



# Overview of NCES and U.S. Role in International Assessments

*Presentation for “Thinking Beyond Borders: The Future of Student Assessment”*

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November 17, 2017

# In the news: U.S. Headlines

The New York Times

What America Can Learn From Smart Schools in Other Countries

The Atlantic

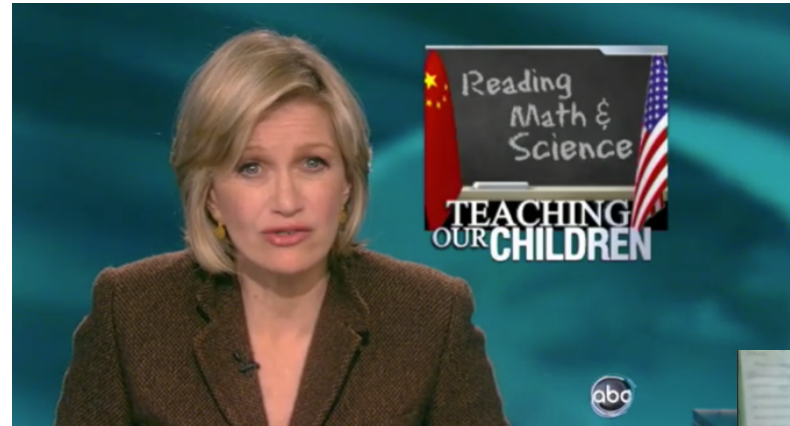
**American Schools vs. the World: Expensive, Unequal, Bad at Math**

npr

America's High School Graduates Look Like Other Countries' High School Dropouts

THE WALL STREET JOURNAL.

**U.S. Teenagers Lose Ground in International Math Exam, Raising Competitiveness Concerns**



QUARTZ

Americans are spectacularly bad at answering even the most basic math questions

**AP**

Math a concern for US teens; science, reading flat on test

Forbes

When It Comes To Tech Skills, We're Not As Good As We Think

EDUCATION WEEK

**International Tests Show Rising, But Mixed, Math and Science Performance**

[NCES.ED.GOV](https://nces.ed.gov)



# In the news: International Headlines

EL MUNDO

**España es el tercer país de la OCDE con más diferencia de rendimiento en Matemáticas entre chicos y chicas**

BBC

**How Canada became an education superpower**

Daily Mail

**'Everything is just going down': US students are getting WORSE at math as science and reading skills stagnate**



GLOBAL SCHOOL TABLES  
BBC puts colleagues through PISA test  
BBC NEWS

Žurnál • Pravda

**Slováci sú národom knižníc. Lenže akí sú čitatelia?**

Le Monde

**Enquête PISA : les élèves français dans la moyenne**

The Telegraph

**In this post-truth world, PISA scores matter more than ever**

ABC

**Australian schools continue to fall behind in maths and science**

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Five things we've  
learned

1. American students tend to struggle more in mathematics than in reading or science.

# U.S. rankings less favorable in mathematics than other subjects

| (Total Education Systems) | Grade 4<br>(54) | Grade 8<br>(43) | Age 15<br>(73) | Adults<br>(22) |
|---------------------------|-----------------|-----------------|----------------|----------------|
| <b>Reading</b>            | <b>6</b>        | <b>—</b>        | <b>16</b>      | <b>8</b>       |
| <b>Science</b>            | <b>8</b>        | <b>8</b>        | <b>20</b>      | <b>—</b>       |
| <b>Math</b>               | <b>11</b>       | <b>9</b>        | <b>38</b>      | <b>17</b>      |

\* Rank is the number of education systems with significantly higher average scores than the United States +1. U.S. also performed not measurably different from countries (ranging from 1 to 14). Rankings based on most recent data from PIRLS (grade 4 reading), TIMSS (grades 4 & 8 math and science), PISA (age 15 reading, math, and science), and PIAAC (adults).

2. We see stronger performance from our youngest students.

# U.S. rankings more favorable for younger students

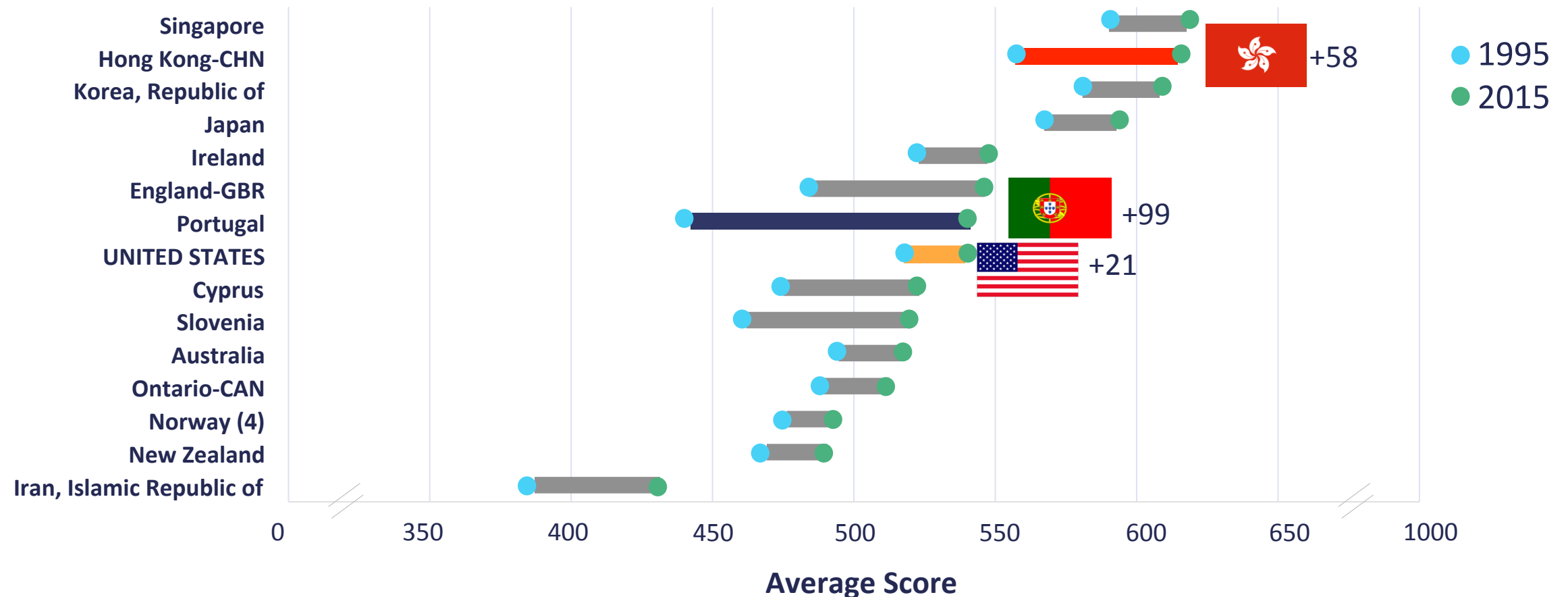
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3. While other countries improve,  
the U.S. is losing ground.

# U.S. 4<sup>th</sup> grade TIMSS mathematics scores have increased, but not to the same extent as some of our competitors



NOTE: Countries participating in TIMSS in 1995 and 2015 and with significant increase in average score shown.

# U.S. 15-year-olds' performance in mathematics declining over time

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**PISA 2015  
Mathematics  
Results**

**U.S. Ranking**

**28**  
2012

**35**  
2015



**Average score lower  
than in 2012**

**7 that were ↔ now ↑**  
**2 that were ↓ now ↔**

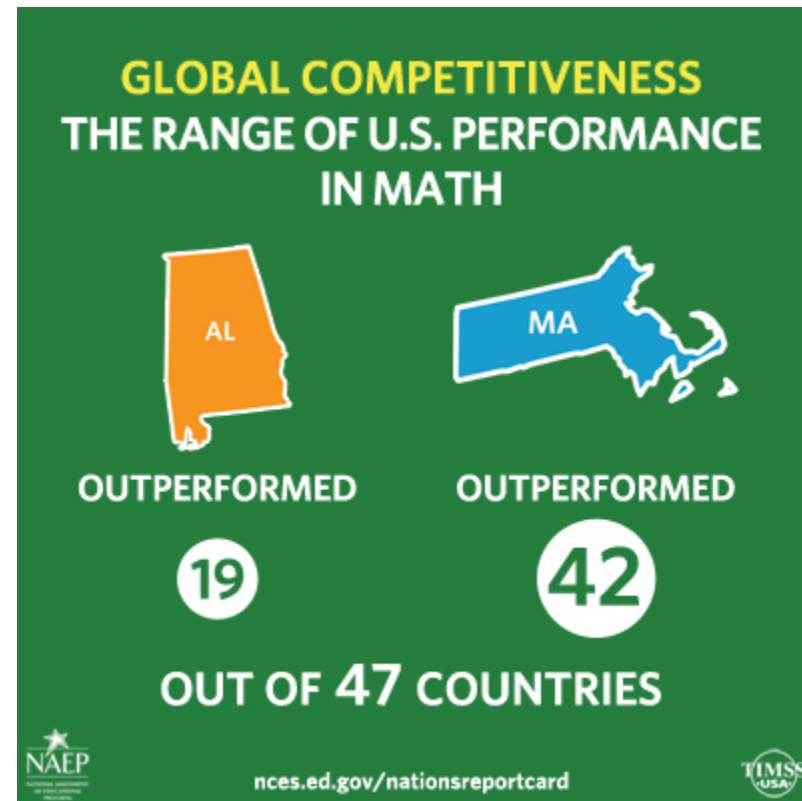
4. Our top performing states are among the best education systems in the world, but our lowest performing states struggle to be competitive globally.

# Massachusetts among the top education systems in the world

In 2011, scores on grade 8 TIMSS ranged from 466 in Alabama to 561 in Massachusetts.

## Alabama's peers:

- Ukraine
- Dubai and the United Arab Emirates
- Norway
- Armenia
- Romania
- Turkey

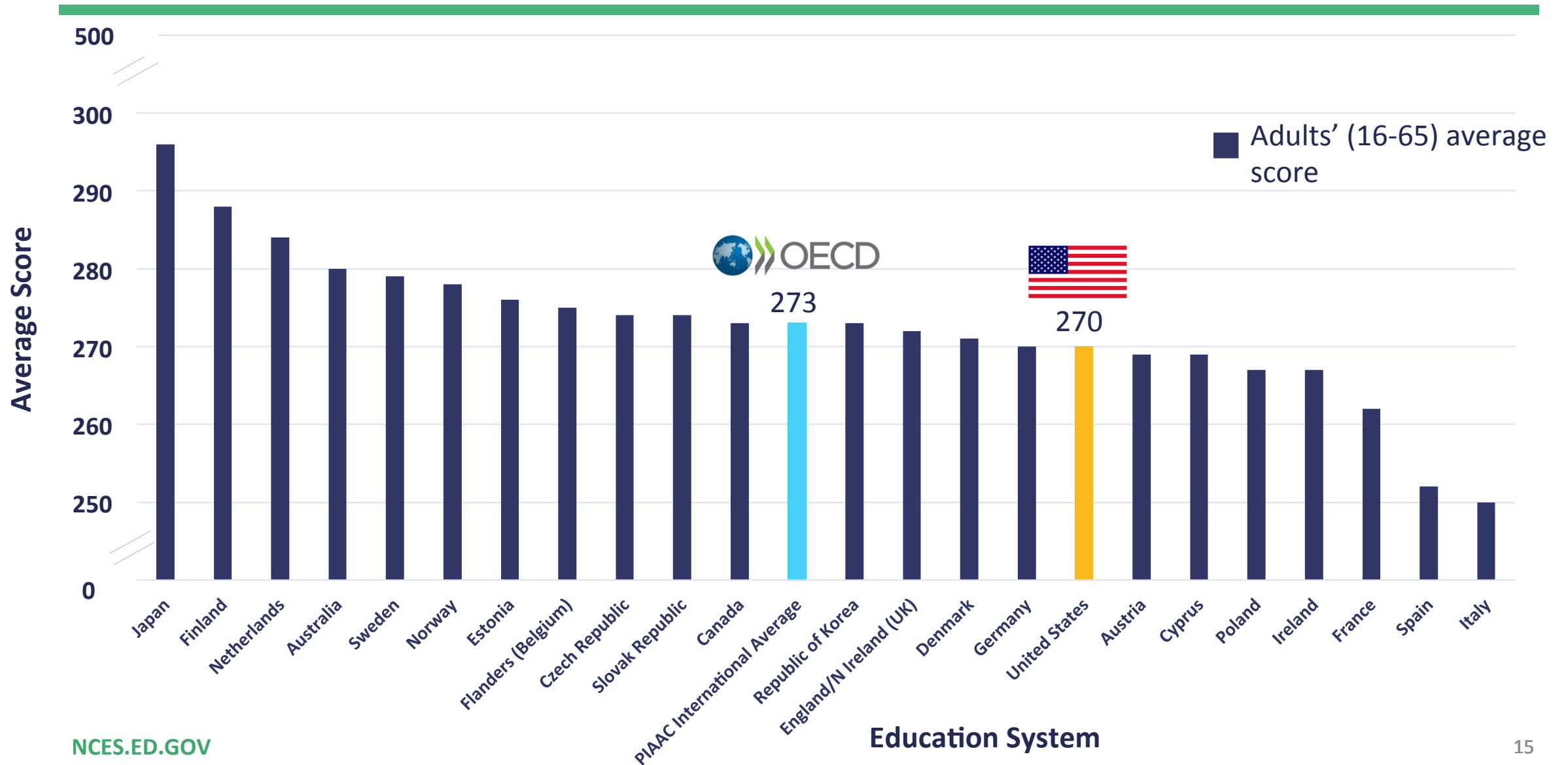


## Massachusetts's peer:

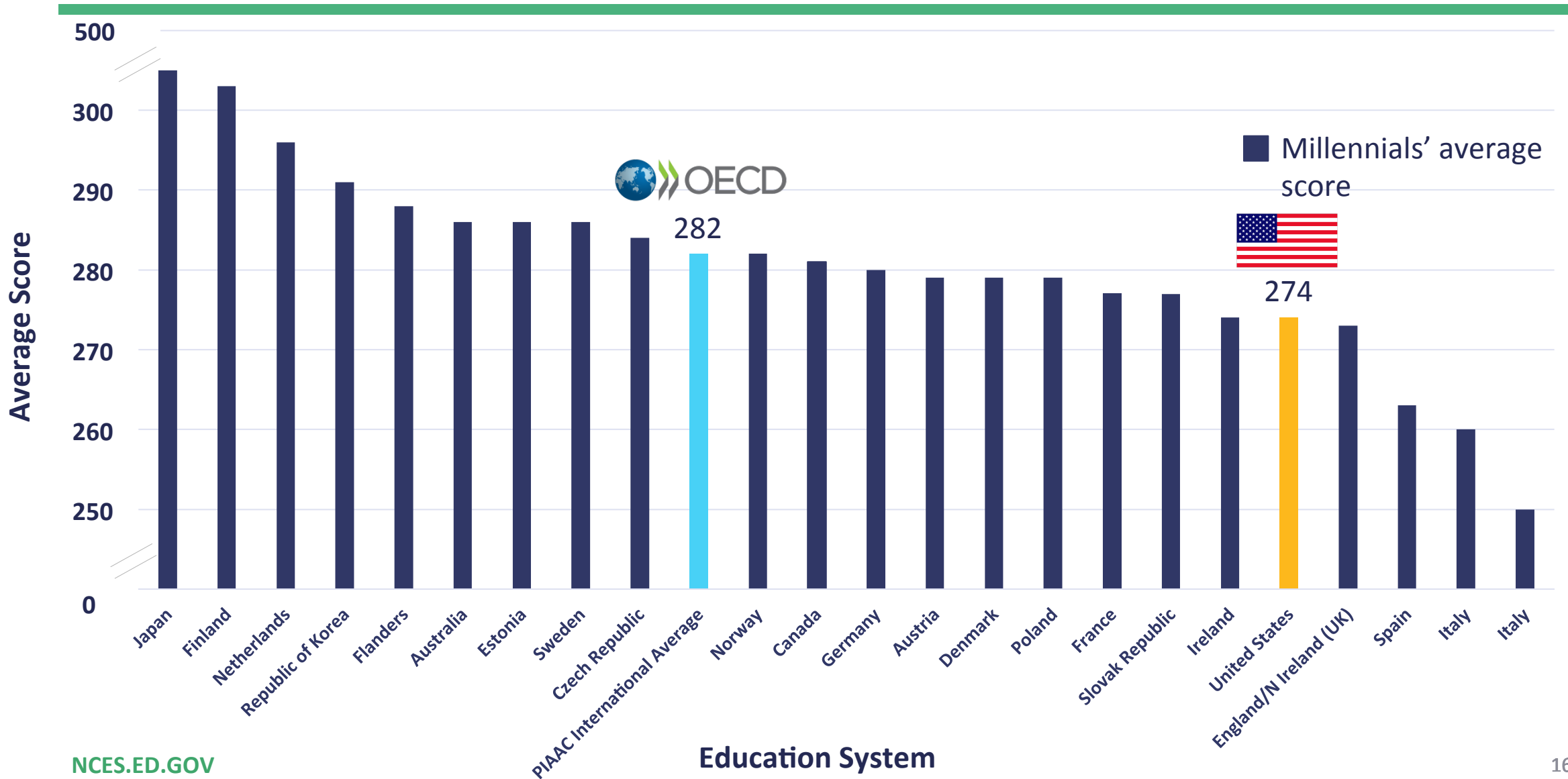
- Japan
- (MA only scored lower than Republic of Korea, Singapore, Chinese Taipei, and Hong Kong)

5. Millennials, the most highly educated generation in U.S. history, have generally low skills compared with international peers.

# U.S. adults ages 16-65 average score on PIAAC 2012 Literacy not different from OECD

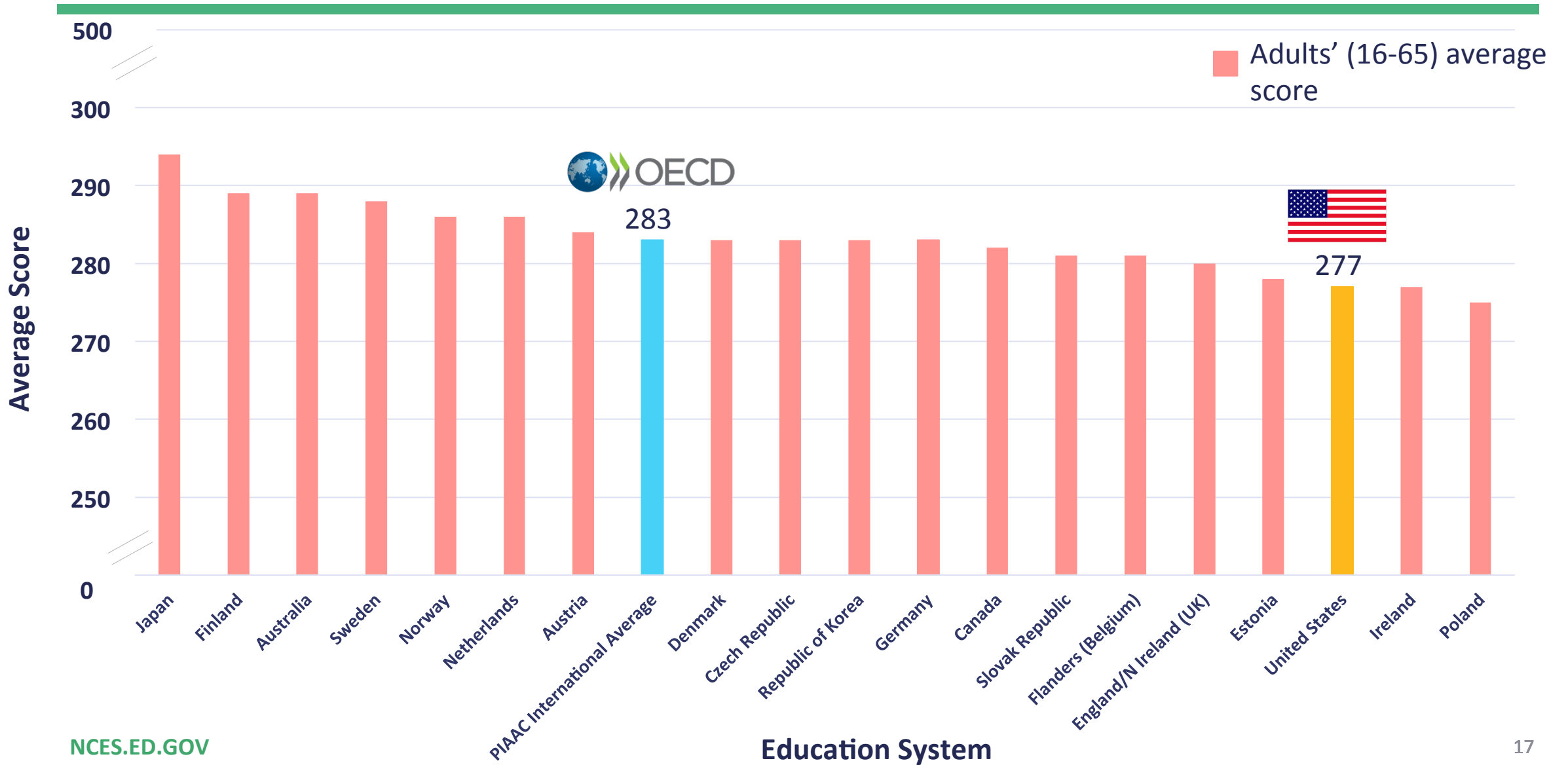


# U.S. Millennials lower than international average in Literacy

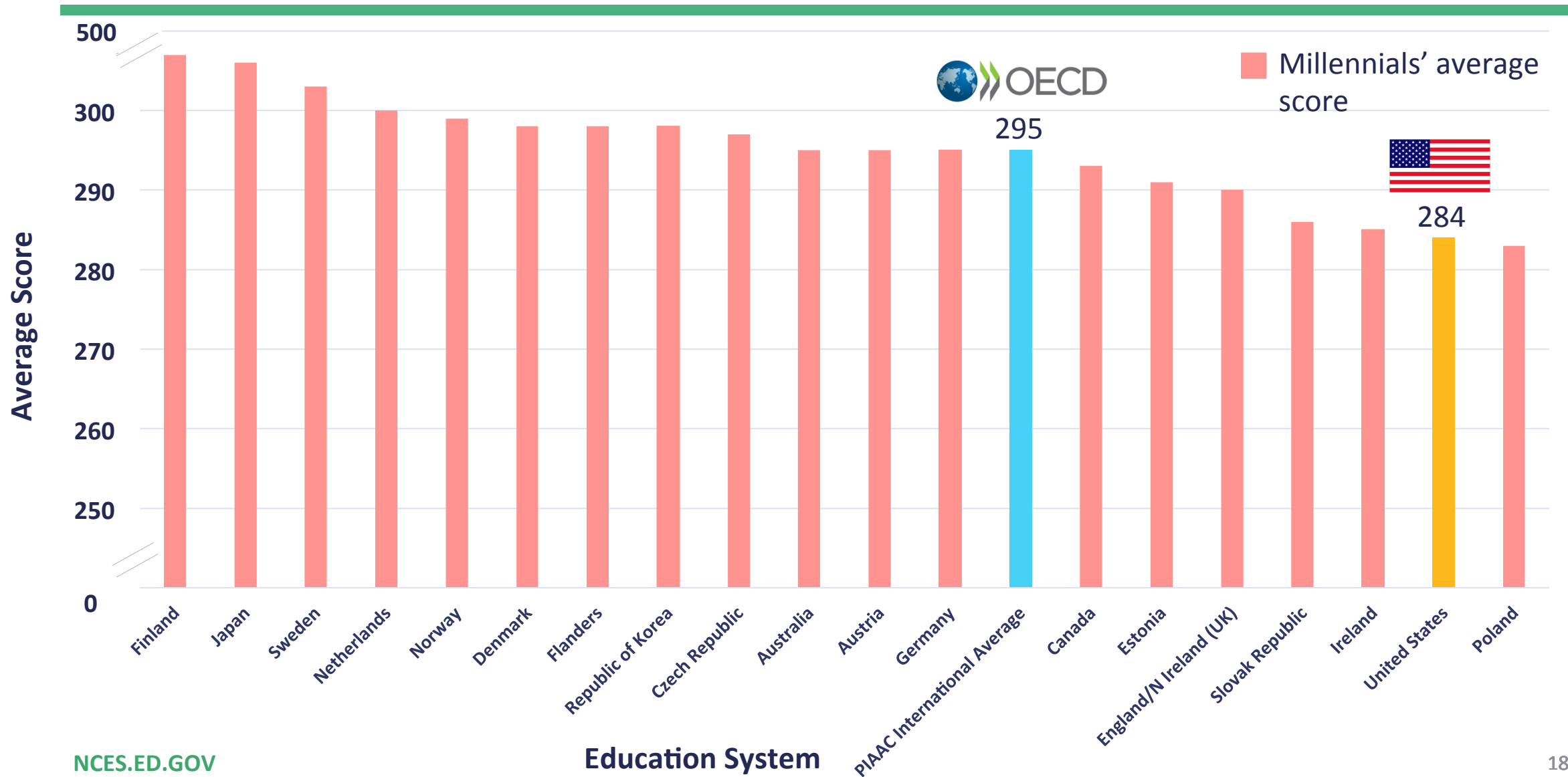




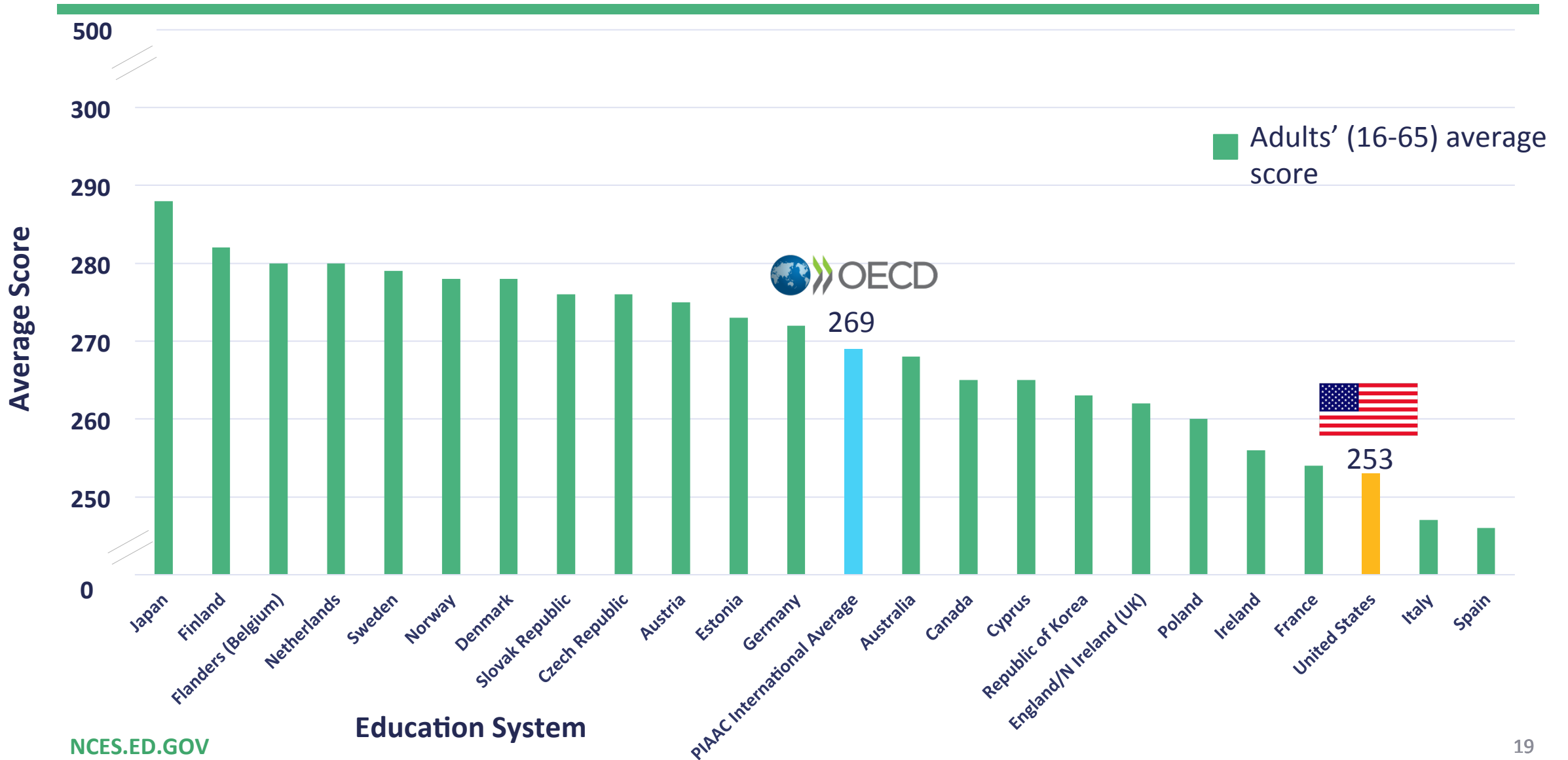
# U.S. adults ages 16-65 average score on PIAAC 2012 Problem Solving lower than international average



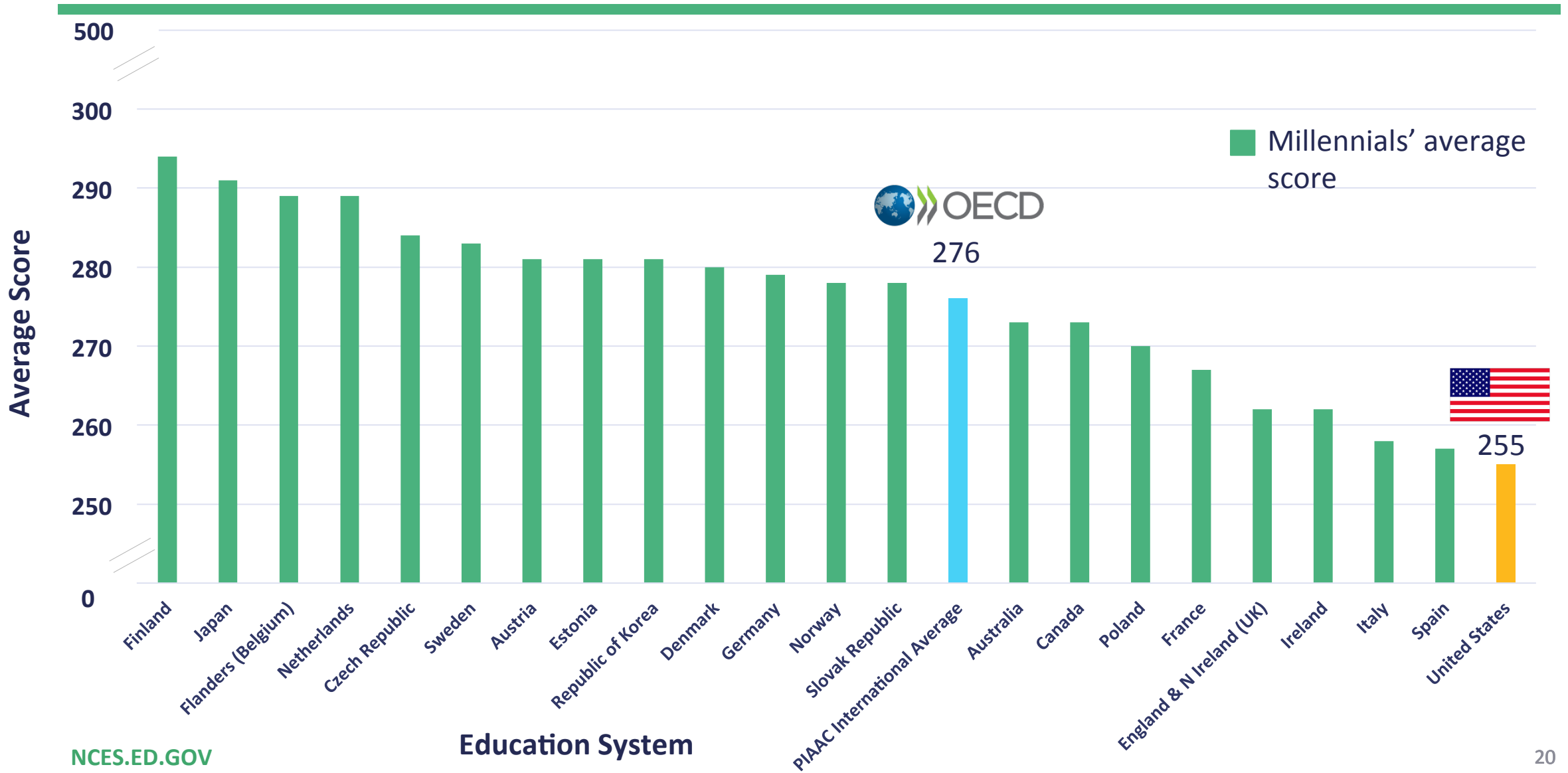
# U.S. Millennials rank near bottom on PIAAC 2012 Problem Solving



# U.S. adults ages 16-65 average score lower than international average on PIAAC 2012 Numeracy



# U.S. Millennials tied for the lowest average score on PIAAC Numeracy 2012



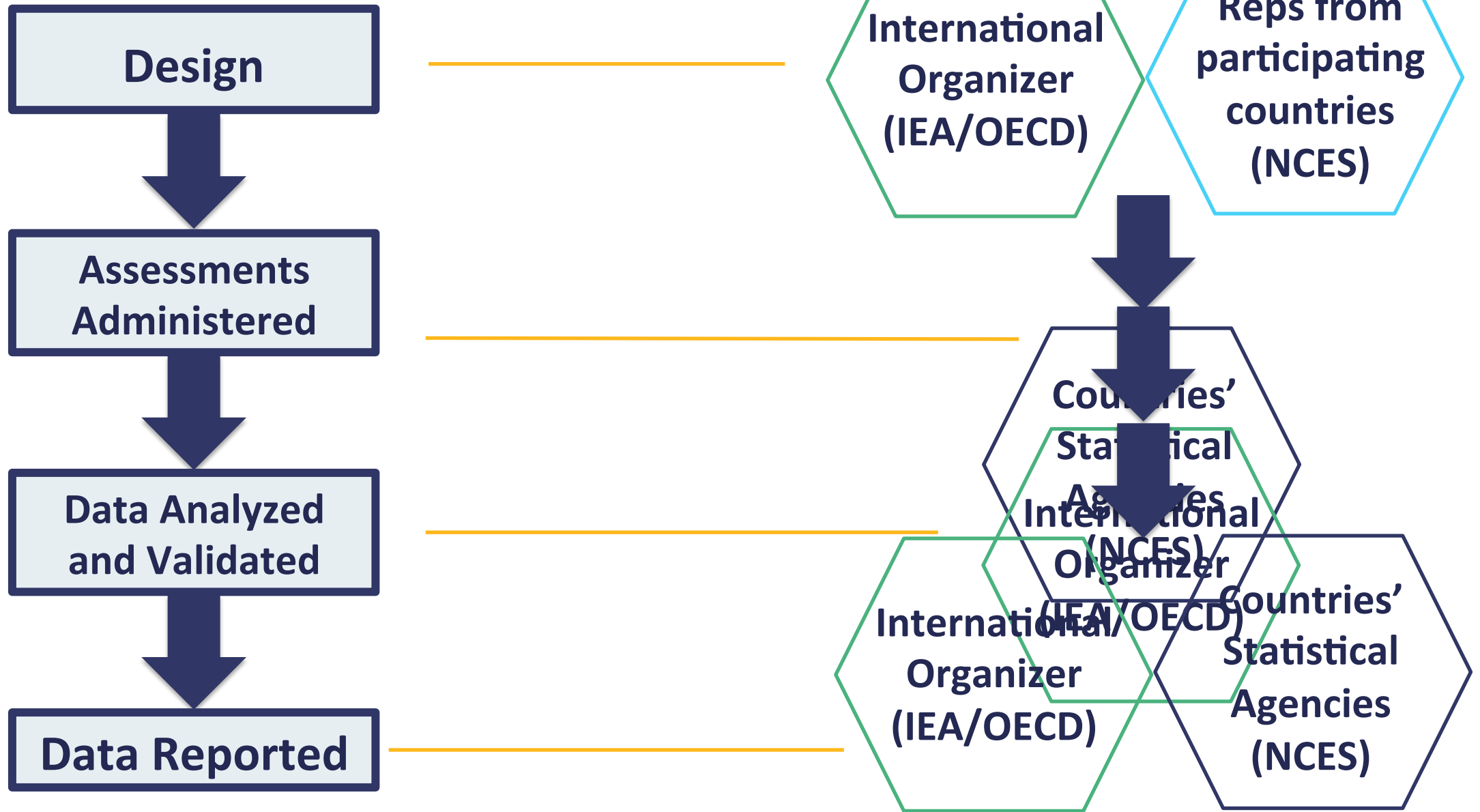
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NCES's role in  
international assessments

# International Assessments Process



# NCES administered assessments

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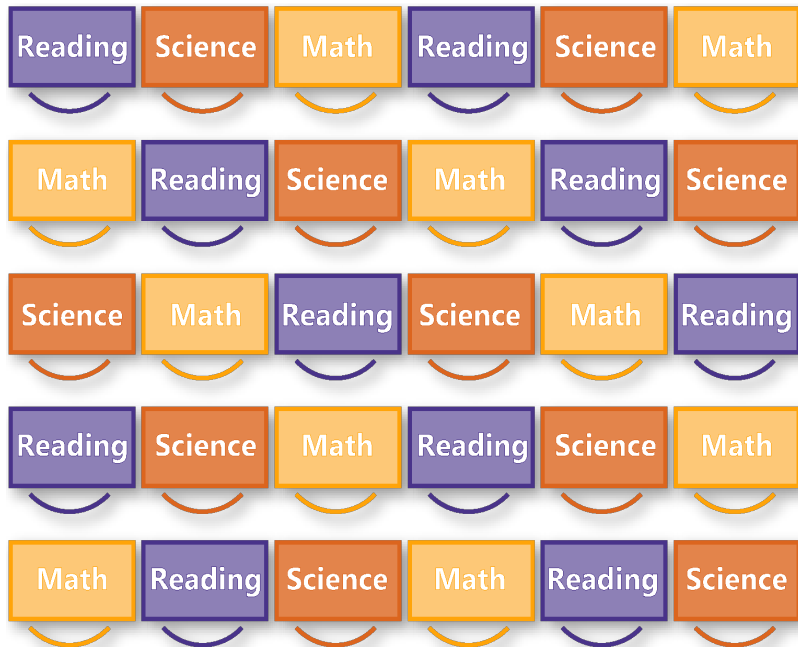
# The U.S. system of assessments

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# NAEP DNA in international assessments



- PISA, TIMSS, etc. based on “long test, short booklet” pioneered by NAEP in early 80s
  - Group, not individual, scores
  - NAEP was first large-scale application of IRT—now used in most large-scale assessments
- NAEP and international assessments share experts, best practices

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Upcoming international  
assessment results

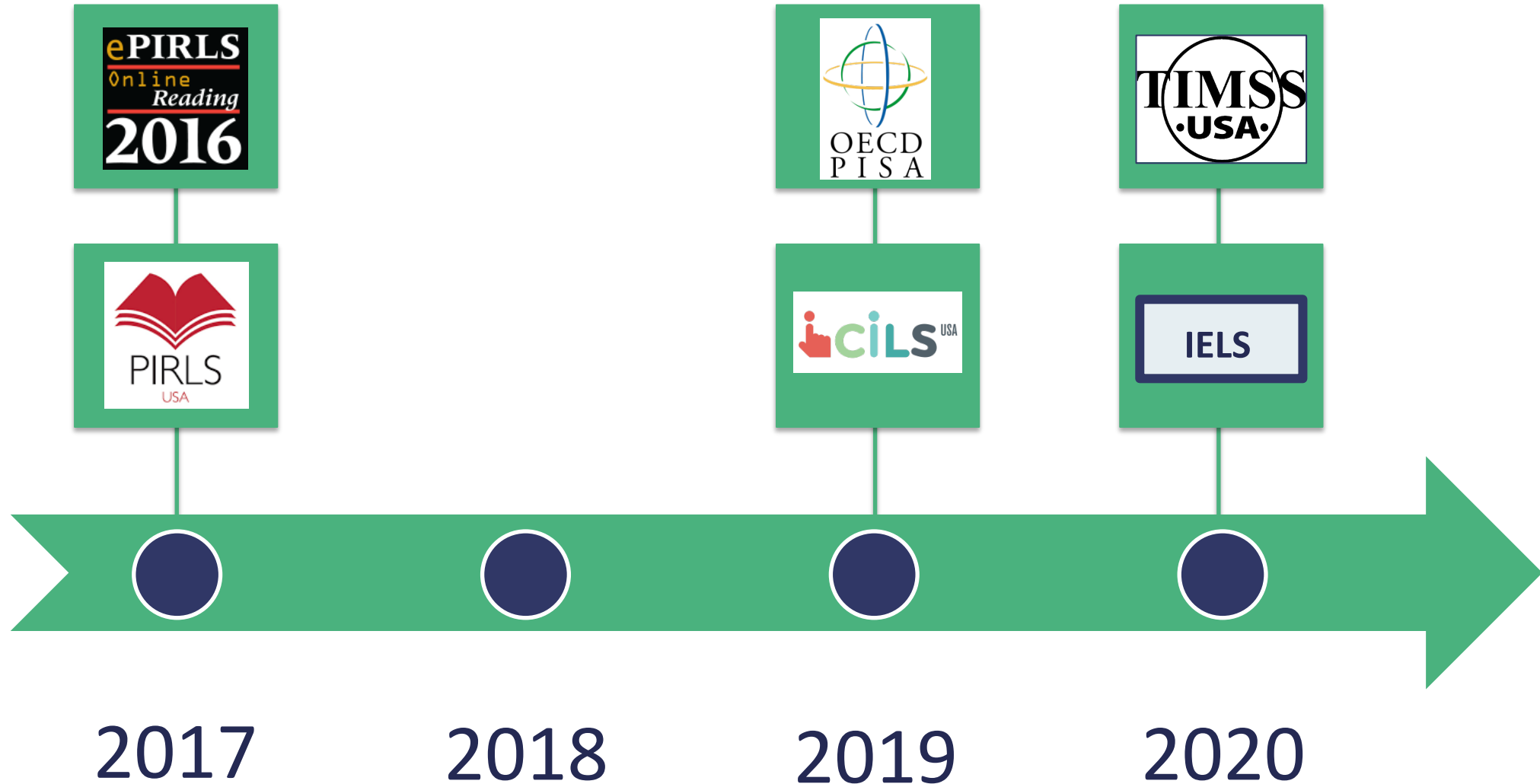
# Upcoming international assessment results

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- December 5, 2017
- 4<sup>th</sup>- grade reading assessment
- First ePIRLS administration
  - Online informational reading
  - Computer-based extension of PIRLS

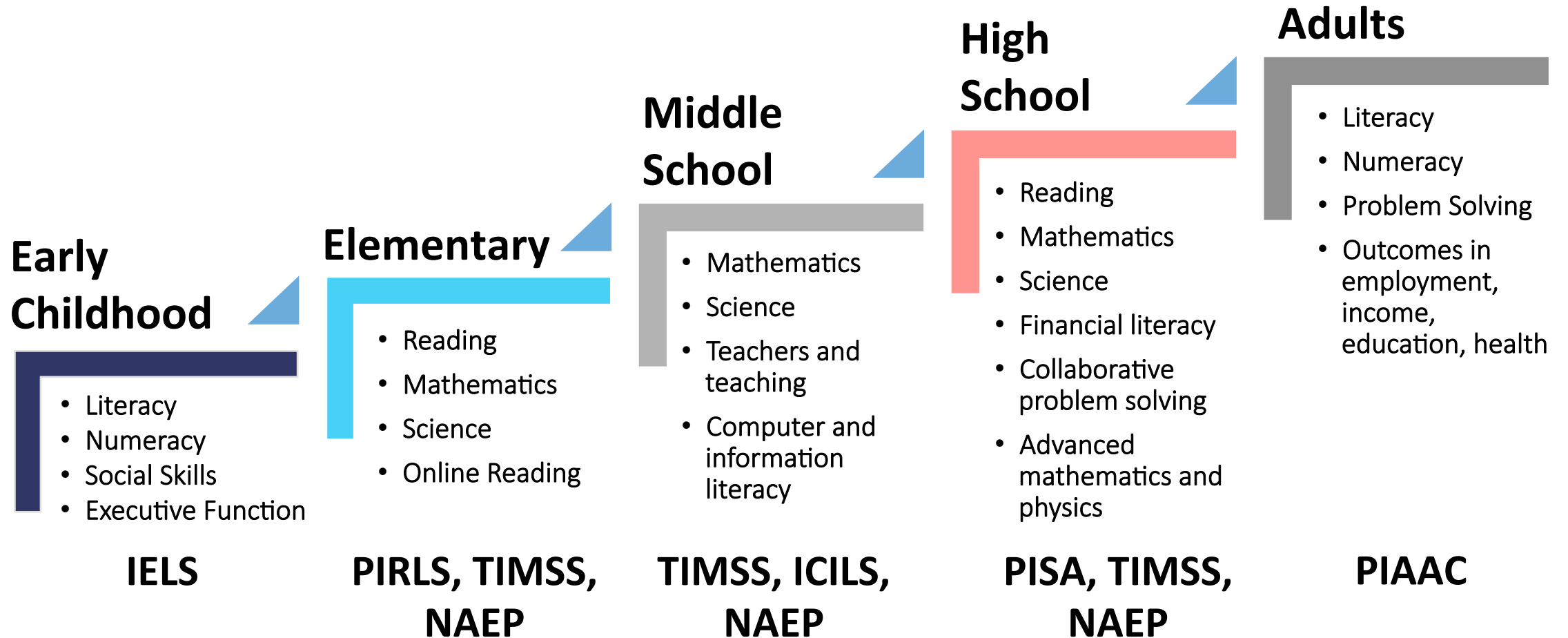
# Upcoming international assessment results



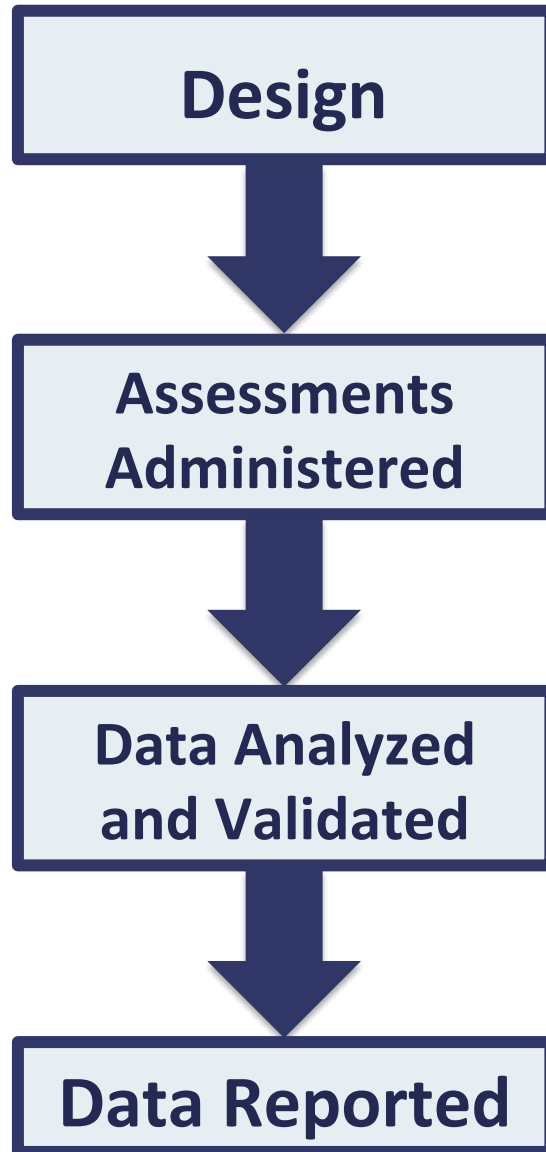
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# NCES Conducted Assessments Across the Lifespan



# International Assessments Process



Five things we've learned



# NCES's role in international assessments

Upcoming international  
assessment results

# NCES BACKGROUND

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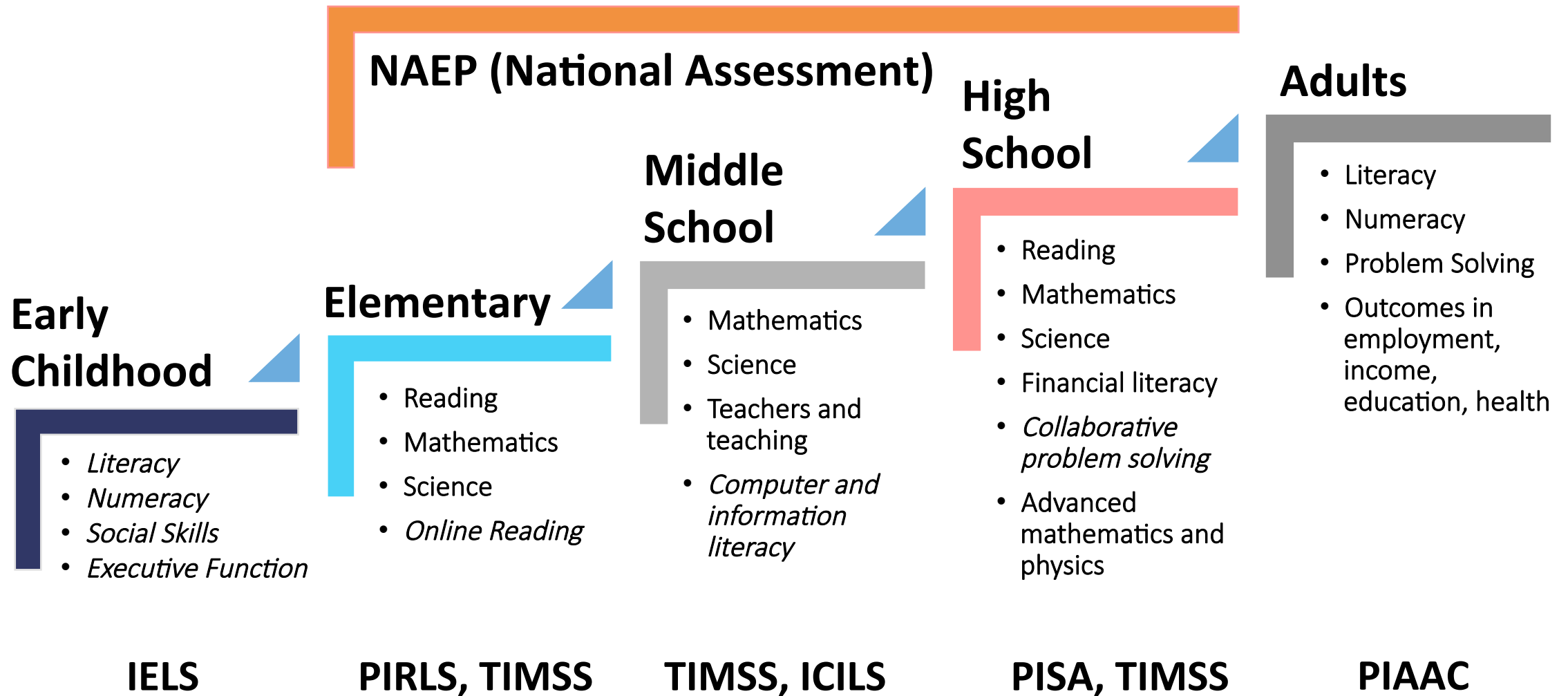
- Origins: 1867 and establishment of the first federal office of education
- NCES reports on the condition and progress of education in the United States
- International assessments are conducted in U.S. by NCES



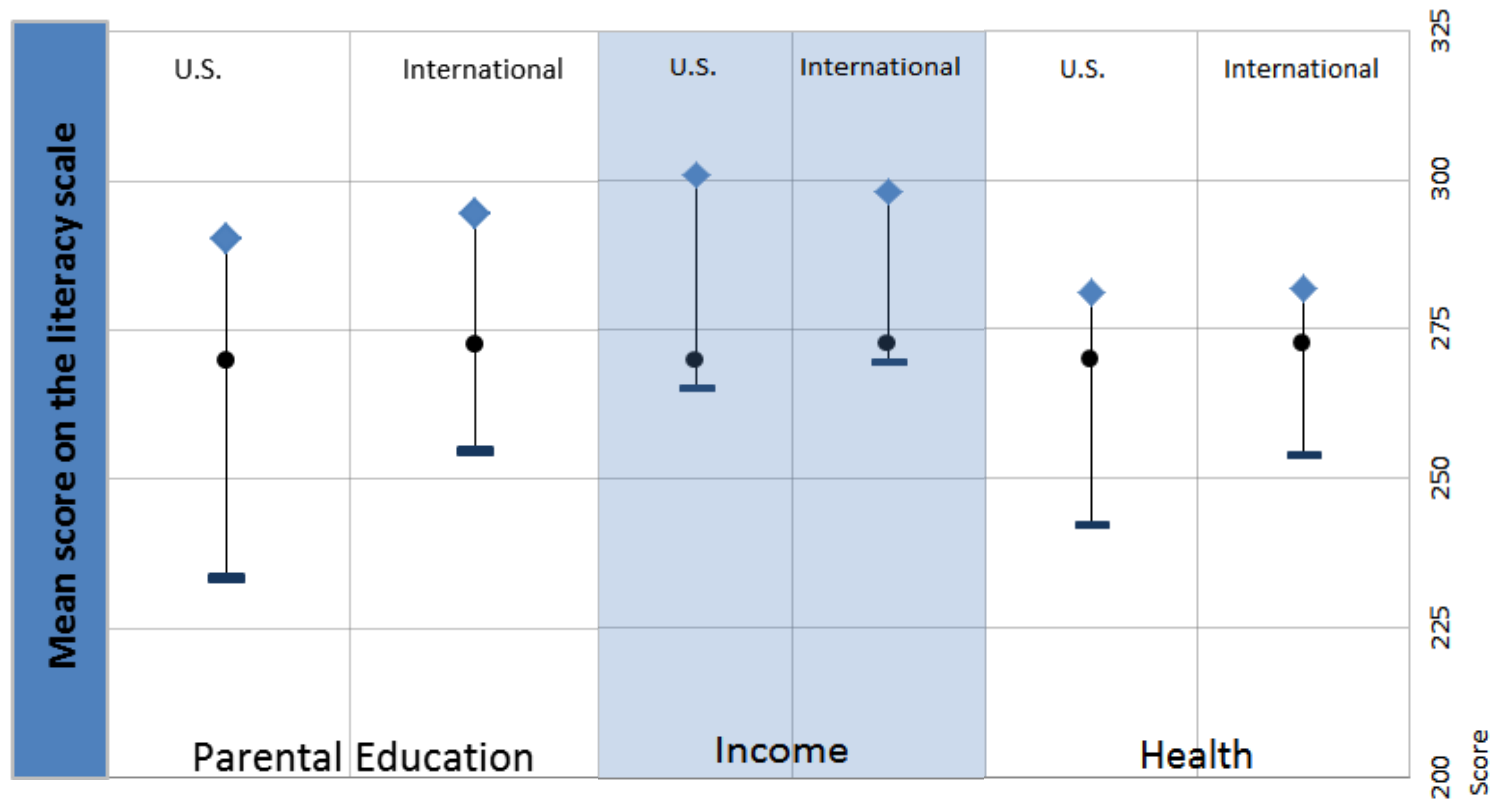
# NCES International Studies Across the Lifespan

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# NCES International Studies Across the Lifespan



# U.S. gaps by parental education, reported income, health, PIAAC



● Avg. score

Parental Education  
 ◆ At least one parent has attained a college degree or higher  
 ■ Neither parent has attained a high school credential

Income  
 ◆ Top quintile  
 ■ Bottom quintile

Health  
 ◆ Excellent/Very good  
 ■ Fair/Poor

# International partners

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## **International Association for the Evaluation of Educational Achievement (IEA)**

- Trends in International Mathematics and Science Study (TIMSS)
- Progress in International Reading Literacy Study (PIRLS)
- International Computer and Information Literacy Study (ICILS)

## **Organization for Economic Cooperation and Development (OECD)**

- Program for International Student Assessment (PISA)
- Program for the International Assessment of Adult Competencies (PIAAC)
- Teacher and Learning International Study (TALIS)
- International Early Learning and Child Wellbeing Study (IELS)

# NCES Organization Chart

