

# The Broad Symposium 2006

## **Schools for Tomorrow:** Globalization and Its Implications for Education

Vivien Stewart, Asia Society  
Susan Traiman, Business Roundtable  
September 18, 2006

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## **Schools for Tomorrow:** Globalization and Its Implications for Education



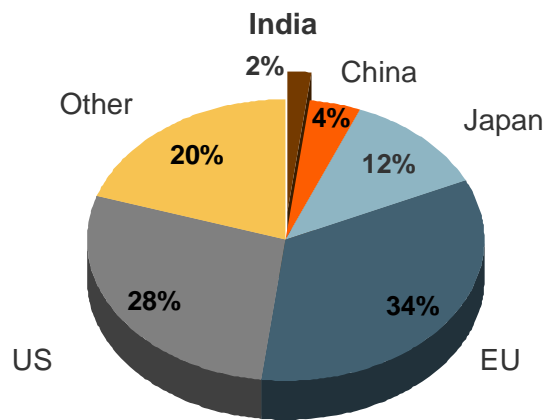
**Vivien Stewart**  
Vice President, Education, Asia Society  
September 18, 2006

- **Global Context**
  - What are the major global trends in economics, demographics and technology?
- Global Education Trends
  - Is the U.S. losing its edge?
- Global Competence
  - What are the implications of trends for U.S. education?
- Global Performance
  - How can U.S. schools rise to the challenge of achieving world standards?
  - What can the U.S. learn from high-performing countries in Asia?

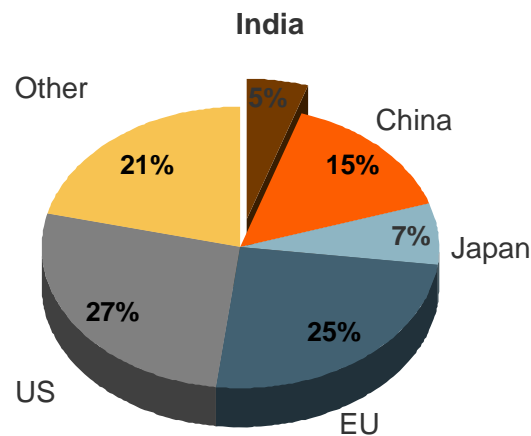
# Global Context/Trends

## Percentage of World GDP

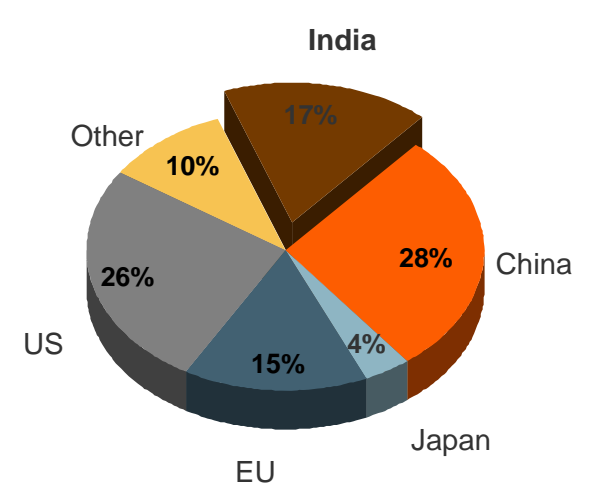
2004



2025



2050



Source: Keystone India

- China, India and Japan are expected to account for about 50% of world GDP within 30 years – up from 18% in 2004.
- One in five U.S. jobs is already tied to international trade.
- Growth for U.S. business is in *overseas* markets.

**If we shrank the earth's population to only 100 people and kept all existing human ratios:**

- 61 from Asia
- 21 from China
- 17 from India
- 13 from Africa
- 12 from Europe
- 5 from United States
- 1 from Australia and New Zealand
- 22 who speak a Chinese dialect, 18 of whom speak Mandarin
- 9 who speak English
- 8 who speak Hindi

**From 1990 on: 3 billion people in China, India and the former Soviet Union, move from closed economies into the global economy.**

# Global Context/Trends

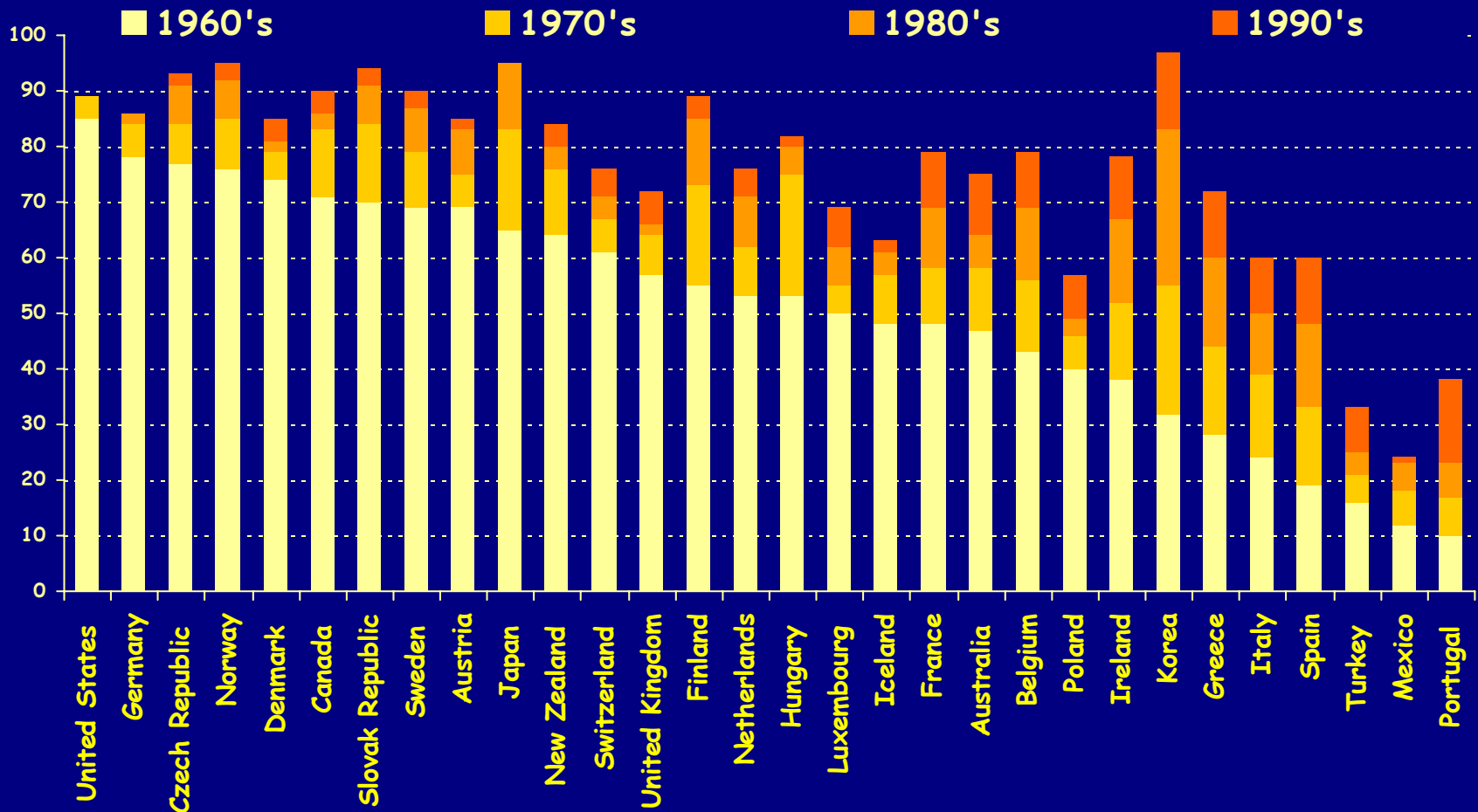
## Global Technology Trends

- “The World is Flat” Tom Friedman.
- Wiring of world from 1998 on means that much work can be done anywhere. 24/7 global production teams.

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# Global Education Trends

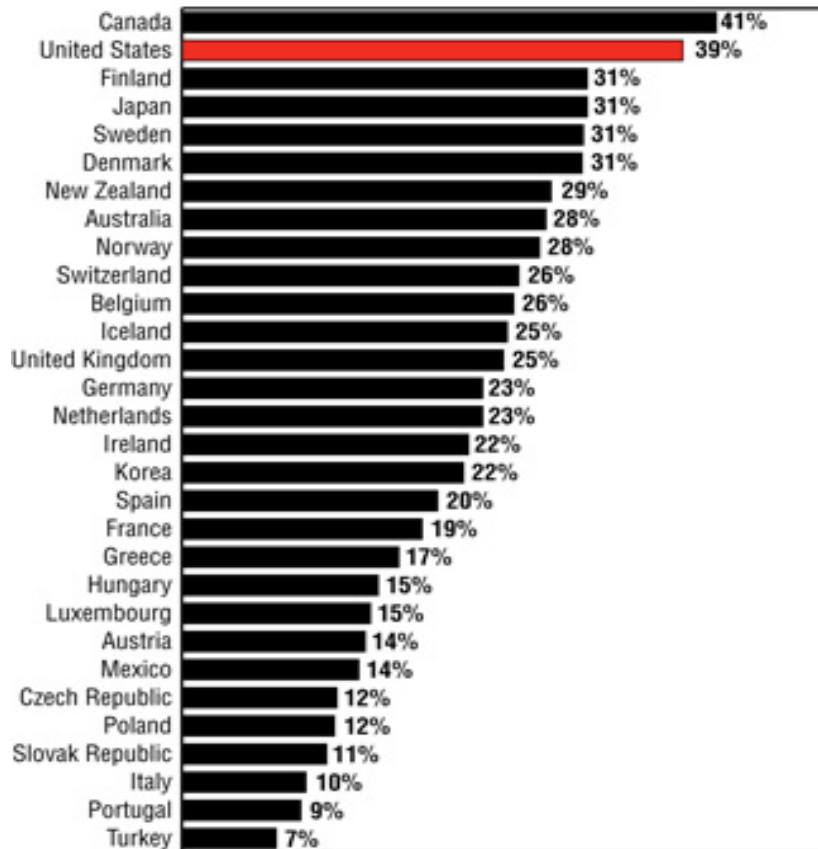
## Percent of Working Age Adults with Upper Secondary Qualifications



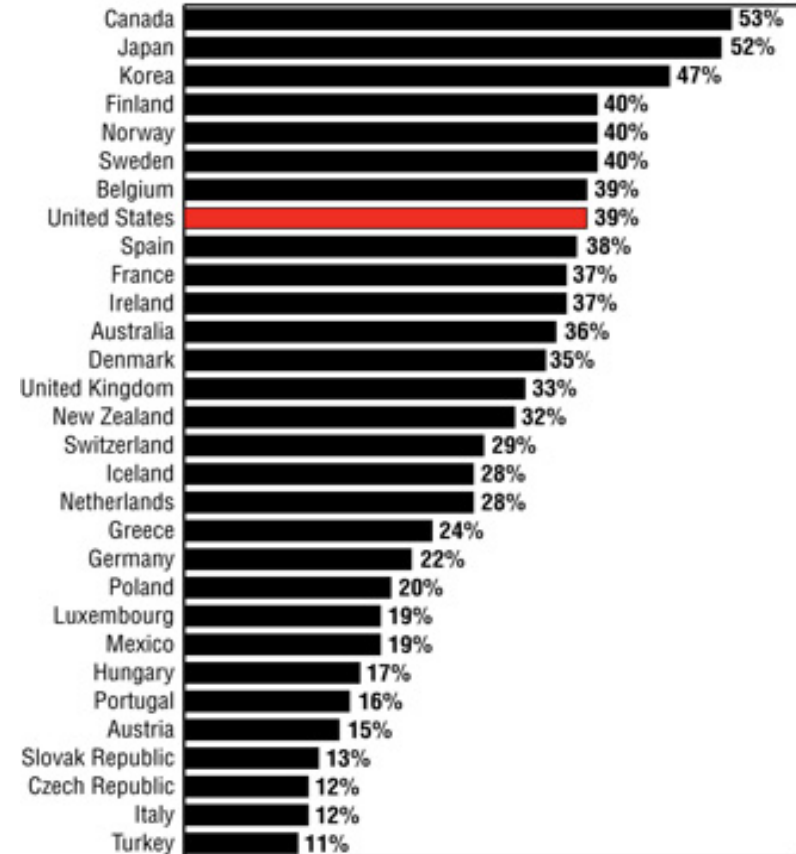
Quantity: Other countries overtaking U.S. in secondary school graduation

# Global Education Trends

## Older Adults (35-64)



## Younger Adults (25 to 34)

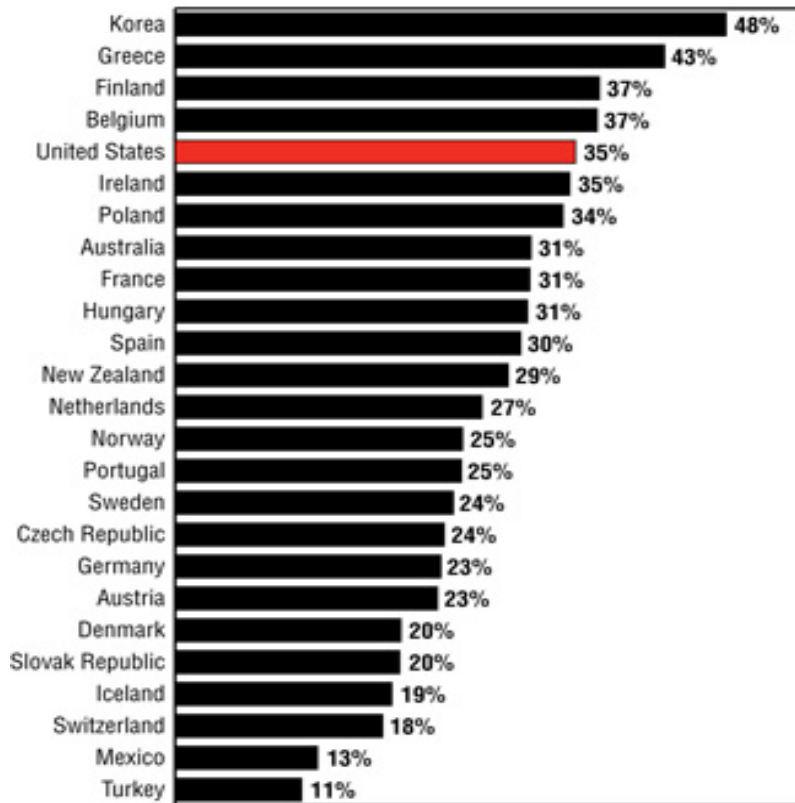


**Quantity:** The U.S. is still among the top nations in the proportion of older adults holding a college degree ... but it drops to 7th in the educational attainment of young adults.

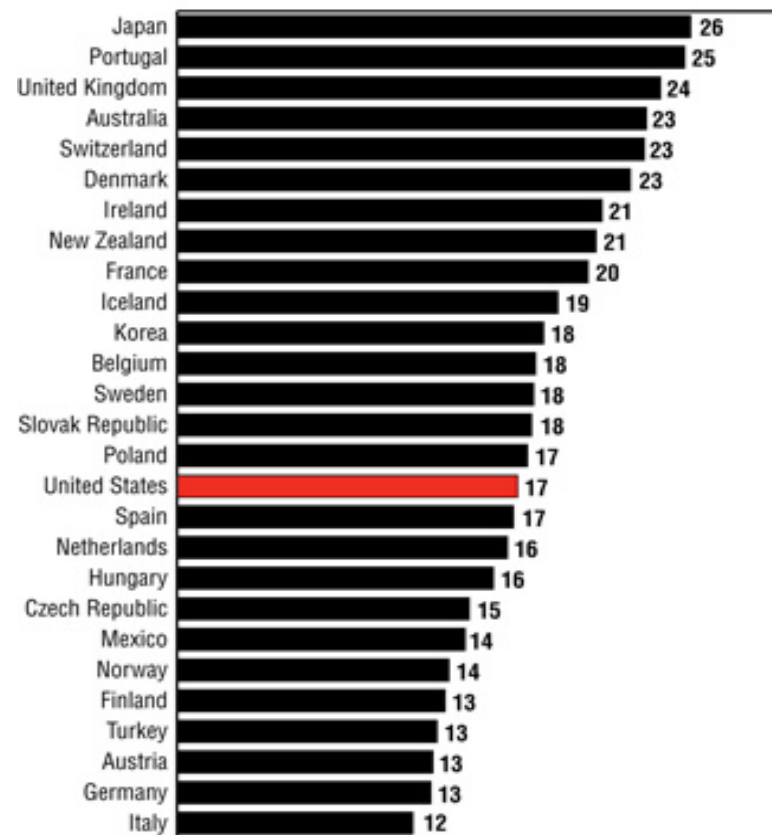
Source: National Center for Public Policy and Higher Education. *Measuring Up: National Report Card on Higher Education*

# Global Education Trends

## College Participation



## College Completion

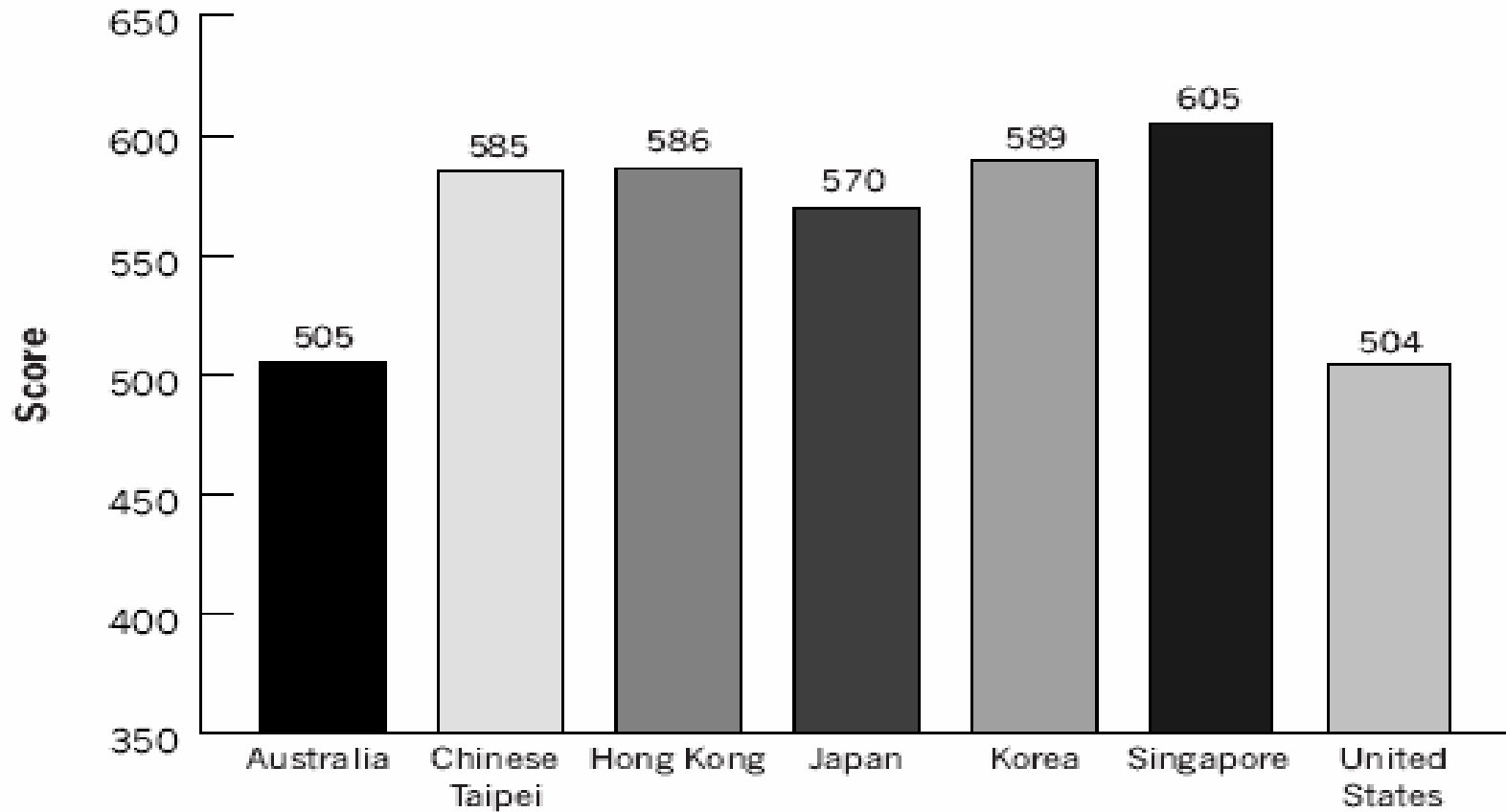


**Quantity:** The U.S. is a leader in young adults (age 18-24) who are enrolled in college, but ranks in the bottom half of college completion.

Source: National Center for Public Policy and Higher Education. *Measuring Up: National Report Card on Higher Education*

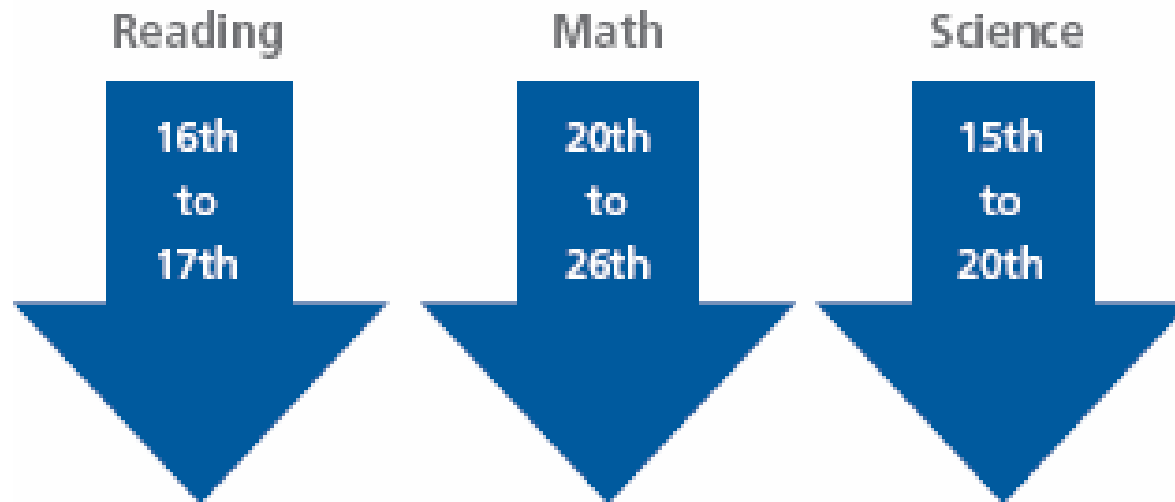
# Global Education Trends

Quality: TIMMS 2003, Average Math Scores 8<sup>th</sup> Grade



# Global Education Trends

Quality: PISA: Low and Declining U.S. Performance



Source: NCES Digest of Educational Statistics 2005; Organization for Economic Cooperation and Development (OSCD), Program for International Student Assessment (PISA), 2003

## Quality: Global Skills

### Current Events:

- National Geographic/Roper Survey shows U.S. students next to last in nine country survey of knowledge of current events.

### Languages:

- Most countries require foreign language from elementary grades.
- 25% of Australian students learn an Asian language.
- Only 50% of U.S. high school students take any language. Most study first year Spanish.

### Study Abroad:

- 0.5% of U.S. students study abroad compared with 3% for France and China, 16% for Ireland and 30% for Singapore.

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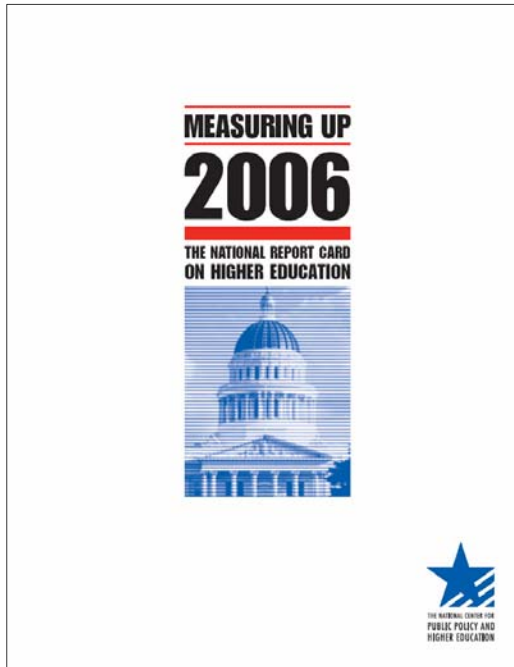
# Global Competence

## Three Goals

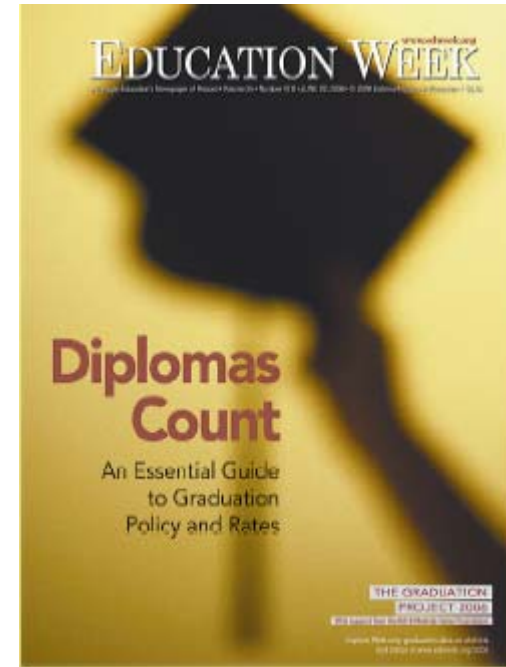
- Raise level of high school graduation and college graduation.
- Increase excellence in math and science.
- Develop global literacy and skills.

# Global Competence

Raise level of high school graduation and college graduation

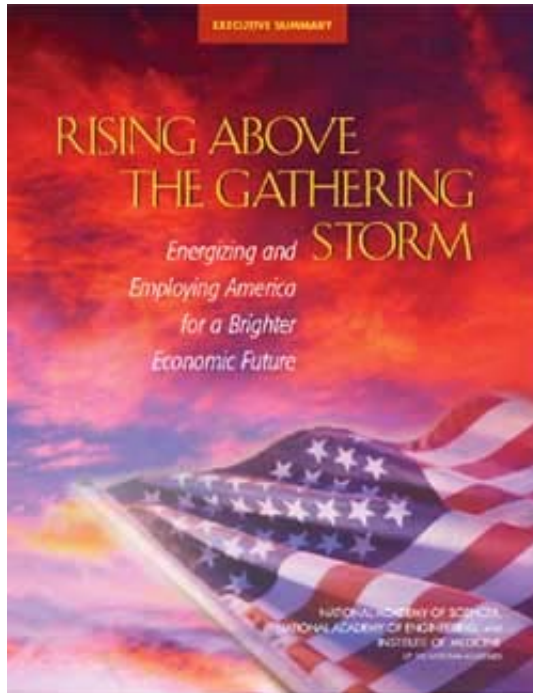


“(America’s) current level of performance will fall short in a world being reshaped by the knowledge-based global economy. Our country and our states need to educate more people with college-level knowledge and skills.”



# Global Competence

## Increase excellence in math and science

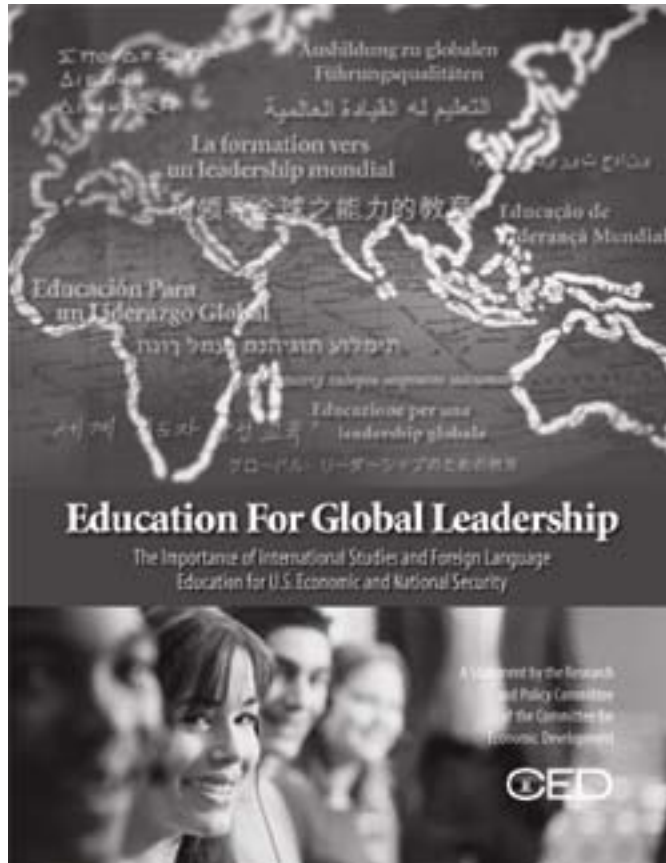


Reports recommend: “vastly improving K-12 math and science education by recruiting 10,000 of America’s brightest students to the teaching profession each year.... and creating opportunities and incentives for middle-school and high-school students to pursue advanced work in science and math.”



# Global Competence

## Develop global literacy and skills



“To compete successfully in the global marketplace, both U.S.-based multinational corporations as well as small businesses increasingly need employees with knowledge of foreign languages and cultures to market products to customers around the globe and to work effectively with foreign employees and partners in other countries.”

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# Global Performance

|  | <b>China</b>  | <b>U.S.</b>  |
|--|---|--|
| <b>National Standards &amp; Aligned Instructions</b> | Ministry of Education sets national standards in both math and science, which drive coherent textbook content, teacher preparation and professional development | Has huge variation in the rigor and quality of standards between states, districts and schools |

# Global Performance

|  | China   | U.S.   |
|--|---|--|
| <b>Strong Core Curriculum</b>  | Biology, chemistry, and physics, as well as algebra and geometry are mandatory for completion of high school.   | Nearly 40 percent of high school students do not take course work more challenging than general biology. |
| <b>Rigorous and Ongoing Preparation of Science &amp; Math Teachers</b> | 90% of 8 <sup>th</sup> grade science and math teachers have degrees in their disciplines and specialist math teachers are employed as early as first grade. | Fewer than 60% of 8 <sup>th</sup> grade science teachers have majors in science disciplines.             |

- The school year in China is a full month longer at the secondary level than American schools.
- Chinese students spend twice as many hours studying as their U.S. peers—in school and outside school in homework, extra tutoring, and studying for examinations.

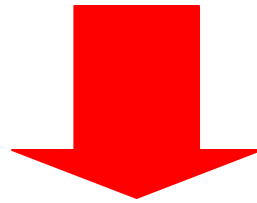
# Global Performance

## Elite and Mass Strategies

- Competitive entry “key” high schools -- with strong math, science, foreign languages, arts, technology, independent research projects and entrepreneurship -- prepare students for leadership in globalized world
- Rural-urban inequalities large but PISA study shows students in poor rural schools do better in math than many Americans

Source: Asia Society report, *Math and Science Education in a Global Age: What the U.S Can Learn from China*.

- Other countries are rapidly and aggressively increasing educational performance to become globally competitive.
- High-performing countries have some common characteristics that U.S. doesn't have.



- Need to benchmark standards and practices internationally.
- Need an urgent response to challenge – like post-Sputnik era – how the U.S. can produce a world-class education system.

## Questions to Ask in Your District

- What should your schools be doing to prepare students to *thrive* not just *survive* in globalized world?
- What steps should you take to bring student performance in math and science up to globally competitive standards?
- Are your schools preparing students with knowledge of the languages and other cultures that are increasingly important to the economic and political future of the U.S.?
- What big national and state strategies would help you significantly ramp up performance?

# Getting Started: Useful Resources

- InternationalEd.org (includes recap of state and national policies, research reports, best practices, and media clips)
- *A World Class Education* Community Action Kit with George Lucas Educational Foundation (<http://www.InternationalEd.org>)
- *Creating a Chinese Language Program in Your School: An Introductory Guide* ([AskAsia.org/Chinese](http://AskAsia.org/Chinese))
- *Schools for the Global Age* (<http://www.InternationalEd.org>)
- *States Prepare for the Global Age* (<http://www.InternationalEd.org>)
- *Education for Global Leadership* by Committee for Economic Development (<http://ced.org>)
- *Rising Above the Gathering Storm* (<http://www.nap.edu/catalog/11463.html>)
- *Tapping America's Potential* ([www.tap2015.org/about/TAP\\_report2.pdf](http://www.tap2015.org/about/TAP_report2.pdf) )

## **The U.S. STEM Talent Gap:** Implications & Challenges for School Systems



Business Roundtable

**Susan Traiman**  
**Director, Public Policy**  
**Business Roundtable**  
**September 18, 2006**

# Tapping America's Potential

## The Education for Innovation Initiative

**TAPPING AMERICA'S POTENTIAL**  
The Education for Innovation Initiative

- AeA
- Business Roundtable
- Business-Higher Education Forum
- Computer Systems Policy Project
- Council on Competitiveness
- Information Technology Association of America
- Information Technology Industry Council
- Minority Business RoundTable
- National Association of Manufacturers
- National Defense Industrial Association
- Semiconductor Industry Association
- Software & Information Industry Association
- TechNet
- Telecommunications Industry Association
- U.S. Chamber of Commerce

**GOAL:**  
Double the number of science, technology, engineering and mathematics graduates by 2015

### GOAL:

Double the number of science, technology, engineering & mathematics graduates by 2015

**2005**

200,000  
annually



**2015**

400,000  
annually

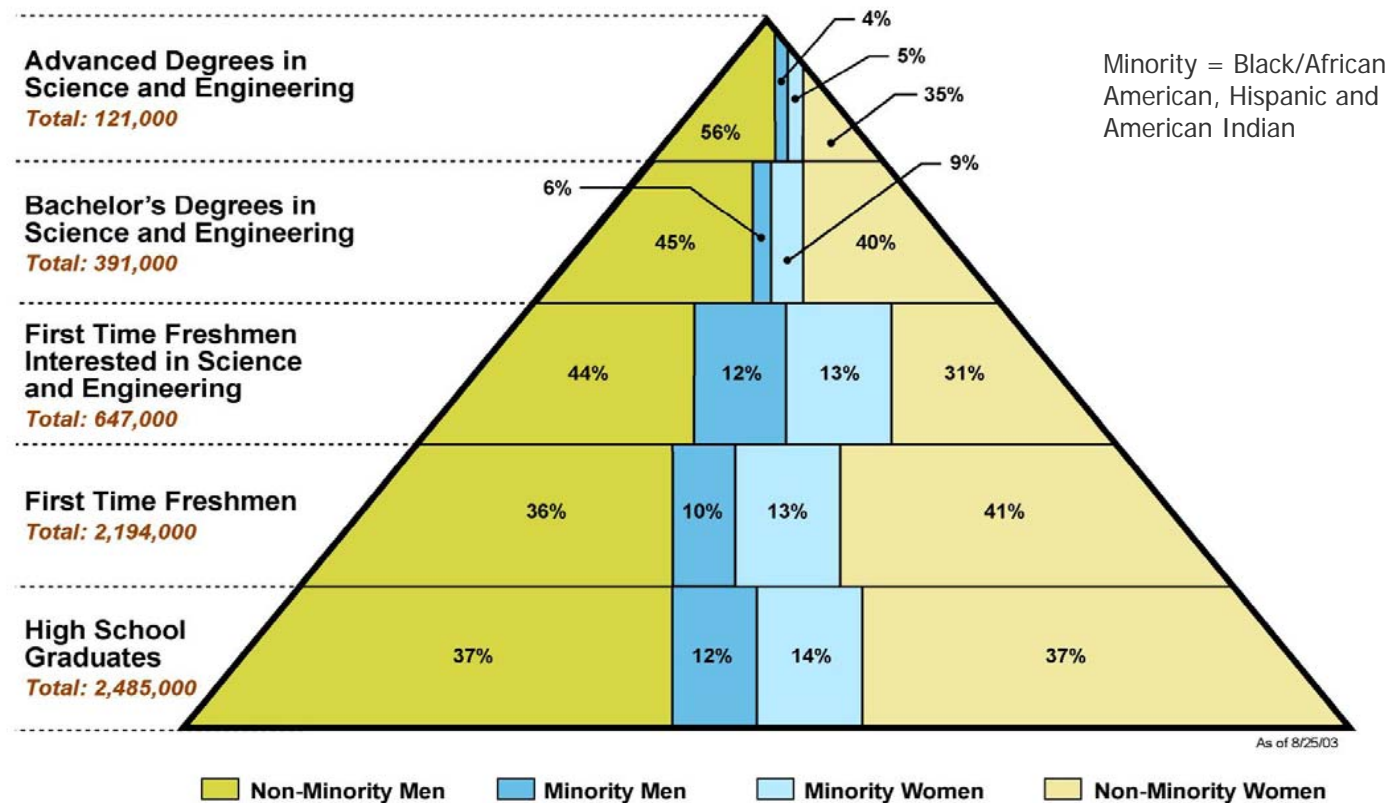
[www.tap2015.org](http://www.tap2015.org)

# The Population Challenge



- **CHINA**  
1,308,917,737
- **INDIA**  
1,085,288,096
- **UNITED STATES**  
296,323,460

## Education Milestones by Race/Ethnicity and Gender



**Source:** Joan Burrelli, NSF, based on 1999 Common Core of Data, U.S. Department of Education, NCES; NCES, 1998 IPEDS Fall Enrollment Survey; UCLA Higher Education Research Institute, 1998 American Freshman Survey (estimate); and NCES, 1998 IPEDS Completions Survey

# The Communications Challenge



**How many times can we say the sky is falling?**

**What's different this time?**

**Who is credible to whom?**

**Without a Sputnik...**

# Hottest college degrees for getting hired

By Anne Fisher, FORTUNE senior writer

September 8, 2006

Dear Annie:

I'm a sophomore in college, trying to decide on a major, and I'm confused because I have several different interests. Can you tell me which kinds of college degrees will be the most likely to lead to a good job in three or four years?

*-Up in the Air*

Dear Up:

The Bureau of Labor Statistics expects that the economy will generate 200,000 more engineering jobs by 2014, and many employers are already noticing a shortage of skilled workers in a variety of engineering fields - civil, mechanical, industrial, you name it. Among the most promising fields now: chemical engineering.... Software engineers are in demand, too. Two other hot majors: accounting and physical therapy.

Don't neglect your language skills: Being multilingual will pay off in marketing, finance, banking, trade, social services, health care, and engineering - especially if at least one of the languages you learn is an Asian one.

*- Annie*

# The Expectations Challenge

- Jobs requiring technical training – in science, technology, engineering, and math – are growing five times faster than other occupations.
- Which approach would you take with your students about career choices?

## Americans are reluctant to influence children's career choices

■ Parents  
■ Non-parents

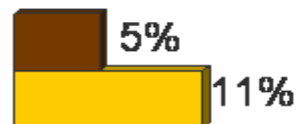
Allow child to pursue whatever career path he/she feels suits best



Encourage child to pursue career in science, tech, engineering, math but balance with child's preference



Try to persuade child toward career in science, tech, engineering, math



Source: Business Roundtable, December 2005 (Peter Hart & David Winston)

# Challenges for School Districts

As education leaders, how do we balance different imperatives?

- Educate all
- Provide elementary students with teachers who are generalists
- Pay for educators based on standard salary schedules
- Staff schools based on pre-determined student/teacher ratios
- Focus on the basics (reading and math)
- Aim to achieve state standards



- Generate scientists and engineers
- Provide elementary students with teachers who are specialists
- Pay for educators based on supply and demand
- Staff schools more flexibly
- Focus on STEM (math is the gatekeeper)
- Aim for international benchmarks

# The Broad Symposium 2006

## Contact Information

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