translate into instructional systems, instructional practices and student learning (intended, implemented and achieved)
- High level of metacognitive content of instruction
- Innovative learning environments
- **Capacity at the point of delivery**
  - Attracting, developing and retaining high quality teachers and school leaders and a work organisation in which they can use their potential
  - Instructional leadership and human resource management in schools
  - Keeping teaching an attractive profession
  - System-wide career development

- **Gateways, instructional systems**
- **Incentive structures and accountability**
- **Money pits**
- **Low hanging fruits**

- Low feasibility
- High feasibility

- Low impact on outcomes
- High impact on outcomes

- Quick wins
- Must haves
Teacher in-service development

- No matter how good the pre-service education for teachers is... it cannot prepare teachers for rapidly changing challenges throughout their careers.

- High-performing systems rely on ongoing professional development to...
  - update individuals' knowledge of a subject in light of recent advances
  - update skills and approaches in light of new teaching techniques, new circumstances, and new research
  - enable teachers to apply changes made to curricula or teaching practice
  - enable schools to develop and apply new strategies concerning the curriculum and teaching practice
  - exchange information and expertise among teachers and others
  - help weaker teachers become more effective.

- Effective professional development is on-going...
  - includes training, practice and feedback, and adequate time and follow-up support
Relatively few teachers participate in the kinds of professional development which they find has the largest impact on their work.

Comparison of teachers participating in professional development activities and teachers reporting moderate or high level impact by types of activity.

TALIS Average
Relatively few teachers participate in the kinds of professional development which they find has the largest impact on their work.

Comparison of teachers participating in professional development activities and teachers reporting moderate or high level impact by types of activity.

*TALIS Average*
High impact on outcomes

- Incentives, accountability, knowledge management
  - Aligned incentive structures
    - For students
      - How gateways affect the strength, direction, clarity and nature of the incentives operating on students at each stage of their education
      - Degree to which students have incentives to take tough courses and study hard
      - Opportunity costs for staying in school and performing well
    - For teachers
      - Make innovations in pedagogy and/or organisation
      - Improve their own performance and the performance of their colleagues
      - Pursue professional development opportunities that lead to stronger pedagogical practices
  - A balance between vertical and lateral accountability
  - Effective instruments to manage and share knowledge and spread innovation - communication within the system and with stakeholders around it
  - A capable centre with authority and legitimacy to act
School autonomy, accountability, and student performance

Impact of school autonomy on performance in systems with and without accountability arrangements

Systems with more accountability

Systems with less accountability

School autonomy in resource allocation

Schools with more autonomy

Schools with less autonomy

PISA score in reading

500

498

495

490

493

489

480

Impact of school autonomy on performance in systems with and without accountability arrangements.
- Investing resources where they can make most of a difference
  - Alignment of resources with key challenges (e.g. attracting the most talented teachers to the most challenging classrooms)
  - Effective spending choices that prioritise high quality teachers over smaller classes
Coherence of policies and practices

- Alignment of policies across all aspects of the system
- Coherence of policies over sustained periods of time
- Consistency of implementation
- Fidelity of implementation (without excessive control)
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- High impact on outcomes
  - Quick wins
    - Incentive structures and accountability
    - Gateways, instructional systems
  - Resources where they yield most
    - Commitment to universal achievement
    - Capacity at point of delivery
  - Must haves
    - Coherence
  - Low hanging fruits
    - Money pits
  - Low feasibility
    - Low feasibility
  - High feasibility
    - High feasibility

- Low impact on outcomes
  - Low feasibility
    - Low feasibility
  - High feasibility
    - High feasibility

Resources where they yield most:
- Commitment to universal achievement
- Capacity at point of delivery
- Coherence
Why equity has become so central to economic and social well-being
Low skills and economic outcomes

Increased likelihood of failure (16-65 year olds)

- In lowest two quintiles of personal income
- Unemployed
- Received social assistance in last year
- Did not receive investment income in last year

Odds are adjusted for age, gender and immigration status.
Low skills and social outcomes

Odds ratios

- Has fair to poor health
- Does not volunteer for charity or non-profit organizations
- Poor understanding of political issues facing country
- Poor level of general trust
- Higher propensity of believing people try to take advantage of others
- Lower propensity to reciprocate
- Poor political efficacy

Odds are adjusted for age, gender, and immigration status.
Average school systems

Some students learn at high levels

Uniformity

Curriculum-centred

Learning a place

Low status of the teaching profession

Prescription

High performers in PISA

All students learn at high levels

Embracing diversity

Learner-centred

Learning an activity

Countries attract and develop high quality teachers

Informed profession

User-generated wisdom
**Education reform trajectories**

<table>
<thead>
<tr>
<th>The old bureaucratic system</th>
<th>Student inclusion</th>
<th>The modern enabling system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some students learn at high levels</td>
<td>All students need to learn at high levels</td>
<td></td>
</tr>
<tr>
<td>Routine cognitive skills, rote learning</td>
<td>Learning to learn, complex ways of thinking, ways of working</td>
<td></td>
</tr>
<tr>
<td>Few years more than secondary</td>
<td>High-level professional knowledge workers</td>
<td></td>
</tr>
<tr>
<td>‘Tayloristic’, hierarchical</td>
<td>Flat, collegial</td>
<td></td>
</tr>
<tr>
<td>Primarily to authorities</td>
<td>Primarily to peers and stakeholders</td>
<td></td>
</tr>
</tbody>
</table>

- **Curriculum, instruction and assessment**
- **Teacher quality**
- **Work organisation**
- **Accountability**

**Excellence and Equity**

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Find out more about PISA at...

- **OECD** [www.pisa.oecd.org](http://www.pisa.oecd.org)
  - All national and international publications
  - The complete micro-level database
- **U.S. White House** [www.data.gov](http://www.data.gov)
- **Email**: Andreas.Schleicher@OECD.org

... and remember:

*Without data, you are just another person with an opinion*