Human Capital for Growth and Social Progress

Geneva, 22 October 2014

Andreas Schleicher
Why skills matter
What skills matter
How skills matter
Developing the right skills
and the place of character
Why skills matter

What skills matter

How skills matter

Developing the right skills

and the place of character
A world of change – higher education

Expenditure per student at tertiary level (USD)

Graduating supply

Tertiary-type A graduation rate (%)

Cost per student
A world of change – higher education

1995

Expenditure per student at tertiary level (USD)

Cost per student

Graduate supply

Tertiary-type A graduation rate (%)

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

United States
A world of change – higher education

Expenditure per student at tertiary level (USD)

United Kingdom

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

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2001
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2002
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2003
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

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
A world of change – higher education

Expenditure per student at tertiary level (USD) vs. Tertiary-type A graduation rate for countries such as 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, and United States for the year 2005.
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2006
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2007
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Expenditure per student at tertiary level (USD) vs. Tertiary-type A graduation rate for various countries as of 2008.
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2009

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
A world of change – higher education

Expenditure per student at tertiary level (USD)

Tertiary-type A graduation rate

2010
The net public return on investment for a man in tertiary education is over USD 100,000, while the net private return is over USD 180,000.

Net private and public returns associated with a man attaining tertiary education (2010)
Graduates cannot find jobs while employers say they cannot find the people with the skills they need.
Mean literacy proficiency and distribution of literacy scores, by educational attainment

Qualifications don’t always equal skills
Character education

Why skills matter

What skills matter

How skills matter

Developing the right skills
Evolution of employment in occupational groups defined by problem-solving skills
Problem solving skills in a digital environment

Young adults (16-24 year-olds) vs All adults (16-65 year-olds)

Countries: Sweden, Finland, Netherlands, Norway, Denmark, Australia, Canada, Germany, England/N. Ireland (UK), Japan, Flanders (Belgium), Average, Czech Republic, Austria, United States, Korea, Estonia, Slovak Republic, Ireland, Poland

Skills: Basic digital problem-solving skills, Advanced digital problem-solving skills

%: 100, 80, 60, 40, 20, 0, 20, 40, 60, 80, 100
The United States and England (UK) perform better-than-expected in problem solving. The difference between observed and expected performance is larger among strong performers in mathematics.

Japan performs better-than-expected in problem solving. The difference between observed and expected performance is larger among low achievers in mathematics.

Spain’s performance is lower-than-expected in problem solving. The gap between observed and expected performance is wider among low achievers in mathematics.

Singapore’s performance in problem solving is as high as expected at all levels of mathematics performance.
Students' performance in problem solving is **higher** than their expected performance.

Students' performance in problem solving is **lower** than their expected performance.
The modern world no longer rewards people just for what they know, but for what they can do with what they know.

Character education

Why skills matter
What skills matter
How skills matter
Developing the right skills
Increased likelihood of positive outcomes among adults with higher basic skills
(scoring at Level 4/5 compared with those scoring at Level 1 or below)
An individual with higher levels of literacy is more likely to report better health

Proportion of adults reporting that they are in good health, by PIAAC literacy proficiency level (2012)
An individual with higher levels of literacy is more likely to volunteer.

Proportion of adults reporting that they volunteer at least once a month, PIAAC literacy proficiency level (2012)
An individual with higher levels of literacy is more likely to trust others

Proportion of adults reporting that they trust others, by PIAAC literacy proficiency level (2012)
An individual with higher levels of literacy is more likely to believe they have a say in government.

Proportion of adults reporting that they believe they have a say in government, by PIAAC literacy proficiency level (2012)

Chart A8.5 - GS
Growing evidence that people need to mobilise a highly diversified set of mutually reinforcing skills to develop behaviour that copes with contemporary challenges:

- Employment
- Health
- Political participation, civic engagement, social cohesion
- Uncertainty, ambiguity, volatility

Diverse labels used

- non-cognitive skills, soft skills, character, personality, etc.

Working definition

- Relatively enduring patterns of thoughts, feelings and behaviours that reflect the tendency to respond in certain ways under certain conditions
Countries where students have stronger beliefs in their abilities perform better in mathematics

Fig III.4.5

Mean mathematics performance vs. Mean index of mathematics self-efficacy

R² = 0.36
Perceived self-responsibility for failure in mathematics

Percentage of students who reported "agree" or "strongly agree" with the following statements:

- Sometimes I am just unlucky
- The teacher did not get students interested in the material
- Sometimes the course material is too hard
- This week I made bad guesses on the quiz
- My teacher did not explain the concepts well this week
- I’m not very good at solving mathematics problems

Fig III.3.6
Boys tend to have greater beliefs in their mathematics abilities than girls

Difference in the mean index

- Gender gap adjusted for differences in mathematics performance between boys and girls
- Gender gap

Boys tend to have greater beliefs in their mathematics abilities than girls.
Greater self-efficacy among girls could shrink the gender gap in mathematics performance, particularly among the highest-performing students.

Gender gap among the highest-achieving students (90th percentile)

Greater self-efficacy among girls could shrink the gender gap in mathematics performance, particularly among the highest-performing students.
Add 2 boxes to indicate what we see above the horizontal axis and what we see below.
Percentage of girls and boys who intend to take additional mathematics, rather than language, courses after they leave school

Girls vs. Boys
Perseverant students perform better

Score-point difference in mathematics associated with one unit of the index of perseverance

- Average student
- Change in performance per one unit of the index among lowest-achieving students
- Change in performance per one unit of the index among highest-achieving students

Fig III.3.3
Truants perform worse

Score-point difference in mathematics, associated with skipping classes or days of school
Why skills matter
What skills matter
How skills matter
Links beyond learning at school
Developing the right skills
How social and emotional skills matter

Panel C. Switzerland
Probability of self-reported depression at age 25 by skill deciles

OECD (forthcoming)
How social and emotional skills matter

Panel B. New Zealand
Probability of being happy at age 20, based on self-reports, by skill deciles

OECD (forthcoming)
Character education

Why skills matter
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How skills matter

Developing the right skills
## Policy relevance

### Key features of promising intervention programmes

<table>
<thead>
<tr>
<th></th>
<th>Family involvement</th>
<th>Parent-child attachment</th>
<th>Mentoring</th>
<th>Programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Childhood (0-4)</td>
<td>●</td>
<td>●</td>
<td>–</td>
<td>Abecedarian (US), Jamaican Supplementation Study, Head Start (US), Perry Pre-school (US), Chicago Child Parent Center (US), Sure Start (US)</td>
</tr>
<tr>
<td>Childhood (5-9)</td>
<td>●</td>
<td>○</td>
<td>–</td>
<td>Project Start (US), Seattle Social Development (US), Montreal Longitudinal Experimental Study (Canada)</td>
</tr>
<tr>
<td>Adolescence (10-18)</td>
<td>○</td>
<td>–</td>
<td>●</td>
<td>Big Brothers Big Sisters (US), Entrepreneurs for Social inclusion (US), Becoming a Man (US), Pathways to Education (Canada), National Guard Challenge (United States), Job Corps (US), Dominican Youth employment Program, Year-up (US), Joven (Chile)</td>
</tr>
</tbody>
</table>
• **Diminishing** (and eventually negative) **returns**?
  – e.g., Extreme persistence and self-esteem

• **Social and emotional skills can be valued differently across cultures**
  – e.g., Modesty

• **Social and emotional skills can be valued differently across contexts**
  – e.g., Talent valued in Google
  
  “**Smart creatives are impatient, outspoken risk-takers who are easily bored and change jobs frequently**” (Eric Schmidt, former CEO of Google).
A continuum of support

- Make learning central, encourage engagement and responsibility
- Be acutely sensitive to individual differences
- Provide continual assessment with formative feedback
- Be demanding for every student
- Ensure that students feel valued and included and learning is collaborative
Thank you

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- The complete micro-level database

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