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

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PISA 2018

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…

PISA 2018

Rapa Nui
Question 3 / 7

Refer to the Review of Collapse on the right. Click on the choices in the table to answer the question.

Listed below are statements from the Review of *Collapse*. Are these statements facts or opinions? Click on either **Fact** or **Opinion** for each statement.

Is the statement a fact or an opinion?	Fact	Opinion
In the book, the author describes several civilizations that collapsed because of the choices they made and their impact on the environment.	O	O
One of the most disturbing examples in the book is Rapa Nui.	O	O
They carved the moai, the famous statues, and used the natural resources available to them to move these huge moai to different locations around the island.	O	O
When the first Europeans landed on Easter Island in 1722, the moai were still there, but the trees were gone.	O	O
The book is written well and deserves to be read by anyone who is concerned about the environment.	O	O

Blog | Book Review

www.academicbookreview.com/Collapse

Review of *Collapse*

Jared Diamond's new book, *Collapse*, is a clear warning about the consequences of damaging our environment. In the book, the author describes several civilizations that collapsed because of the choices they made and their impact on the environment. One of the most disturbing examples in the book is Rapa Nui.

According to the author, Rapa Nui was settled by Polynesians sometime after 700 CE. They developed a thriving society of, perhaps, 15,000 people. They carved the moai, the famous statues, and used the natural resources available to them to move these huge moai to different locations around the island. When the first Europeans landed on Rapa Nui in 1722, the moai were still there, but the trees were gone. The population was down to a few thousand people who were struggling to survive. Mr. Diamond writes that the people of Rapa Nui cleared the land for farming and other purposes and that they over-hunted the numerous species of sea and land birds that had lived on the island. He speculates that the dwindling natural resources led to civil wars and the collapse of Rapa Nui's society.

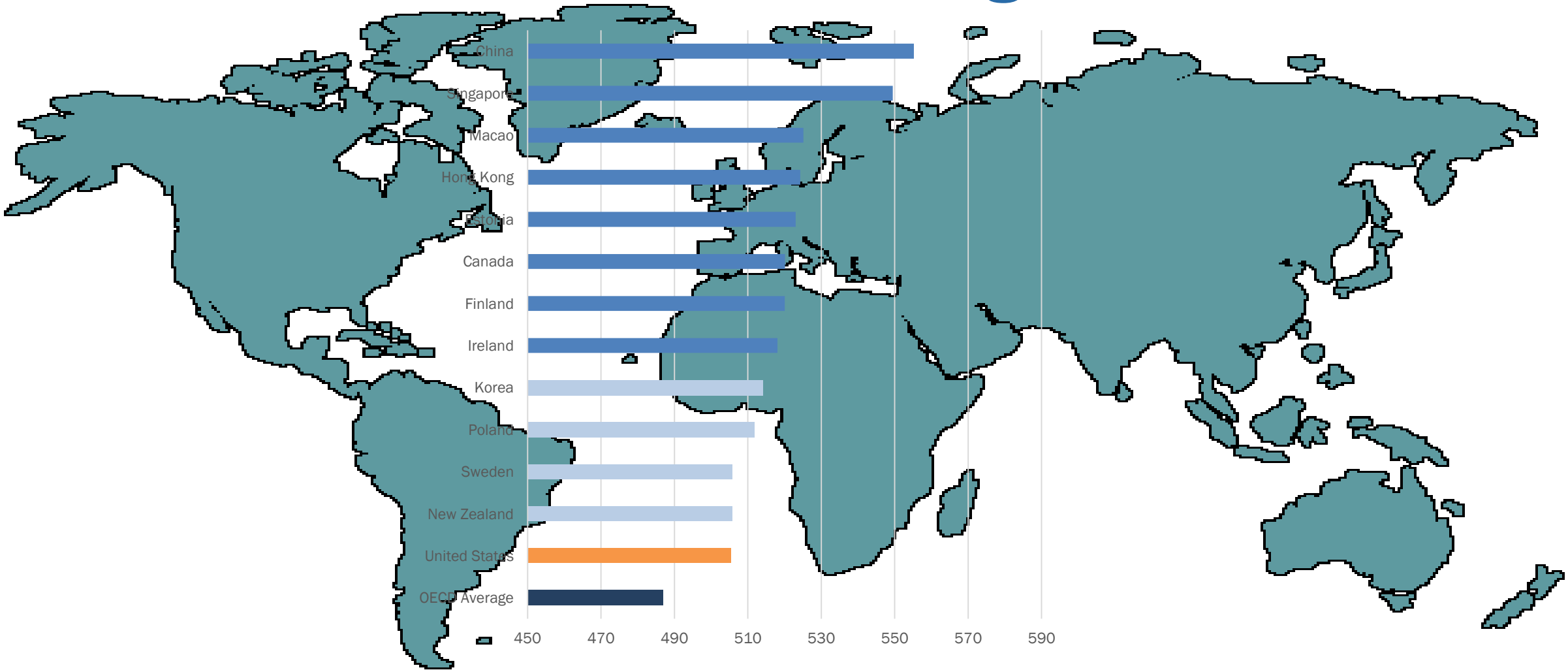
The lesson of this wonderful but frightening book is that in the past, humans made the choice to destroy their environment by cutting down all the trees and hunting animal species to extinction. Optimistically, the author points out, we can choose **not** to make the same mistakes today. The book is written well and deserves to be read by anyone who is concerned about the environment.

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

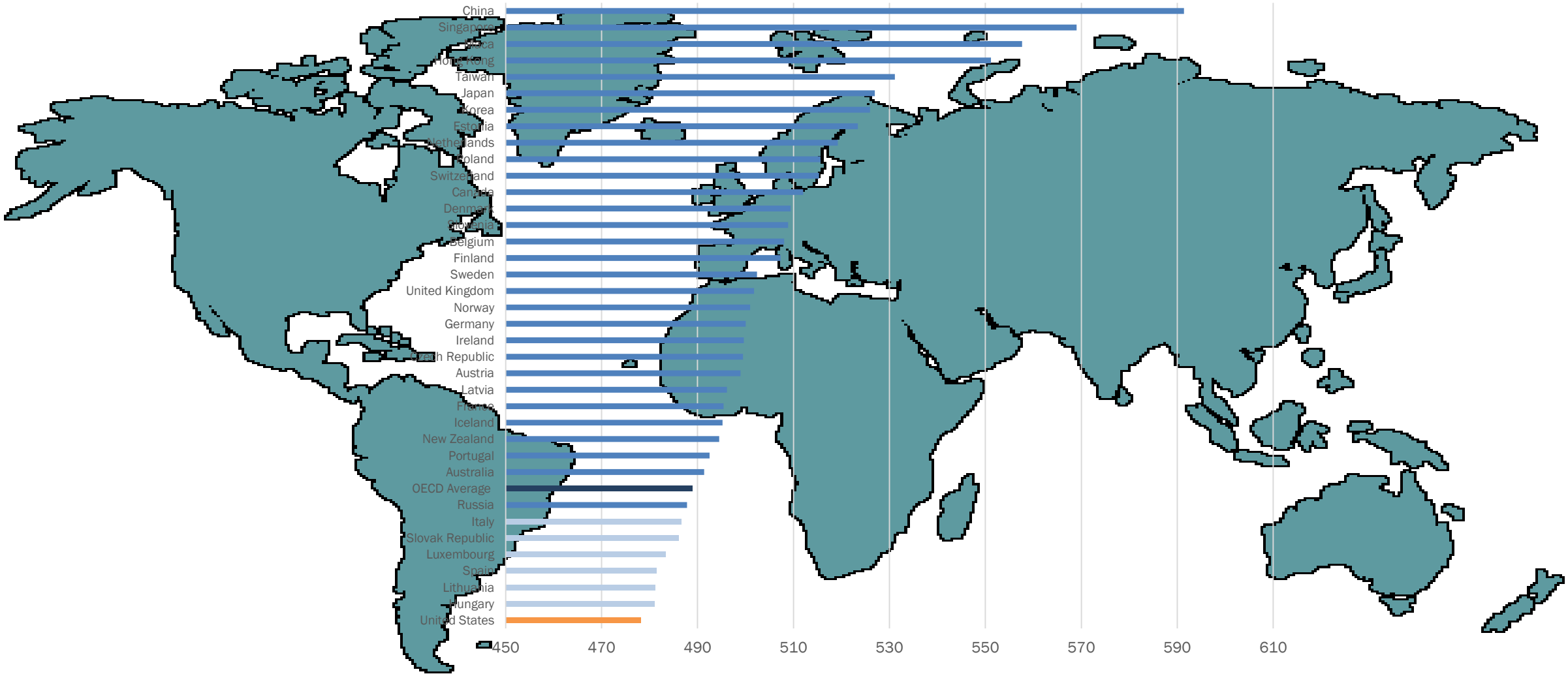
The student must first understand the literal meaning of each statement then decide if the content was factual or represented the perspective of the author

Requires focus on how content is presented rather than just the meaning

8 Systems Outperformed the U.S. in Reading

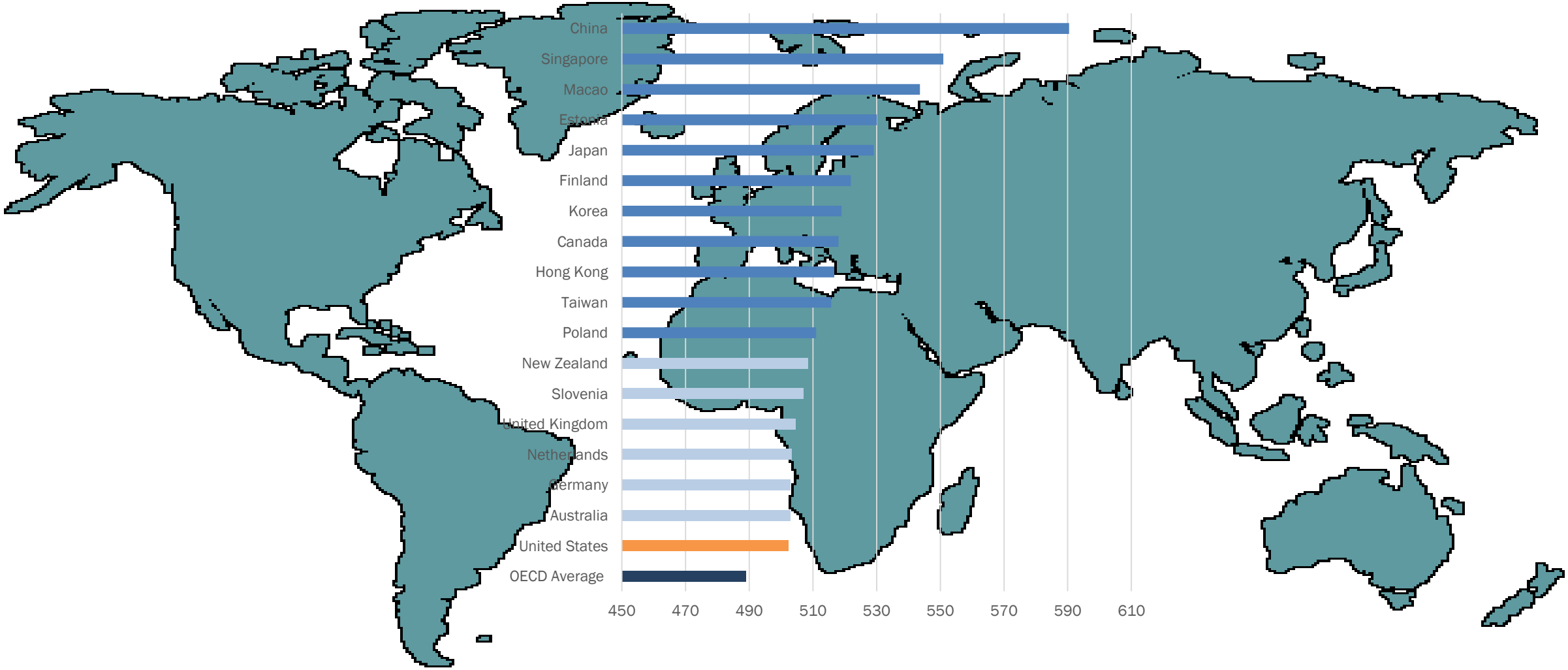


30 Systems Outperformed the U.S. in Math



NCEE National Center On EDUCATION And The Economy

11 Systems Outperformed the U.S. in Science

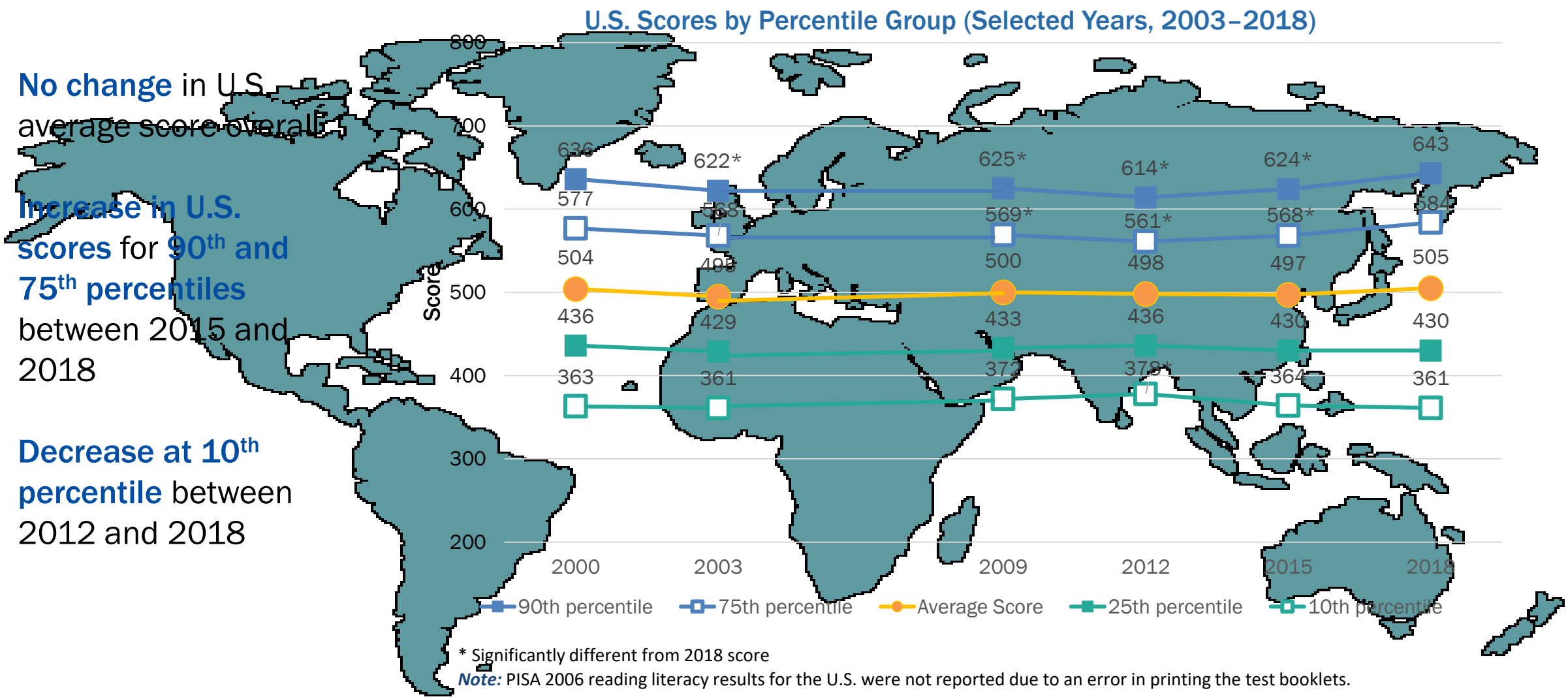


US Reading Proficiency Over Time

No change in U.S. average score overall

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

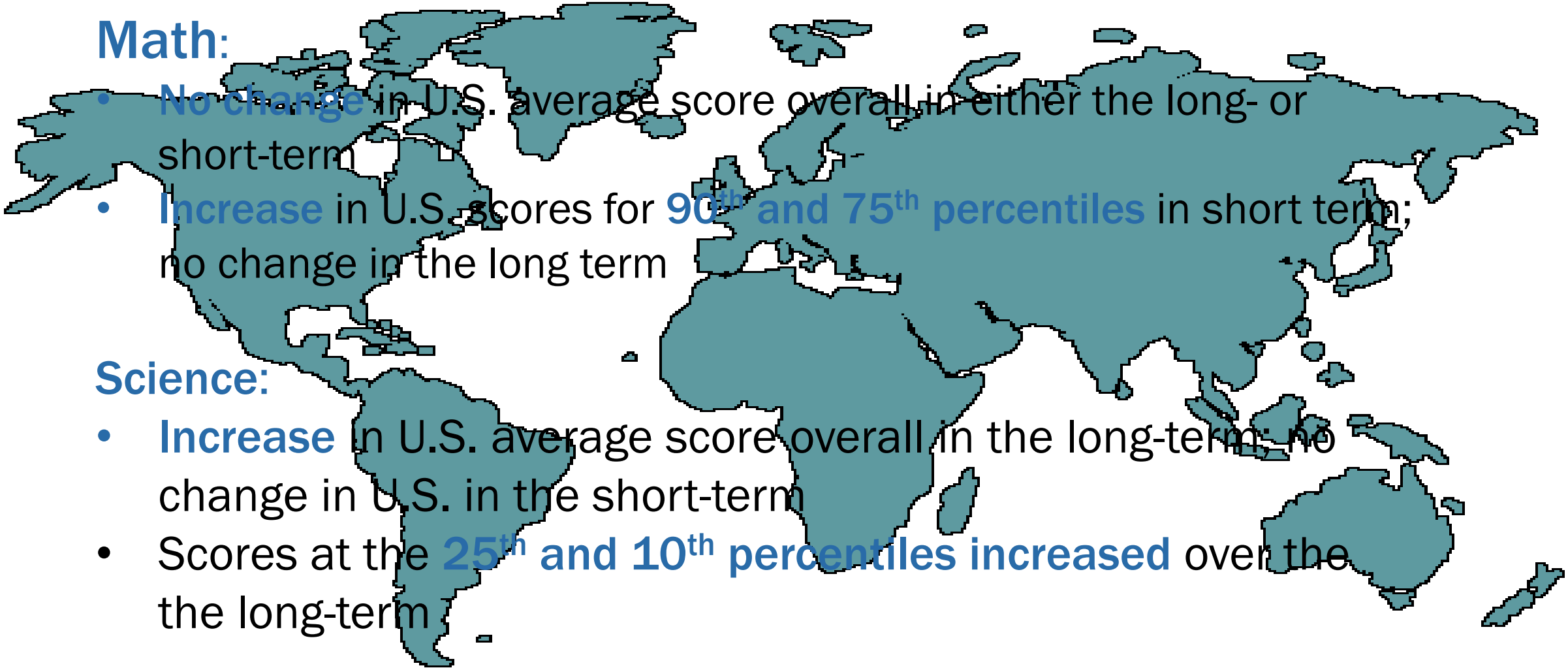
Decrease at 10th percentile between 2012 and 2018



* 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.

US Math & Science Proficiency Over Time



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 the long-term

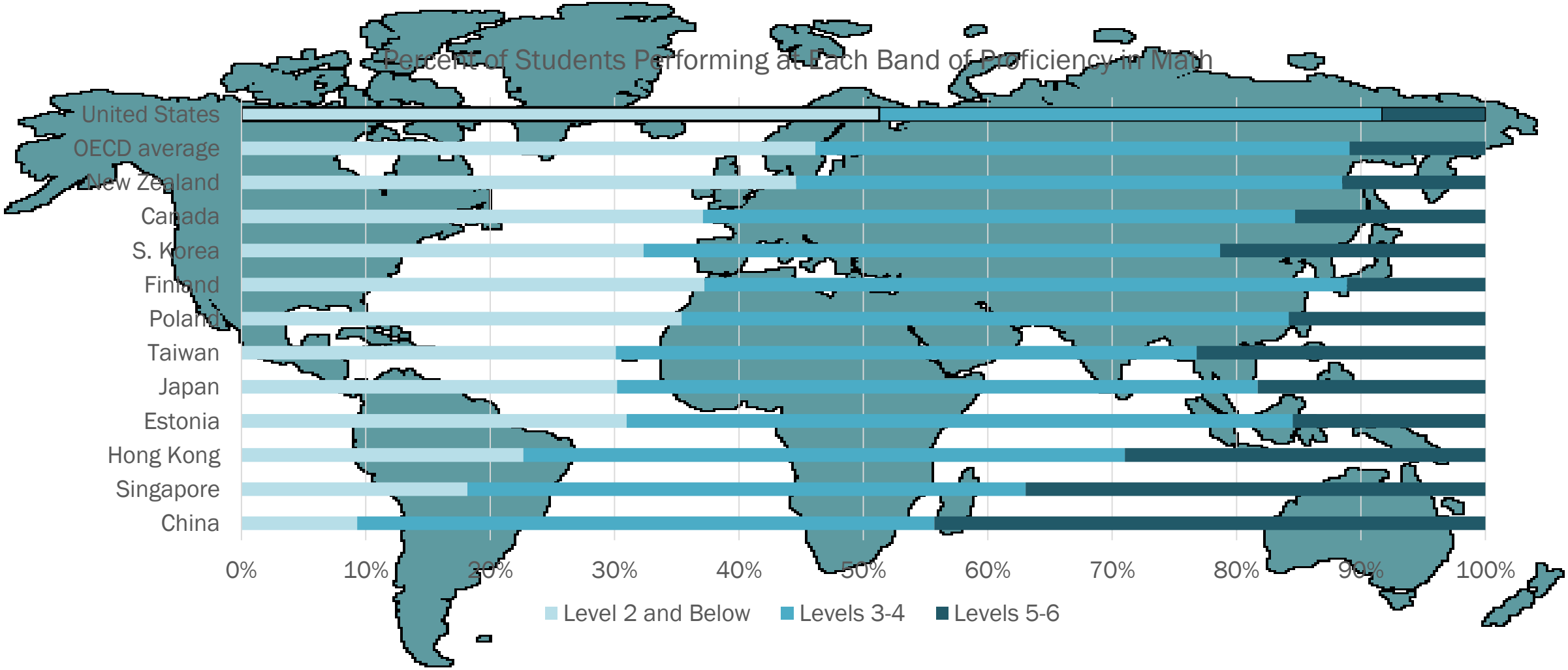
What Does This Mean?: Reading and Science

- 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

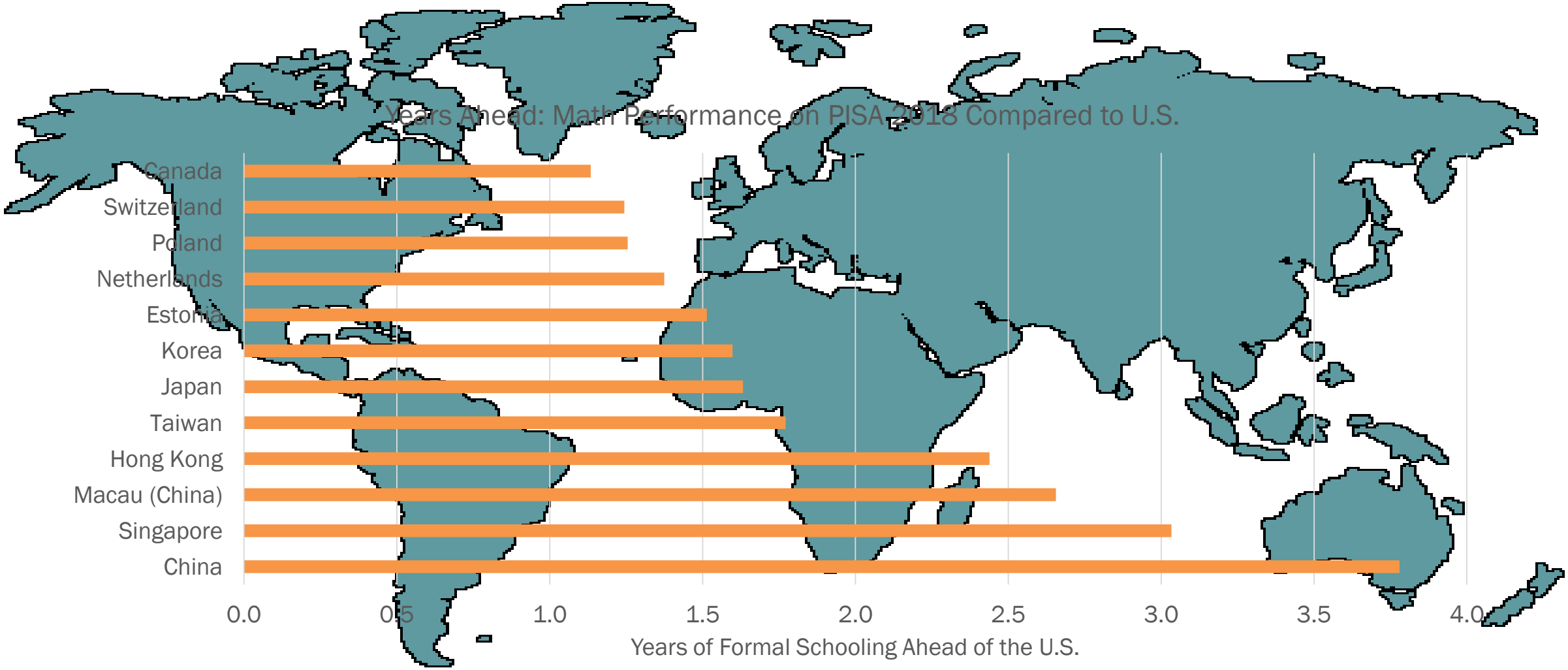
What Does This Mean?: Reading and Science

- 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



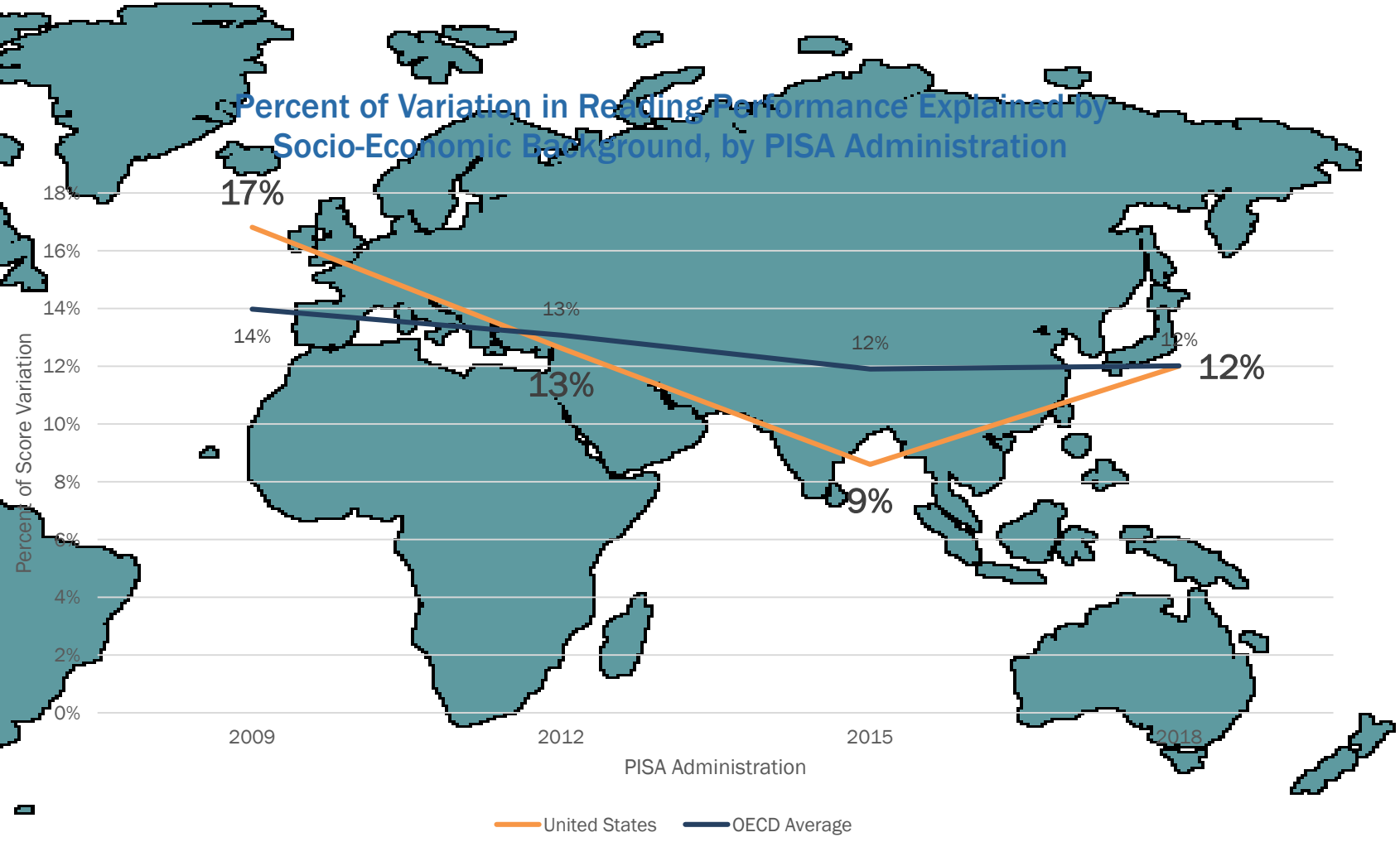
Top Performers 1-4 Years Ahead in Math



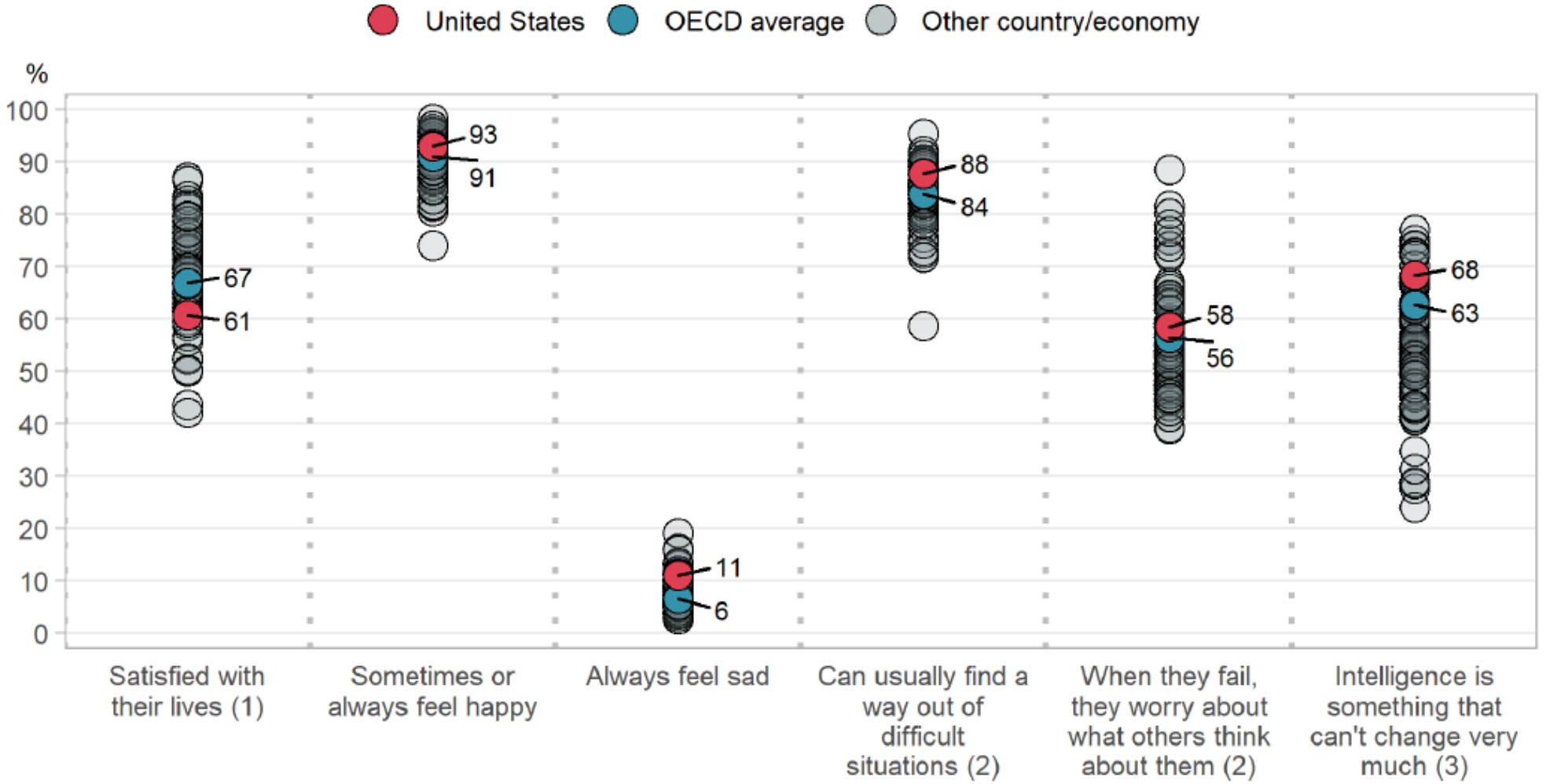
Equity: Socio-economic Background

Increase in impact of socio-economic background since 2015

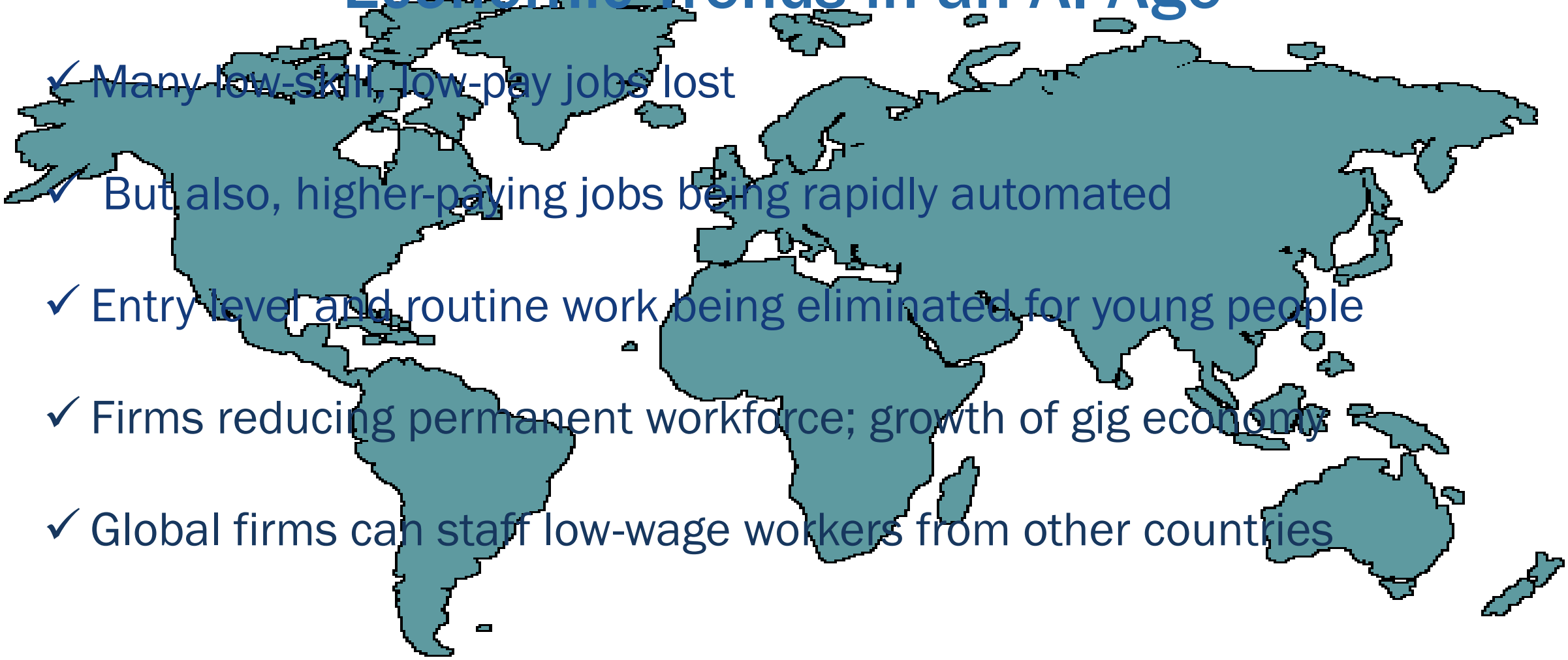
Decrease in impact of socio-economic background since 2009



U.S. Student Wellbeing

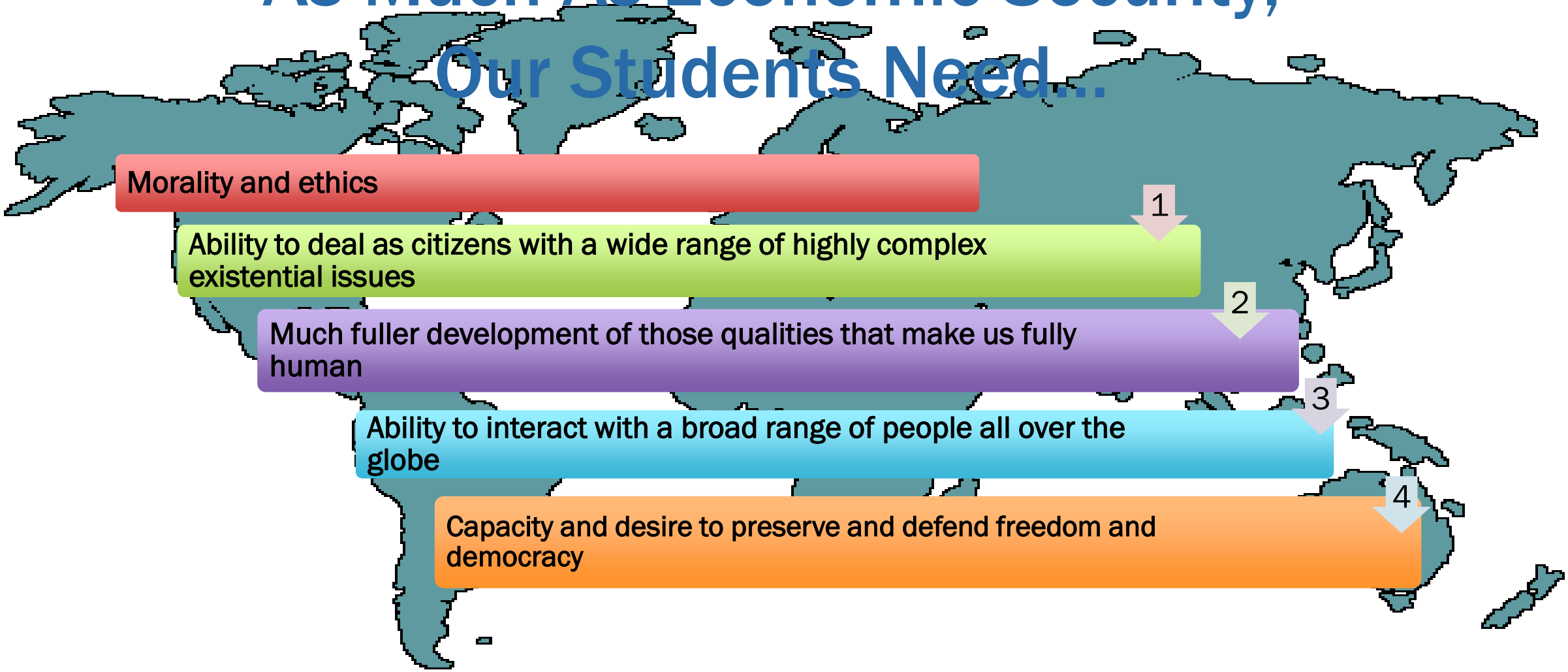


Why Should We Care?: Economic Trends in an AI Age



- ✓ 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…



Morality and ethics

1

Ability to deal as citizens with a wide range of highly complex existential issues

2

Much fuller development of those qualities that make us fully human

3

Ability to interact with a broad range of people all over the globe

4

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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