Performance and Engagement Across Countries
Results from OECD/PISA

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Directorate for Education
Performance and Engagement

1. Context

2. Where we are today
   - What PISA shows about student performance and engagement

3. Where we can be
   - What the best performing countries show can be achieved

4. How we might get there
High level skills
a new currency - but not without inflation

University attainment (tertiary-type A)
A significant minority remains left out

Percentage of the population that has attained at least upper secondary education, by age group

- Serious consequences for those who have not completed this level
  - For a 30-44 year-old only 68% of the earnings of an upper secondary graduate
  - Likelihood of unemployment almost twice as high as for upper secondary graduate
  - Education combines with other influences to make adult training least common among those who need it most
Adult education least common among those who need it most

Participation rate in continuing education and training and ratio of participation based on educational attainment for 25 to 64-year-olds

- Total participation in continuing education and training
- Ratio of participation in continuing education and training for individuals with tertiary education relative to individuals who have not completed lower secondary education
Performance and Engagement
- many dimensions -

- Relationships between skills and industry, occupation and technology of production
- Supply of skills and mechanisms of skill acquisition and loss over the lifecycle
- How markets for skills function with respect to productivity, employment and wages
- Social distribution of skills and their impact on economic and social outcomes
- Knowledge and skills, attitudes, aspirations and behaviour of youth entering the labour market
- Economic and social benefits from participation in different forms of training
- Patterns of transitions from initial education to subsequent education and training and the labour market
- Achievement and access to post-secondary education and initial labour market success
What PISA provides

- An assessment of the yield of education
  - including and beyond the curriculum
- Comparable skill measures
  - that can guide policy decisions
- Insights into the mix of factors which contribute to the development of knowledge and skills
  - and how these factors operate similarly or differently across countries
- A strong substantive and cross-cultural core for defining performance targets
What PISA provides

- The PISA development strategy
  - Begin with assessments domains with an established methodology
  - Progressively integrate a wider range of competencies, including cross-curricular and affective dimensions of learning

- A three-yearly cycle to balance...
  - Regular input into policy debate
  - The potential to monitor progress
  - Existing resource constraints
To analyse, compare, contrast, and evaluate

To think imaginatively

**Literacy in PISA**

About the capacity of young adults to use written information effectively

To apply knowledge in real-life situations

To communicate thoughts and ideas effectively
Reading Literacy
Using, interpreting and reflecting on written material
Mathematical literacy

Emphasis is on mathematical knowledge put into functional use in a multitude of different situations in varied, reflective and insight-based ways

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Using, interpreting and reflecting on written material
Mathematical literacy

Emphasis is on mathematical knowledge put into functional use in a multitude of different situations in varied, reflective and insight-based ways.

Reading Literacy
Using, interpreting and reflecting on written material.

Scientific Literacy
Using scientific knowledge, identifying scientific questions, and drawing evidence-based conclusions to understand and make decisions about the natural world.
Performance and Engagement

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Percentage of students at each of the proficiency levels in reading literacy

<table>
<thead>
<tr>
<th>Country</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>5</td>
<td>19</td>
<td>32</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td>Korea</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>32</td>
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<tr>
<td>Ireland</td>
<td>8</td>
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<td>27</td>
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<tr>
<td>United Kingdom</td>
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<tr>
<td>France</td>
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<td>9</td>
<td>15</td>
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<tr>
<td>United States</td>
<td>16</td>
<td>12</td>
<td>22</td>
<td>21</td>
<td>4</td>
</tr>
<tr>
<td>Spain</td>
<td>19</td>
<td>16</td>
<td>21</td>
<td>33</td>
<td>5</td>
</tr>
<tr>
<td>Italy</td>
<td>21</td>
<td>16</td>
<td>21</td>
<td>31</td>
<td>9</td>
</tr>
<tr>
<td>Germany</td>
<td>20</td>
<td>15</td>
<td>22</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Mexico</td>
<td>15</td>
<td>17</td>
<td>22</td>
<td>30</td>
<td>6</td>
</tr>
</tbody>
</table>

Percentage breakdown:
- Below Level 1: 19 (Finland), 3 (Korea), 8 (Ireland), 11 (France), 12 (United Kingdom), 16 (United States), 19 (Spain), 21 (Italy), 9 (Germany), 6 (Mexico)
- Level 1: 5 (Finland), 6 (Korea), 19 (Ireland), 16 (France), 24 (United Kingdom), 22 (United States), 11 (Spain), 21 (Italy), 9 (Germany), 16 (Mexico)
- Level 2: 20 (Finland), 5 (Korea), 18 (Ireland), 12 (France), 12 (United Kingdom), 12 (United States), 12 (Spain), 12 (Italy), 14 (Germany), 16 (Mexico)
- Level 3: 9 (Finland), 4 (Korea), 4 (Ireland), 4 (France), 6 (United Kingdom), 6 (United States), 4 (Spain), 4 (Italy), 5 (Germany), 10 (Mexico)
- Level 4: 14 (Finland), 19 (Korea), 18 (Ireland), 22 (France), 21 (United Kingdom), 21 (United States), 26 (Spain), 26 (Italy), 14 (Germany), 13 (Mexico)
- Level 5: 5 (Finland), 5 (Korea), 3 (Ireland), 9 (France), 9 (United Kingdom), 9 (United States), 19 (Spain), 17-21 (Italy), 19 (Germany), 16 (Mexico)
Is it all innate ability?
Variation in student performance

Germany 22 (21-25)
Italy 21 (19-24)
Japan 8 (3-10)
United States 16 (10-20)
United Kingdom 7 (5-9)
Korea 6 (4-9)
Ireland 5 (3-9)
Spain 19 (17-21)
Finland 1
Sweden 10 (9-11)
Is it all innate ability?
Variation in student performance

Germany: 22 21-25
Italy: 21 19-24
Japan: 8 3-10
United States: 16 10-20
United Kingdom: 7 5-9
Korea: 6 4-9
Ireland: 5 3-9
Spain: 19 17-21
Finland: 1 9-11
Sweden: 10 9-11
Is it all innate ability?
Variation in student performance

Variation of performance within schools

Variation of performance between schools

Germany: 22 (21-25)
Italy: 21 (19-24)
Japan: 8 (3-10)
United States: 16 (10-20)
United Kingdom: 7 (5-9)
Korea: 6 (4-9)
Ireland: 5 (3-9)
Spain: 19 (17-21)
Finland: 1 (9-11)
Sweden: 10 (9-11)

Is it all innate ability?
Variation in student performance
Social background is a powerful factor influencing student performance (parental occupation, wealth, cultural resources, parental education, family structure, immigrant status).

But poor performance does not automatically follow.
Social Background and Student Performance

The diagram shows a scatter plot correlating the PISA Index of social background with student performance in various countries. The x-axis represents the PISA Index of social background, while the y-axis represents student performance. Different countries are represented by distinct lines, with Finland, Japan, UK, France, US, Italy, and Germany shown. The scatter plot indicates a general trend where higher social background scores are associated with higher student performance, though there is considerable variation across different countries.
Performance and Engagement

1. Context
2. Where we are today
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3. Where we can be
   - What the best performing countries show can be achieved
4. How we might get there
Quality and equity can be achieved together

- 'dumbing down' is not an inevitable consequence of the pursuit of equity
- 'levelling up' is achievable (e.g. Finland, Korea, Canada)
Performance and Engagement

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4. How we might get there
<table>
<thead>
<tr>
<th>How we might get there</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country or system</strong></td>
</tr>
<tr>
<td>Overall outcomes of education</td>
</tr>
<tr>
<td>System-wide structures, resources and policies</td>
</tr>
<tr>
<td>National educational, social and economic context</td>
</tr>
<tr>
<td><strong>Schools and other institutions</strong></td>
</tr>
<tr>
<td>Output of institutions and institutional performance</td>
</tr>
<tr>
<td>The learning environment at school</td>
</tr>
<tr>
<td>Community and school characteristics</td>
</tr>
<tr>
<td><strong>Instructional settings</strong></td>
</tr>
<tr>
<td>Quality of instructional delivery</td>
</tr>
<tr>
<td>Teaching and learning practices and classroom climate</td>
</tr>
<tr>
<td>Student learning conditions and teacher working conditions</td>
</tr>
<tr>
<td><strong>Individual learner</strong></td>
</tr>
<tr>
<td>Quality and distribution of knowledge and skills</td>
</tr>
<tr>
<td>Individual attitudes, engagement and behaviour</td>
</tr>
<tr>
<td>Background of the learners</td>
</tr>
</tbody>
</table>
Foundations for lifelong learning

- PISA shows the important role of...
  - Engagement and motivation
  - Effective learning strategies
- Many of the successful education systems seek to shift the focus of education policy and practice...
  - Learning to learn
  - Self-concept

Engagement defined through:
- Time spent reading for enjoyment
- Time spent reading a diversity of material
- High motivation and interest in reading
Student engagement in reading
- Highest engagement
- Lowest engagement

- Performance
- Social equity

Countries:
- Finland
- Korea
- Japan
- Iceland
- Canada
- Australia
- New Zealand
- Ireland
- United Kingdom
- Sweden
- Switzerland
- Belgium
- Austria
- Norway
- United States
- Denmark
- Spain
- Portugal
- Italy
- Greece
- Poland
- Hungary
- Germany
- Czech Republic
- Luxembourg
- France
- United Kingdom
- Spain
- Portugal
- Italy
- Greece
- Poland
- Hungary
- Germany
- Czech Republic
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- Portugal
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- Poland
- Hungary
- Germany
- Czech Republic
- Luxembourg
- France
- United Kingdom
- Spain
- Portugal
- Italy
- Greece
- Poland
- Hungary
Student engagement in reading
- Strong relationship with performance ($r > 0.4$)
- Moderate relationship with performance ($r > 0.3$)
- Modest relationship with performance ($r > 0.2$)
Gender Differences

- Overall gender differences
  - Reading: females++
  - Mathematics: males+
  - Science: uneven

- The low performers
  - Males far more likely to underperform in reading
  - Females not over-represented among low performers in mathematics
Percentage of students at or below Level 1 in Reading Literacy

<table>
<thead>
<tr>
<th>Country</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Ireland</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>OECD Average</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>United States</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td>Greece</td>
<td>31</td>
<td>18</td>
</tr>
<tr>
<td>Spain</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>France</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Australia</td>
<td>8</td>
<td>16</td>
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<tr>
<td>Poland</td>
<td>16</td>
<td>30</td>
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<tr>
<td>Korea</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Italy</td>
<td>4</td>
<td>25</td>
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<tr>
<td>Czech Republic</td>
<td>13</td>
<td>24</td>
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<tr>
<td>Canada</td>
<td>12</td>
<td>13</td>
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<tr>
<td>Sweden</td>
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<tr>
<td>New Zealand</td>
<td>8</td>
<td>6</td>
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<tr>
<td>Norway</td>
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<td>6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Japan</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Finland</td>
<td>11</td>
<td>11</td>
</tr>
</tbody>
</table>
Interest in reading and performance on reading literacy

Performance on the combined reading literacy scale

Index of interest in reading

Low interest in reading  High interest in reading

Males

Females
Interest in mathematics and performance on mathematical literacy

Index of interest in reading

Performance on the combined reading literacy scale

Low interest in mathematics  High interest in mathematics

Males

Females
Reading literacy proficiency by levels of engagement and social background

- Low socio-economic background
- Medium socio-economic background
- High socio-economic background

Graph showing reading literacy performance by engagement levels and socio-economic background.
Not just about academic performance
Prevalence of disaffected students

% Disaffected students

United Kingdom  Sweden  Hungary  Ireland  Netherlands1  Austria  Canada  Australia  Switzerland  Denmark  New Zealand  Norway  Finland  Mexico  Germany  Italy  Spain  United States  Czech Republic  France  Japan  Korea

17 18 19 19 20 20 21 21 21 21 21 21 21 22 23 23 24 25 30 30 38 41
Not just about academic performance
Prevalence of truant students

% Truant students

- United Kingdom
- Sweden
- Hungary
- Ireland
- Netherlands
- Austria
- Canada
- Australia
- Switzerland
- Denmark
- New Zealand
- Norway
- Finland
- Mexico
- Germany
- Italy
- Spain
- United States
- Czech Republic
- France
- Japan
- Korea

(Numbers represent the percentage of truant students in each country.)
Engagement with School

- Disengaged and low-performing but not truant
- Disengaged but high performing students
- Truant and low performing students
- Highly engaged and high performing students
- Highly engaged but moderately performing students
- Disaffected Students
- Engaged Students
- Non-Academic Students
- Truant Students

Socioeconomic Status
An orientation towards outcomes

- PISA suggests positive role of...
  - High performance expectations
  - Strong learning climate and teacher-student relations

Many of the successful education systems have shifted the focus of education policy and practice...

...from control over resources
...to the management of outcomes
- Clear definition of educational goals and systematic monitoring of their achievement jointly by various stakeholders
The learning environment

Achievement press

- Percentage of 15-year-olds who report that most of the lessons:
  - Teacher wants students to work hard: 91% (OECD 68%)
  - Teachers tells that students can do better: 49% (OECD 48%)
  - Teacher does not like it when students deliver careless work: 55% (OECD 49%)
  - Students have to learn a lot: 63% (OECD 57%)
  - Significant relationship with performance
The learning environment
Instructional climate

- Percentage of 15-year-olds who report teacher:
  - shows interest in every student's learning: 75% (OECD 56%)
  - gives students an opportunity to express opinions: 76% (OECD 66%)
  - helps students with their work: 80% (OECD 59%)
  - continues teaching until the students understand: 75% (OECD 60%)
  - does a lot to help students: 75% (OECD 60%)
  - checks students' homework regularly: 69% (OECD 54%)

- Significant relationship with performance

- Also fairly positive picture also concerning broader engagement with school

- Absolute and relative perspectives
The learning environment
Disciplinary climate

- Percentage of 15-year-olds who report that:
  - students cannot work well: 17% (OECD 19%)
  - students don’t listen to what the teacher says: 20% (OECD 24%)
  - there is noise and disorder: 27% (OECD 30%)
  - at the start of class, more than 5 minutes are spent doing nothing: 41% (OECD 39%)
  - Significant relationship with performance
An orientation towards outcomes

- Successful schools with more freedom to...
  - decide on curricular offerings
  - establish their learning environment
  - manage their resources
  
but they also tend to be more accountable for their success

Variation in student abilities and needs can be addressed constructively without
- repetition
- early selection and institutional differentiation
E.g. Learning environment and course offering

- High degree of autonomy
- Low degree of autonomy

% Variance between schools
Placing the learner at the centre

- PISA suggests that rigid selection practices at very early ages tend to increase disparities without raising overall performance.

Many of the successful education systems have shifted the focus of education policy and practice...

...from the institutions to learning and the learner

- Integrated pathways and support of individual learning needs
- Sufficient focus on the first years of schooling
- Sufficient learning time
Early selection and institutional stratification

Low degree of stratification
High degree of stratification

Andreas Schleicher, Directorate for Education, 2002

Low Social equity
High Social equity

Low Performance
High Performance
Effects of students' and schools' socio-economic background on student performance

(Effects associated with half a standard deviation on the socio-economic index)
Summing up

- Building student engagement with reading...
  ... may help lift overall performance and counter social disadvantage

- Many of the high performing countries have shifted the focus of policy and practice...
  ... from the control over resources to the management of results
  - High performance expectations
  - Strong learning climate and teacher-student relations
  - Schools with greater freedom to decide on curricular offerings, establish their learning environment, manage their resources
  ... from the institutions to learning and the learner
  - Individual teacher support and open pathways

- PISA cannot provide conclusive answers but can help to ask the right questions
Further information

- www.oecd.org
- www.pisa.oecd.org
- email: pisa@oecd.org
- Andreas.Schleicher@OECD.org

... and remember:

Without data, you are just another person with an opinion