There’s Still No Time to Lose: What Do 2018 PISA Results Mean for U.S. Education?

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Assessment of how well 15-year-olds in 79 countries can apply what they know in:

- Reading literacy (the core domain)
- Mathematics literacy
- Science literacy
- Global competence (in some countries)
What Does PISA Measure?

- **Reading**: understand, use, evaluate, reflect on and engage with texts.
- **Science**: explain phenomena scientifically, evaluate and design enquiry, interpret data scientifically.
- **Mathematics**: capacity to reason mathematically, using concepts, procedures, facts and tools to describe, explain and predict phenomena.
What Does PISA Look Like?

- Computer-based tests were used in most countries.
- Assessments lasting a total of two hours.
- Multi-stage adaptive approach (students assigned items based on prior performance).
- Mixture of multiple-choice questions and questions requiring students to construct their own responses.
For Example...

The question asks the student to identify whether each statement from the book review is a fact or an opinion.

The student must first understand the literal meaning of each statement, then decide if the content was factual or represented the perspective of the author.

Requires focus on how content is presented rather than just the meaning.
8 Systems Outperformed the U.S. in Reading
30 Systems Outperformed the U.S. in Math
11 Systems Outperformed the U.S. in Science
No change in U.S. average score overall.

Increase in U.S. scores for 90th and 75th percentiles between 2015 and 2018.

Decrease at 10th percentile between 2012 and 2018.

* Significantly different from 2018 score

Note: PISA 2006 reading literacy results for the U.S. were not reported due to an error in printing the test booklets.
Math:
• No change in U.S. average score overall in either the long- or short-term.
• Increase in U.S. scores for 90th and 75th percentiles in short term; no change in the long term.

Science:
• Increase in U.S. average score overall in the long-term; no change in U.S. in the short-term.
• Scores at the 25th and 10th percentiles increased over the long-term.
What Does This Mean?: Reading and Science

- Students in small group of consistently high performing countries about 1 year ahead of U.S. students

- U.S. performance stagnated, and grouped with many other countries, many poorer than us
What Does This Mean?: Reading and Science

• Over 80% of U.S. students can: ID a main idea, recognize cause and effect, say if conclusions are warranted
• ...But only 14% can distinguish between fact and opinion
• And 9% can apply scientific knowledge to unfamiliar situations
# Score Distribution: Mathematics

## Percent of Students Performing at Each Band of Proficiency in Math

<table>
<thead>
<tr>
<th>Country</th>
<th>Level 2 and Below</th>
<th>Levels 3-4</th>
<th>Levels 5-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>10%</td>
<td>20%</td>
<td>70%</td>
</tr>
<tr>
<td>OECD average</td>
<td>5%</td>
<td>40%</td>
<td>55%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>15%</td>
<td>30%</td>
<td>55%</td>
</tr>
<tr>
<td>Canada</td>
<td>20%</td>
<td>25%</td>
<td>55%</td>
</tr>
<tr>
<td>S. Korea</td>
<td>25%</td>
<td>30%</td>
<td>45%</td>
</tr>
<tr>
<td>Finland</td>
<td>30%</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>Poland</td>
<td>35%</td>
<td>40%</td>
<td>25%</td>
</tr>
<tr>
<td>Taiwan</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Japan</td>
<td>45%</td>
<td>40%</td>
<td>15%</td>
</tr>
<tr>
<td>Estonia</td>
<td>50%</td>
<td>35%</td>
<td>15%</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>55%</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>Singapore</td>
<td>60%</td>
<td>25%</td>
<td>5%</td>
</tr>
<tr>
<td>China</td>
<td>65%</td>
<td>20%</td>
<td>5%</td>
</tr>
</tbody>
</table>

### Notes
- The map visualizes the percentage of students performing at each band of proficiency in Math for select countries and regions.
- The bands are categorized as: Levels 2 and Below, Levels 3-4, Levels 5-6.
Top Performers 1-4 Years Ahead in Math

Countries with 1-4 years ahead in Math performance on PISA 2018 compared to the U.S.:

- China
- Singapore
- Macau (China)
- Hong Kong
- Estonia
- Korea
- Japan
- Taiwan
- Poland
- Switzerland
- Netherlands
- Canada
- Switzerland
- Poland
- Netherlands
- Estonia
- Korea
- Japan
- Taiwan
- Hong Kong
- Macau (China)
- Singapore
- China
Equity: Socio-economic Background

Increase in impact of socio-economic background since 2015

Decrease in impact of socio-economic background since 2009
U.S. Student Wellbeing

- Satisfied with their lives (1)
- Sometimes or always feel happy
- Always feel sad
- Can usually find a way out of difficult situations (2)
- When they fail, they worry about what others think about them (2)
- Intelligence is something that can't change very much (3)
Why Should We Care?: Economic Trends in an AI Age

✓ Many low-skill, low-pay jobs lost
✓ But also, higher-paying jobs being rapidly automated
✓ Entry level and routine work being eliminated for young people
✓ Firms reducing permanent workforce; growth of gig economy
✓ Global firms can staff low-wage workers from other countries
As Much As Economic Security, Our Students Need...

1. Morality and ethics
2. Ability to deal as citizens with a wide range of highly complex existential issues
3. Much fuller development of those qualities that make us fully human
4. Ability to interact with a broad range of people all over the globe
5. Capacity and desire to preserve and defend freedom and democracy
What Can We Do?

• Recognize and build on our own success…but don’t lose sense of urgency
• Learn from the best, ask how they got where they did
• Come together, set common goals for education, welfare and prosperity
• Build the education system – workforce, instructional system, social and financial supports, and unified, coherent governance – needed to meet the needs of the future
Thank you!

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