



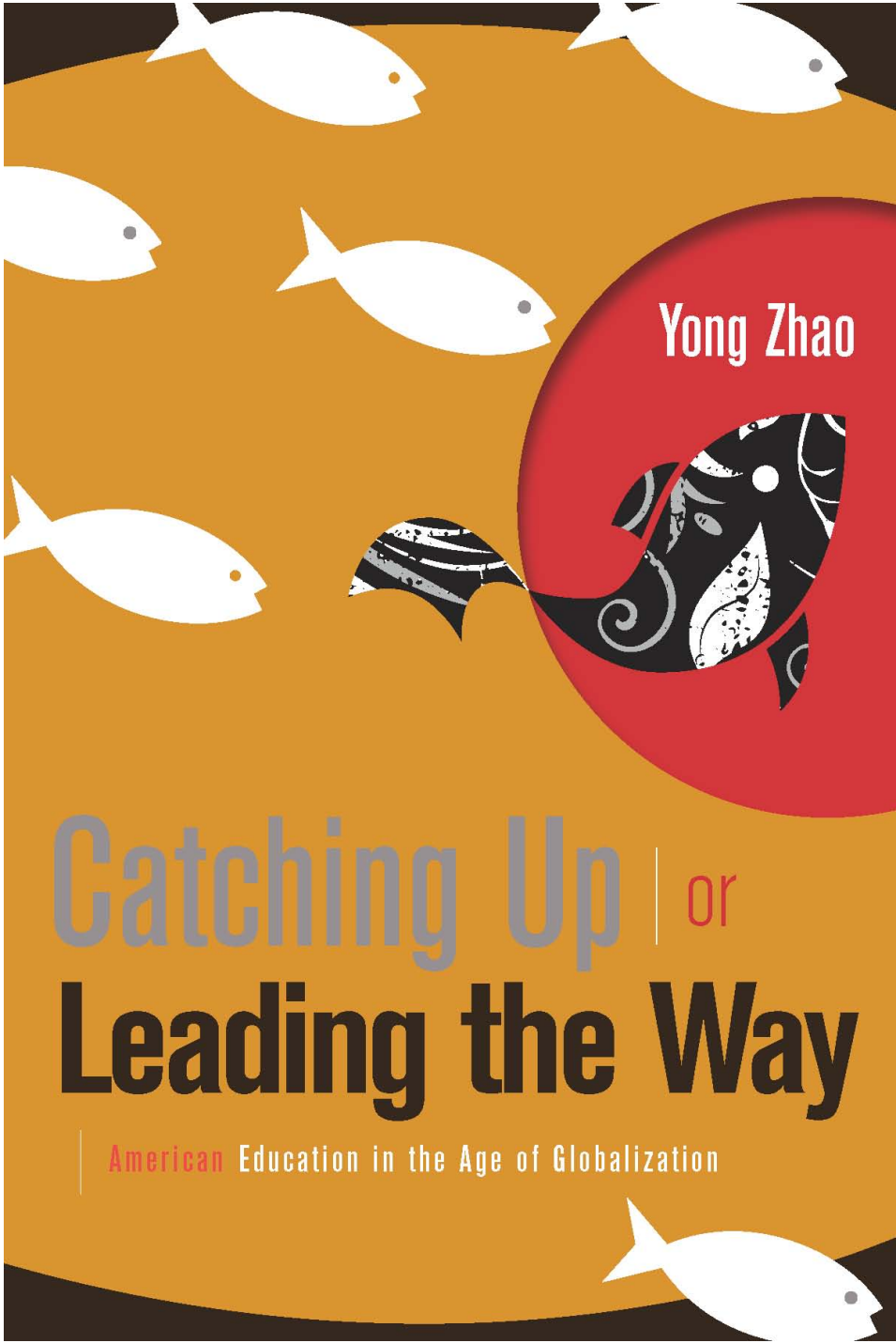
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# Catching up or Leading the Way:

## American Education in the Age of Globalization

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Yong Zhao

Catching Up | or  
Leading the Way

American Education in the Age of Globalization

# Fixes

- Centralization
- Standardization (Standards & Standardized Testing)
- Accountability
- Charter Schools
- Science, Technology, Engineering, and Math (STEM)

Fixing the wrong thing...

When I was growing up, my parents told me, "Finish your dinner. People in China and India are starving." I tell my daughters, "Finish your homework. People in India and China are starving for your job."

---Thomas Friedman, 2005



Meanwhile, nations like China and India realized that with some changes of their own, they could compete in this new world. And so they started educating their children earlier and longer, with greater emphasis on math and science.

--President Obama, 2011 State of the Union Address

# Global Achievement Gap

## **The New York Times**

### Top Test Scores From Shanghai Stun Educators

By Sam Dillon

December 7, 2010

### A Sputnik Moment for U.S. Education

*China delivers another wake-up call to those who think American schools are globally competitive.*

By Chester E. Finn Jr.

December 8, 2010

## **The Wall Street Journal**

### Why Chinese Mothers Are Superior

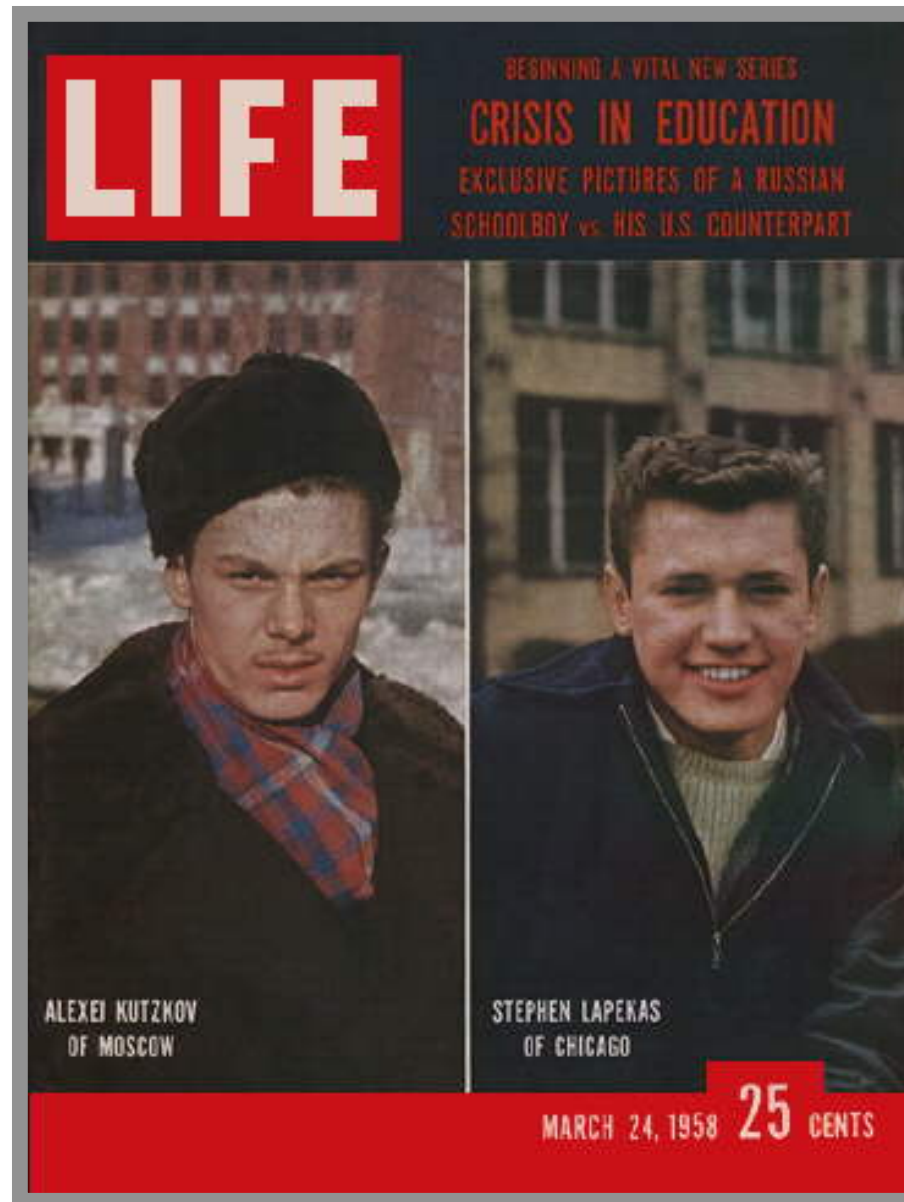
*Can a regimen of no playdates, no TV, no computer games and hours of music practice create happy kids? And what happens when they fight back?*

By Amy Chua

January 8, 2011

Inside photos showed Alexei doing complicated experiments in physics and chemistry and reading aloud from *Sister Carrie*.

1958  
USSR



Stephen, by contrast, retreated from a geometry problem on the blackboard and the caption advised, "Stephen amused class with wisecracks about his ineptitude." Seated at a typewriter in typing class, Stephen tells us "I type about one word a minute."



Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world.

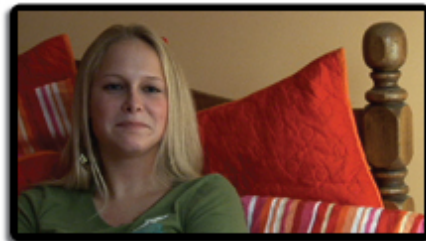
the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people.

We are raising a new generation of Americans that is scientifically and technologically illiterate.

*To Glenn Seaborg  
With appreciation*

1983 Japan

***Two Million Minutes***, vividly reveals that American students are no longer “at risk” of falling behind -- they are now clearly behind even Third World students in India and China, in addition to being in 24th place among developed countries.



By comparing how these students prioritize their time (approximately four years or “two million minutes” of high school), the film demonstrates that the typical student in the U.S. spends much less time on his/her education and gives less thought to future career opportunities than his/her global peers in India and China.

--2 million minutes

Source: <http://www.2mminutes.com/pressblog6.html>

# 2007 China India

# A Long History of Bad Test-takers

- 1960s
  - FIMS: 12<sup>th</sup> out of 12 countries
  - FISS: 14<sup>th</sup> out of 18 countries
- 1970s/1980s
  - SIMS: 12, 14, 12, 12 out of 15 (number systems, algebra, geometry, calculus)
  - SISS: 14<sup>th</sup> (biology), 12<sup>th</sup> (chemistry), 10<sup>th</sup> (physics) out of 14
- 1990s—2007: TIMSS (8<sup>th</sup> graders)
  - 28<sup>th</sup> out of 42 in 1995
  - 15<sup>th</sup> in 2003
  - 9<sup>th</sup> in 2007

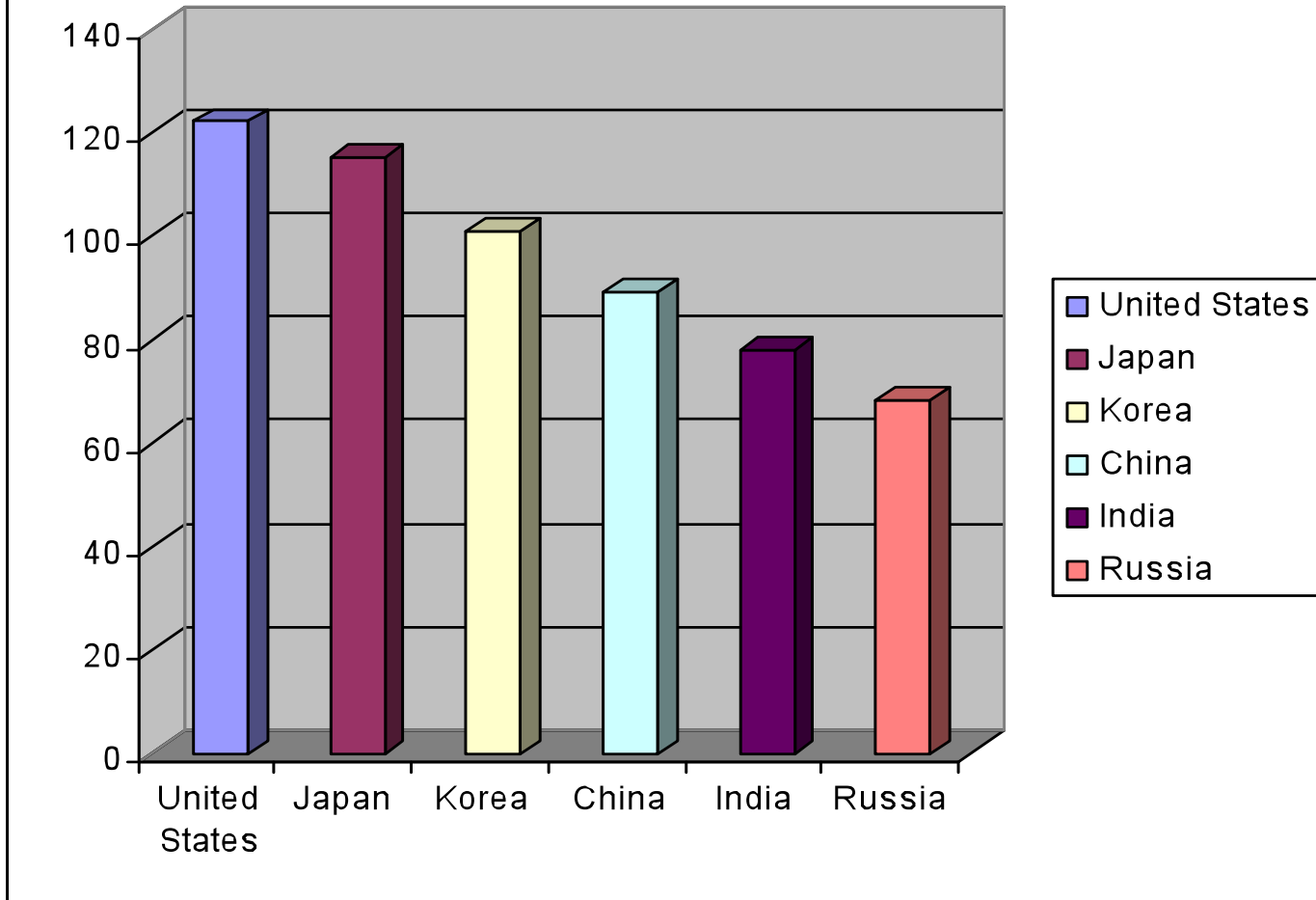
But...



Remember — for all the hits we've taken these last few years, for all the naysayers predicting our decline, America still has the largest, most prosperous economy in the world. (Applause.) No workers -- no workers are more productive than ours. No country has more successful companies, or grants more patents to inventors and entrepreneurs. We're the home to the world's best colleges and universities, where more students come to study than any place on Earth.

--President Obama, 2011 State of the Union Address

### 2007-2008 Global Competitiveness Index



[http://www.weforum.org/pdf/Global\\_Competitiveness\\_Reports/Reports/gcr\\_2007/gcr2007\\_rankings.pdf](http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/gcr_2007/gcr2007_rankings.pdf)

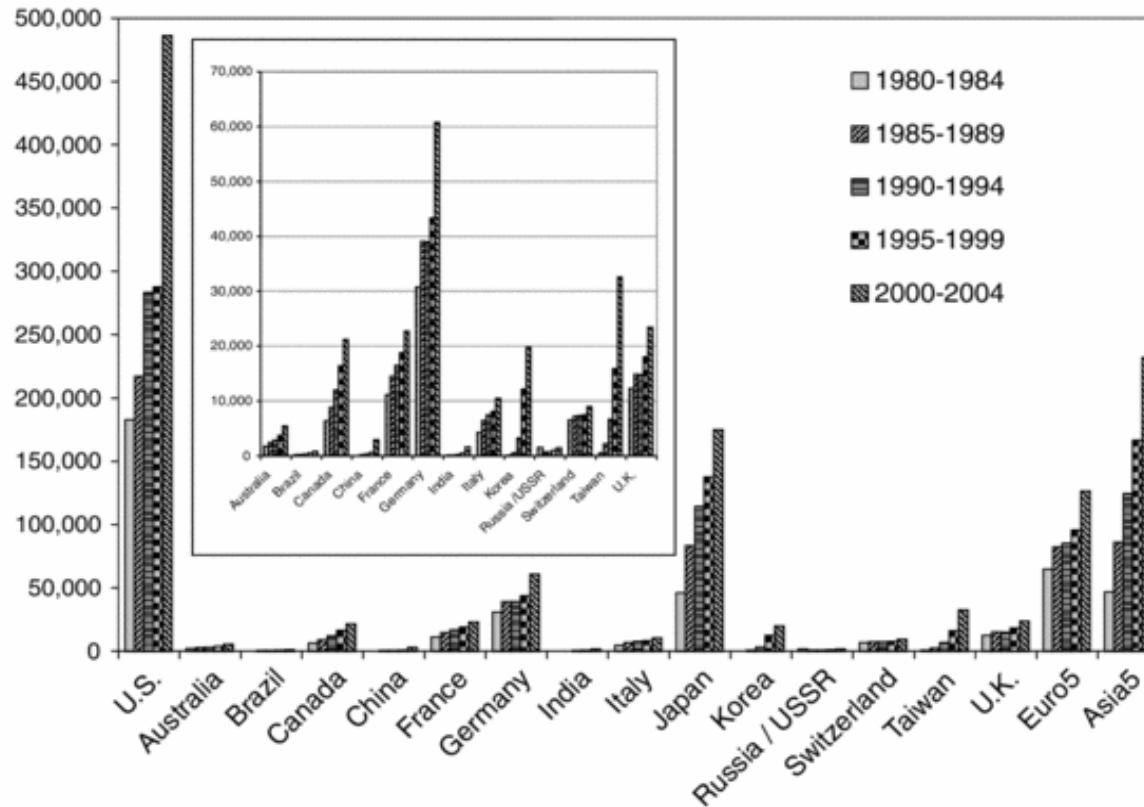
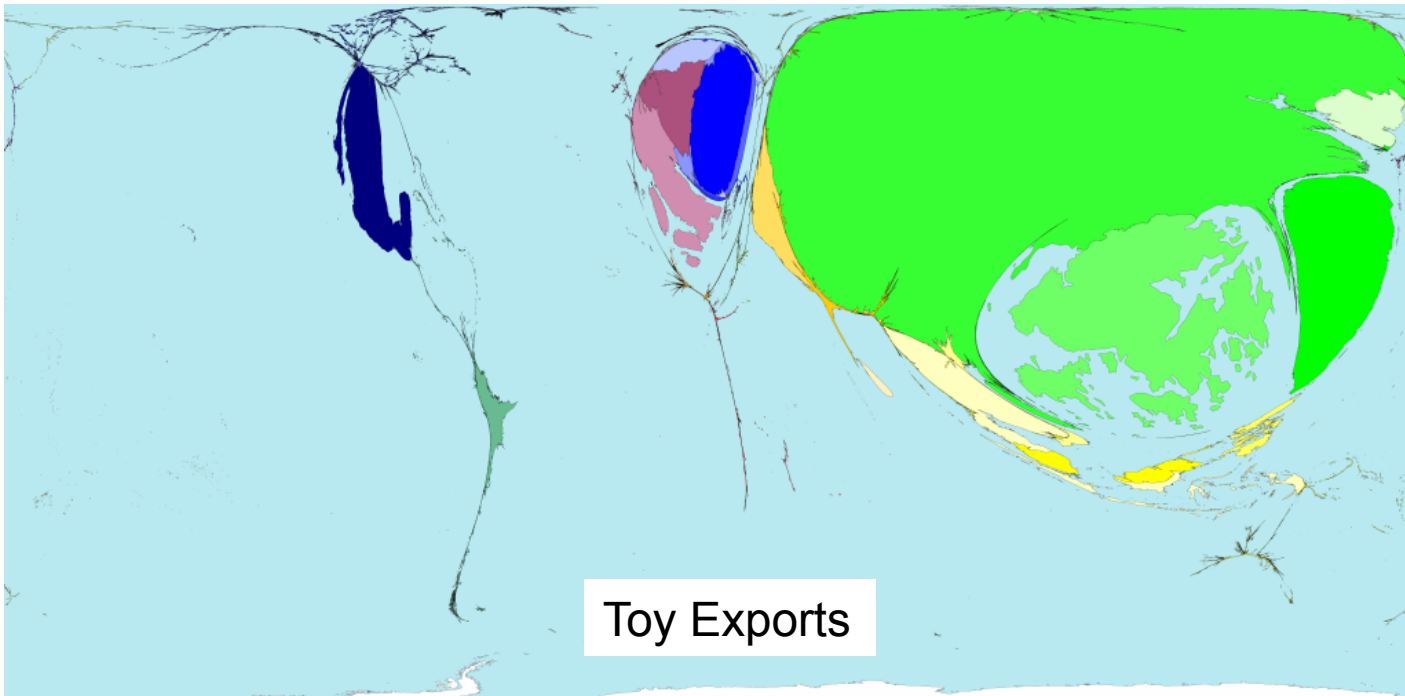
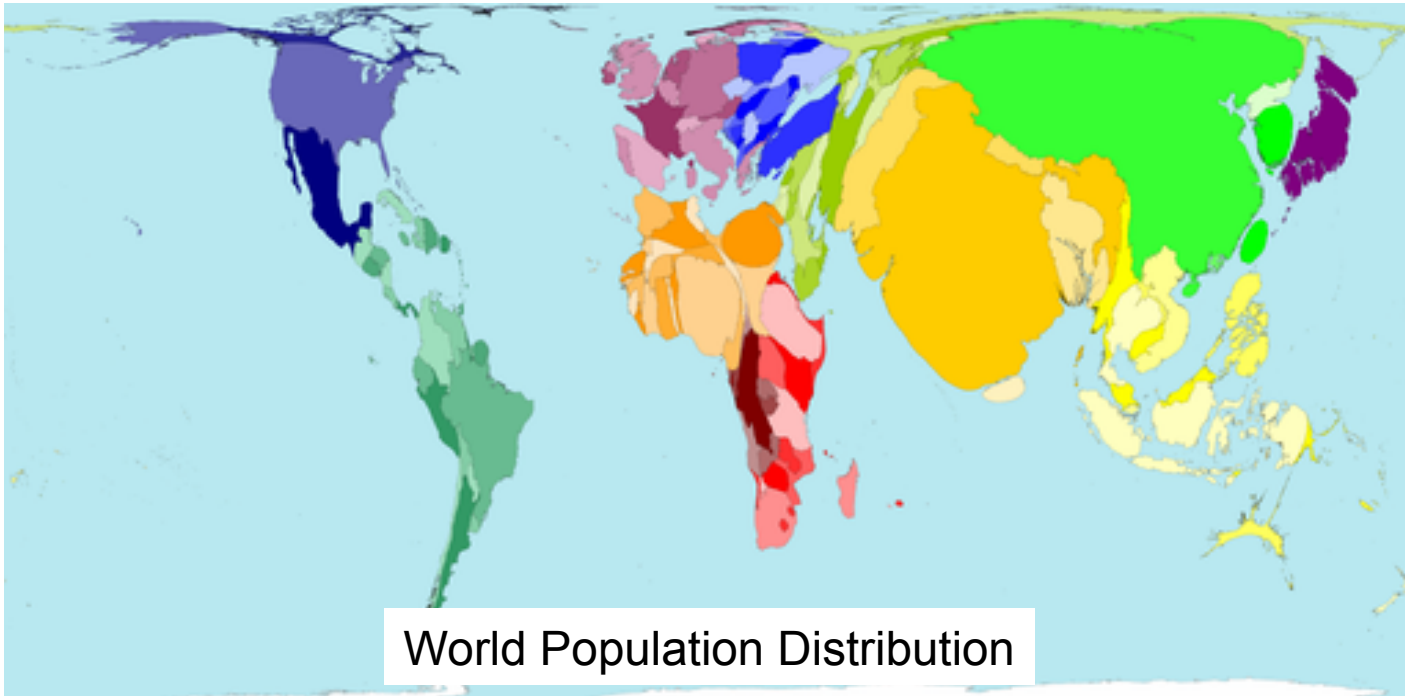


FIGURE C.1 Number of U.S. patents in all classes awarded between 1980 and 2004 (up to October 21, 2004). The Euro5 data combine the data for the five West European countries, and the Asia5 data combine the data for the five Asian countries. The insert shows the data without the data from Japan, the United States, and the Euro5 and Asia5 groups. SOURCE: USPTO.



And

[China 2002]

In December 2002, the Chinese Ministry of Education issued a policy designed to reform assessment and evaluation in elementary and secondary schools. This document, entitled *Ministry of Education's Notice Regarding Furthering the Reform of Evaluation and Assessment Systems in Elementary and Secondary Schools*, calls for alternative assessments that go beyond simply testing academic knowledge. It specifically forbids ranking school districts, schools, or individual students based on test results or making test results public.

**[China 2005]**

### **High school curriculum reform**

Among the problems targeted by the reforms:

- Overemphasis on knowledge transmission
- Too many required and uniform courses, which limited students' individual development
- Too much overlapping content, resulting in excessive coursework burden on students
- Overemphasis on the value of individual discipline, resulting in too little interdisciplinary and social integration

Remedies:

- Credit system
- More electives, fewer required courses
- Local subjects/school based curriculum
- Integrated studies
- New subjects (art, environment, technology, etc)

## China's education reform since 1999...

- **380** instructional hours reduced for grades 1 to 9
- **140** instructional hours reduced for math (grades 1 through 6)
- **156** instructional hours added for PE (grades 1 through 6)
- **347** instructional hours reduced for required courses in high school (grades 10 to 12)
- **410** instructional hours added for electives

**[Korea 2000]**

## **Revised 7th National Curriculum**

The ultimate goal is to cultivate creative, autonomous, and self-driven human resources who will lead the era's developments in information, knowledge and globalisation.

- Promote fundamental and basic education that fosters sound human beings and nurtures creativity
- Help students build self-leading capacity so that they will meet the challenges of today's globalisation and information development
- Implement learner-oriented education that suits the students' capability, aptitude and career development needs
- Ensure expanded autonomy for the local community and schools in curriculum planning and operation.



All this energy has been spent on raising test scores, not nurturing creativity of any other aspect of human nature.

--Lee Ju Ho, Minister of Education, Science, and  
Technology  
Jan 28, 2011, Chronicle of Higher Education

# Singapore

Since 1997, Singapore another frequent high flyer in international comparative studies, has engaged in a major curriculum reform initiative. Entitled *Thinking Schools, Learning Nation*, this initiative aims to develop all students into active learners with critical thinking skills and to develop a creative and critical thinking culture within schools. Its key strategies include:

- The explicit teaching of critical and creative thinking skills;
- The reduction of subject content;
- The revision of assessment modes; and;
- A greater emphasis on processes instead of on outcomes when appraising schools.
- In 2005, the Ministry of Education in Singapore released another major policy document *Nurturing Every Child: Flexibility and Diversity in Singapore Schools*, which called for a more varied curriculum, a focus on learning rather than teaching, and more autonomy for schools and teachers (Ministry of Education, 2005).

## Japan

- Since 2001, Japan has been working to implement its Education Plan for the 21st Century, which has three major objectives:
- The first is “enhancing emotional education,” that is, cultivating students as emotionally well-rounded human beings.
- The second objective is “realizing a school system that helps children develop their individuality and gives them diverse choices” by moving towards a diverse, flexible educational system that encourages individuality and cultivates creativity.
- The third is “promoting a system in which the school’s autonomy is respected” through decentralizing educational administration, enhancing local autonomy, and enabling independent self-management at the school level. (Iwao, 2000)

Why?

# Achievement Gaps



# The First International Mathematics Study (FIMS)

- Year data collected: 1964
- Target Population: 13 year olds
- Participating Countries: Australia, Belgium, England, Finland, France, Germany (FRG), Israel, Japan, Netherlands, Scotland, Sweden, United States.
- US finished second to last (Sweden)

**Jefferson told us where to look to see if a nation is a success.**

**He did not say to look at test scores.**

**Instead, he said to look at “life, liberty, and the pursuit of happiness.”**

**--Keith Baker (2007)**

## 40 years later: Wealth

FIMS scores in 1964 correlate at  $r = -0.48$  with 2002 PPP-GDP. In short, **the higher a nation's test score 40 years ago, the worse its economic performance on this measure of national wealth.**



# 40 years later: Rate of Growth

The nations that scored better than the U.S. in 1964 had an average economic growth rate for the decade 1992-2002 of 2.5%; the growth rate for the U.S. during that decade was 3.3%. The average economic growth rate for the decade 1992-2002 correlates with FIMS at  $r = -0.24$ .

Like the generation of wealth, **the rate of economic growth for nations improved as test scores dropped.**

# 40 years later: Productivity

There is no relationship between FIMS scores and hourly output,  $r = -.03$ . In 2004, the average hourly output of those nations that outscored the U.S. in 1964 was 3.4% lower than U.S. productivity, though the three nations with higher hourly output all had higher test scores than the U.S.

# 40 years later: Quality of Life

The average rank on the Quality of Life Index for nations that scored above the U.S. on FIMS was 10.8. The U.S. ranked seventh (lower numbers are better). **FIMS scores correlated with Quality of Life at  $r = -0.57$ .**

# 40 years later: Democracy

On the Economy Intelligence Unit's Index of Democracy, **those nations that scored below the median on FIMS have a higher average rank on achieving democracy (9.8) than do the nations that scored above the median (18).** Once again, the U.S. scored higher on attaining democracy than did nations with higher 1964 test scores.

# 40 years later: Livability

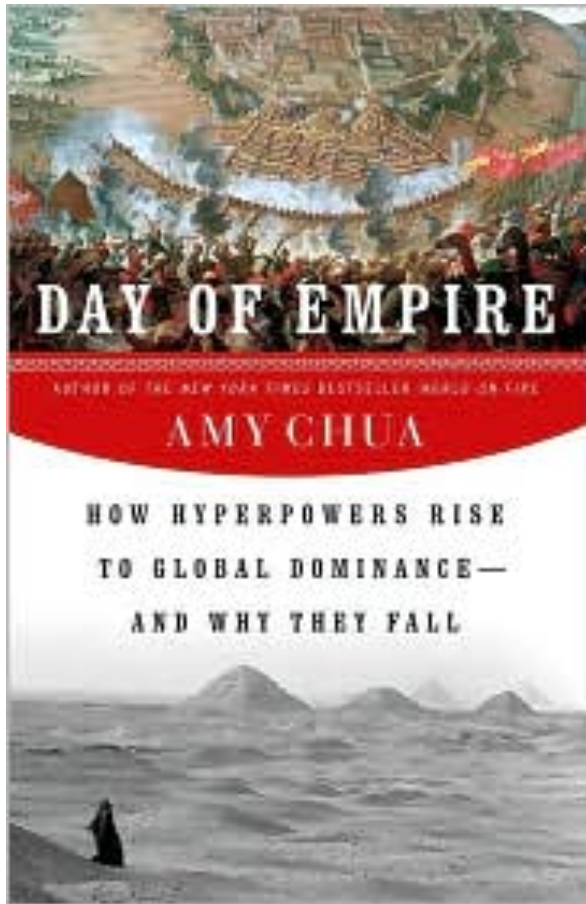
An alternative to the Quality of Life Index, the Most Livable Countries Index, shows that **six of the nine countries that scored higher on FIMS than the U.S. are worse places to live.** Livability correlates with FIMS scores at  $r = -.49$ .

# 40 years later: Creativity

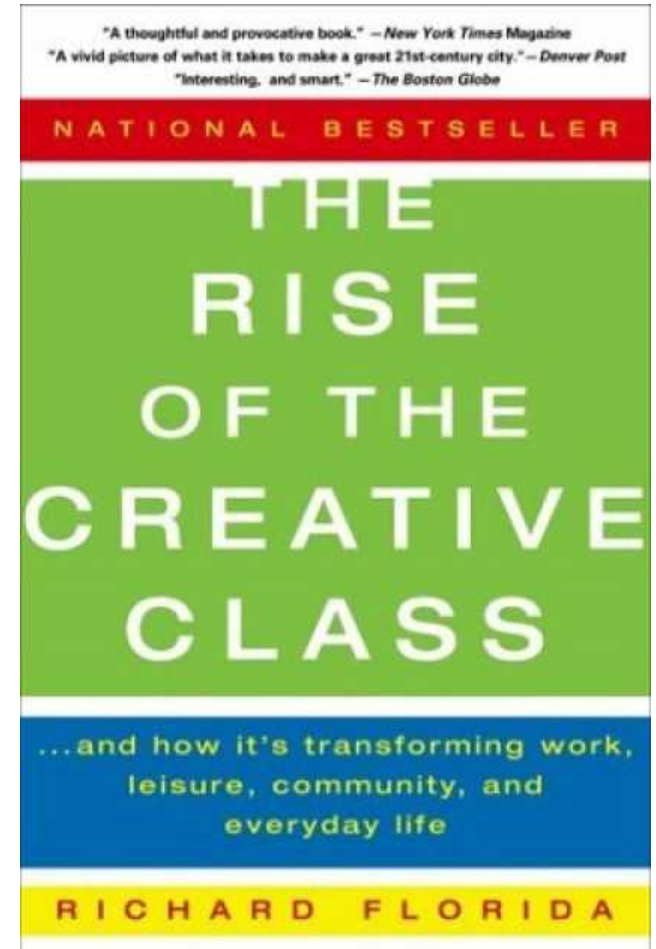
The number of patents issued in 2004 is one indicator of how creative the generation of students tested in 1964 turned out to be. **The average number of patents per million people for the nations with FIMS scores higher than the U.S. is 127. America clobbered the world on creativity, with 326 patents per million people.** However, FIMS scores do correlate with the number of patents issued:  $r = .13$  with the U.S. and  $r = .49$  without the U.S.

Baker, Keith (2007).Are International Tests Worth Anything?  
*Kappan, October, 2007*

# What Matters?



Diversity of talents  
Creativity  
Entrepreneurship  
Passion





# The Strengths of American Education (at least BN)

- School Talent Shows
  - Value individual talents
  - Inspires passion and responsibility
  - Tolerate deviation
  - Cultivate entrepreneurship
- Children are pop-corn
  - Respect individual differences
  - Have faith in every child
  - Second, third, fourth chances

# U.S. Schools Are Still Ahead -- Way Ahead

**By Vivek Wadhwa**

## **Bloomberg Business Week**

updated 1/13/2011 7:00:00 PM ET

The independence and social skills American children develop give them a huge advantage when they join the workforce. They learn to experiment, challenge norms, and take risks. They can think for themselves, and they can innovate. This is why America remains the world leader in innovation; why Chinese and Indians invest their life savings to send their children to expensive U.S. schools when they can. India and China are changing, and as the next generations of students become like American ones, they too are beginning to innovate. So far, their education systems have held them back.

[http://www.msnbc.msn.com/id/41057676/ns/business-bloomberg\\_businessweek/from-toolbar](http://www.msnbc.msn.com/id/41057676/ns/business-bloomberg_businessweek/from-toolbar)

Wrong fixes...

# Costs of high scores...

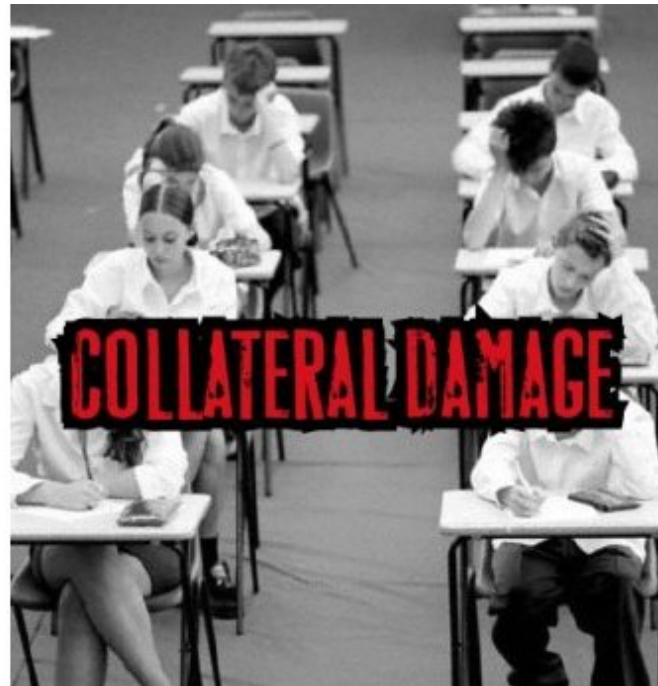
**When test scores go up, we should worry, because of how poor a measure they are of what matters, and what you typically sacrifice in a desperate effort to raise scores.**

**--Alfie Kohn**

bureaucratization of education

discrimination

cheating



narrows curriculum

kills creativity

demoralization

Opportunity cost...

**Forcing the least powerful to solve the most complex social problem, while the powerful evades their responsibilities and our children suffer**

What we need to do...

Invent a job, not find a job:  
Students as Global Entrepreneurs



# Capitalize on Strengths: The Strengths Movement

*Your Child's Strengths, Discover Them, Develop Them, Use Them*, by Jenifer Fox, M-Ed.  
(Viking, 2008)

<http://www.strengthsmovement.com/>

# Teach Global Competences

- Culture Intelligence (CQ)
  - Skills
  - Attitudes
  - Perspectives
  - Values/identity
- Knowledge of the Globe
  - Global economics
  - Global problems
  - Interdependence
- Languages and cultures

# Cultivate Digital Competencies

- Living in the digital world
  - Consumers
  - Citizens
  - Community leaders
- Making a living in the digital world
  - Digital workers
  - Global workers
- (Re)Creating the digital world
  - Innovators
  - Entrepreneurs

# Personalized Learning:

the drive to tailor education to individual need, interest and aptitude so as to fulfill every young person's potential (Department for Education and Skills (UK), 2004)

Professional  
**autonomy, support, development**  
for teachers

**ENGAGE**

**E**nergize

**N**ot be afraid

**G**et up

**A**ct

**G**o out

**E**ducate

**ENGAGE**

**ENGAGE**

**ENGAGE**

You are the last organized defense of public education.

<http://zhaolearning.com>