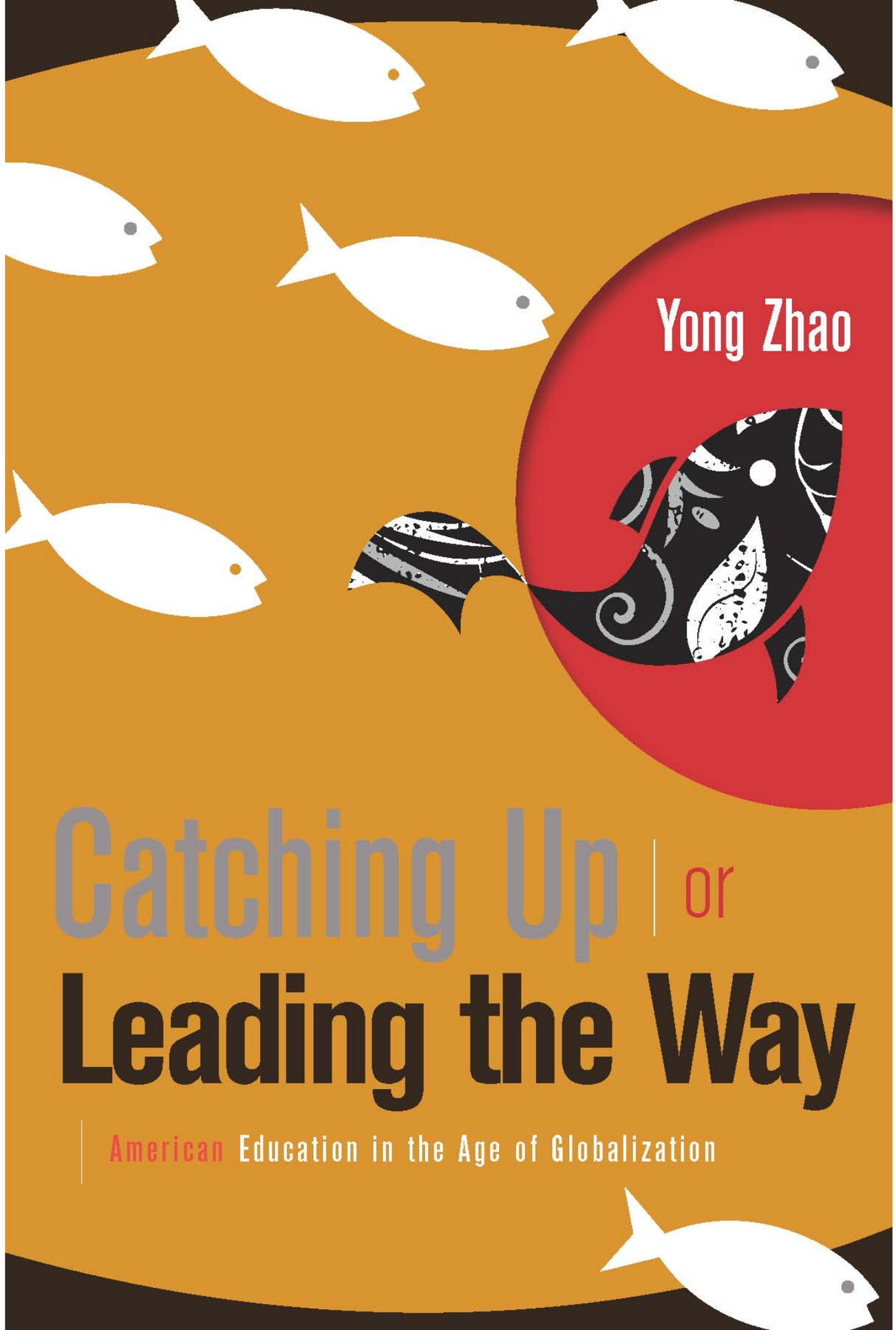
http://zhaolearning.com


Yong Zhao
Catching Up | or
Leading the Way
American Education in the Age of Globalization

# The Education We Need

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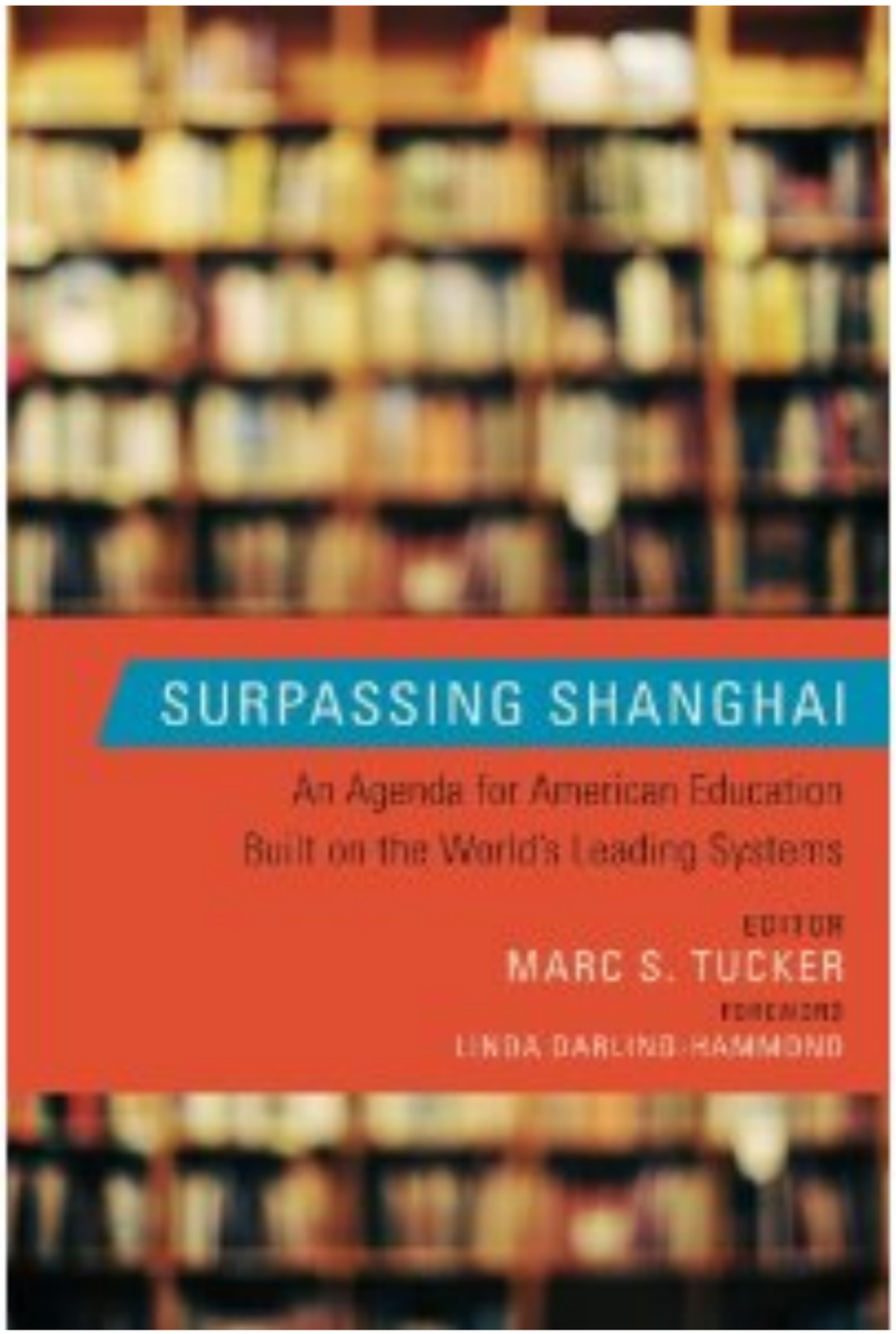
In the 21st century, countries who out-educate us today will out-compete us tomorrow, and America is already in danger of falling behind.

--Barack Obama

# What matters?

# Lady Gaga

# Lady Gaga




Global Education Giants:
Finland
China (Shanghai, Hong Kong)
Singapore
Korea

In China, students have longer school days and longer school years than their peers in the United States.

China also has more rigorous academic standards, which focus largely on math and science. China's smartest students are pushed through the K-12 system and guaranteed spots in major universities.

That birth-to-college-graduation mentality doesn't exist in America and it needs to change if the United States is going to compete in the 21st century global workforce, U.S. Deputy Secretary of Education Anthony Miller said recently at an education conference in Miami.

"Our education system is in a crisis," Miller said. "It's truly threatening our economic prosperity and that link is getting clearer and clearer each day."

http://www.news-press.com/article/20111002/NEWS0104/110020363/U-S-surpassed-education-ratings

“No uniform textbooks, no standardized tests, no ranking of students, this is American education in the eyes of a Chinese journalist…

American classrooms don’t impart a massive amount of knowledge into their children, but they try every way to draw children’s eyes to the boundless ocean of knowledge outside the school; They do not force their children to memorize all the formulae and theorems, but they work tirelessly to teach children how to think and ways to seek answer to new questions; They never rank students according to test scores, but they try every way to affirm children’s efforts, praise their thoughts, and protect and encourage children’s desire and effort.”

*Gao Gang, Encountering American Education, #2* most popular item in the category of reportage in China 2003.
http://www.360doc.com/content/07/1114/10/50242_820904.shtml

**U.S. tops the world in school spending but not test scores**
WASHINGTON (AP) — The United States spends more public and private money on education than other major countries, but its performance doesn't measure up in areas ranging from high-school graduation rates to test scores in math, reading and science, a new report shows.

*USA Today 9/6/2003*
*http://www.usatoday.com/news/education/2003-09-16-education-comparison_x.htm*

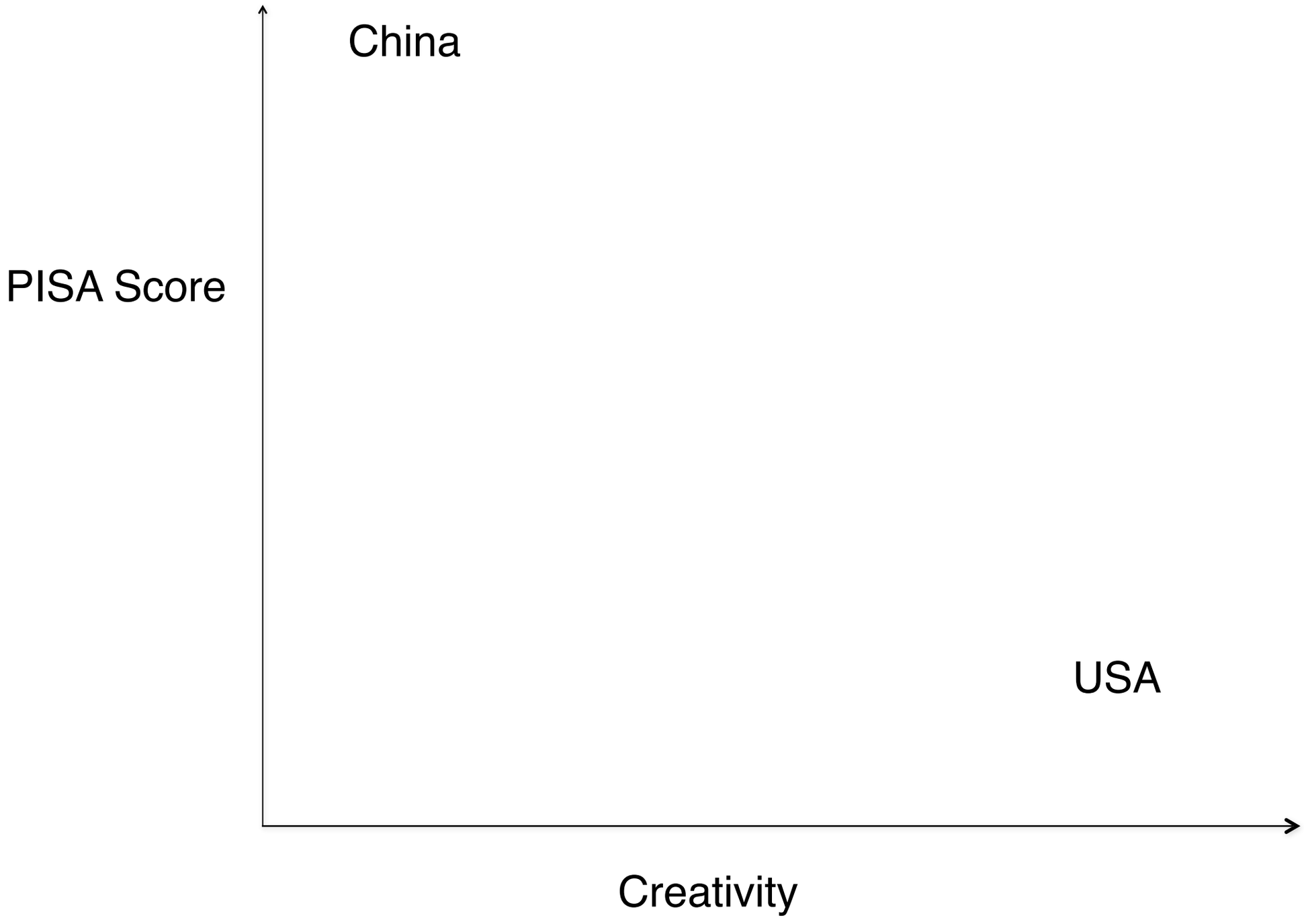
**In Classroom of Future, Stagnant Scores**

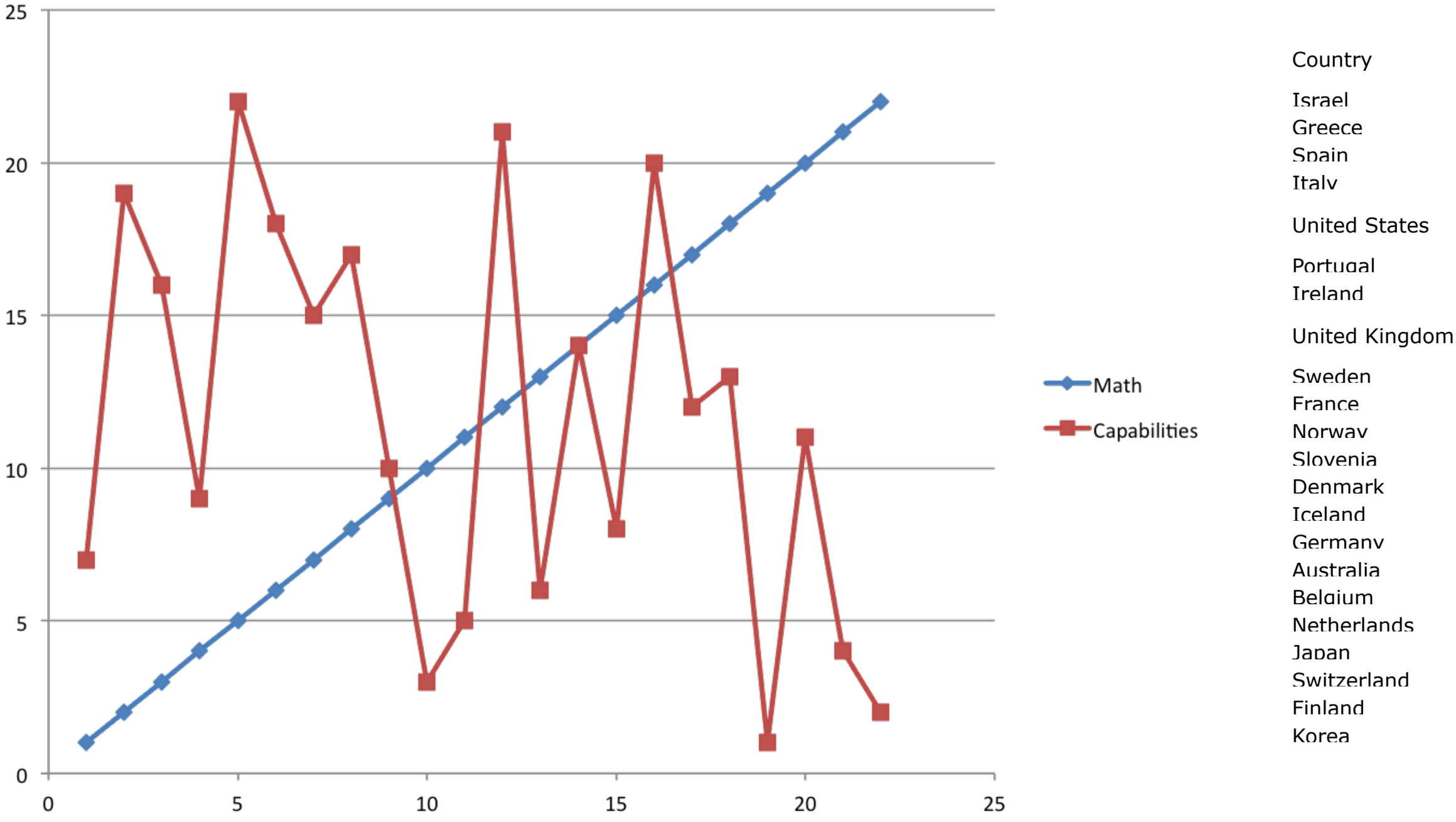
In a nutshell: schools are spending billions on technology, even as they cut budgets and lay off teachers, with little proof that this approach is improving basic learning.

*New York Times,* 9/4/2011

http://www.nytimes.com/2011/09/04/technology/technology-in-schools-faces-questions-on-value.html?pagewanted=all

# What matters?


China
PISA Score
USA
Creativity




Rankings of 21 Countries on PISA Math and Perceived Entrepreneurial Capabilities

Data source: OECD PISA 2010, Global Entrepreneurship Monitor, 2010

# A Long History of Bad Test-takers

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

…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

# The First International Mathematics Study

- 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."**

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

# Lady Gaga

Patent filings in 2008

U.S.A. 400,769 filings
Japan 502,054 filings
China 203,481 filings

Europe 14,525 filings
U.S.A. 14,399 filings
Japan 13,446 filings
China 473 filings

In 2010 China accounted for

20% of the world's population
9% of the world's GDP
12% of the world's R&D expenditure
1% of the patent filings with or patents granted by any of the leading patent offices outside China.
50 % of the China-origin patents were granted to subsidiaries of foreign multinationals

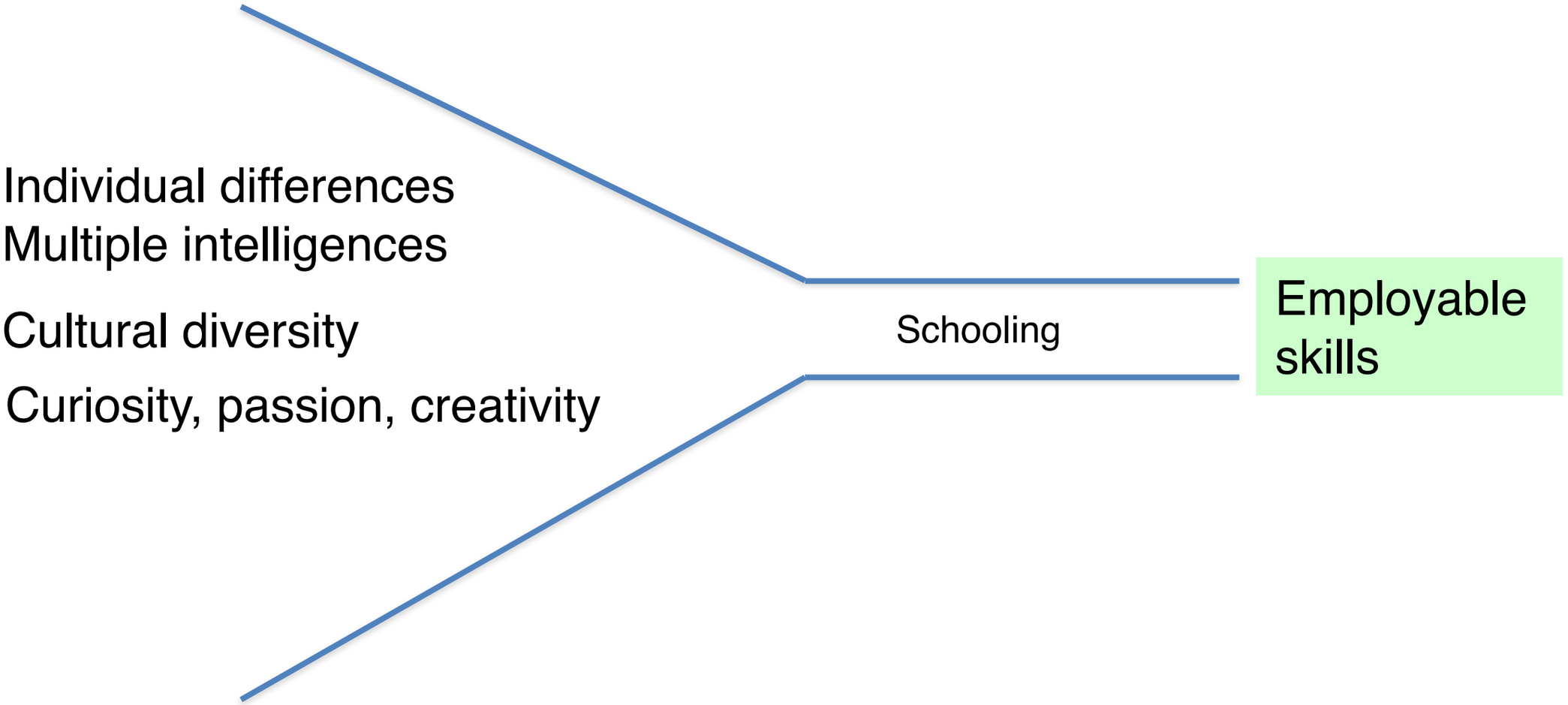
Source: Chinese Innovation is a Paper Tiger http://online.wsj.com/article/SB10001424053111904800304576472034085730262.html?mod=googlenews_wsj

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

**By Vivek Wadhwa**
**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




It is a miracle that curiosity survives formal education.
---Albert Einstein

Individual differences
Multiple intelligences

Cultural diversity

Curiosity, passion, creativity

Schooling

Employable skills

Individual differences
Multiple intelligences

Cultural diversity

Curiosity, passion, creativity

Schooling

Employable skills

# Side Effects?

# 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**

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

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

# The Traditional Strengths of American Education

- Philosophical strengths
  - School Talent Shows: Broad definition of education
  - Children are like pop-corn: Individual differences
- Structural strengths
  - Local control
  - Professional autonomy
- Resource strengths
  - Public libraries, museums, galleries, etc.
  - Technology, arts and sports facilities, musical instruments

# Correlations between PISA and Entrepreneurship Indicators

| | PISA Reading | PISA Math | PISA Sciences |
|---|---|---|---|
| Perceived Capabilities | -.595** | -.586** | -.608** |
| Nascent Entre Rate | -.693** | -.636** | -.678** |
| New Biz Ownsp Rate | -.371* | -.374* | -.392* |
| Total Early Stage Entre Activity | -.658** | -.620** | -.658** |

Data source: OECD PISA 2010, Global Entrepreneurship Monitor, 2010

In countries where schools have greater autonomy over what is taught and how students are assessed, students tend to perform better.

In countries where schools account for their results by posting achievement data publicly, schools that enjoy greater autonomy in resource allocation tend to show better student performance than those with less autonomy.

At the country level, the greater the number of schools that have the responsibility to define and elaborate their curricula and assessments, the better the performance of the entire school system, even after accounting for national income. School  systems that grant schools greater discretion in deciding student-assessment policies, the courses offered, the content of those courses, and the textbooks used are also those systems that show higher reading scores overall. This association is observed even though having the responsibility to design curricula is not always related to better performance for an individual school.

# The future?

# The future?

The stone age did not end because they ran out of stones

No company loves us enough to stay forever..

- 40-50 years, average life expectancy of Fortune 500 companies
- 12.5 years, average life expectancy of all firms
- 3,000,000 jobs lost annually by existing US companies
- 50% increase in labor force in developing countries by 2050

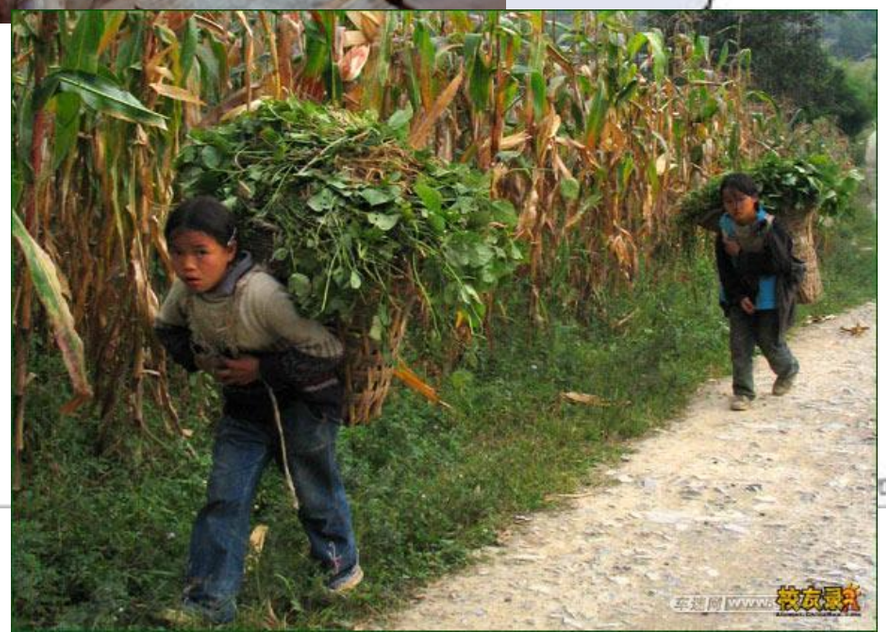
- Sources:
- http://www.businessweek.com/chapter/degeus.htm
- http://www.kauffman.org/
- http://www.economist.com/node/18227144

Today, Indian engineers make $7,500 a year against $45,000 for an American engineer with the same qualifications. If we succeed in matching the very high levels of mastery of mathematics and science of these Indian engineers — an enormous challenge for this country — **why would the world's employers pay us more than they have to pay the Indians to do their work?** They would be willing to do that only if we could offer something that the Chinese and Indians, and others, cannot.

--New Commission on the Skills of the American Workforce (2007). Tough Choices or Tough Times


FRIEDHOLM
13


4th Graders
Have No Fear!



# The Competition is Not More of the Same, But Something Different

Individual differences
Multiple intelligences

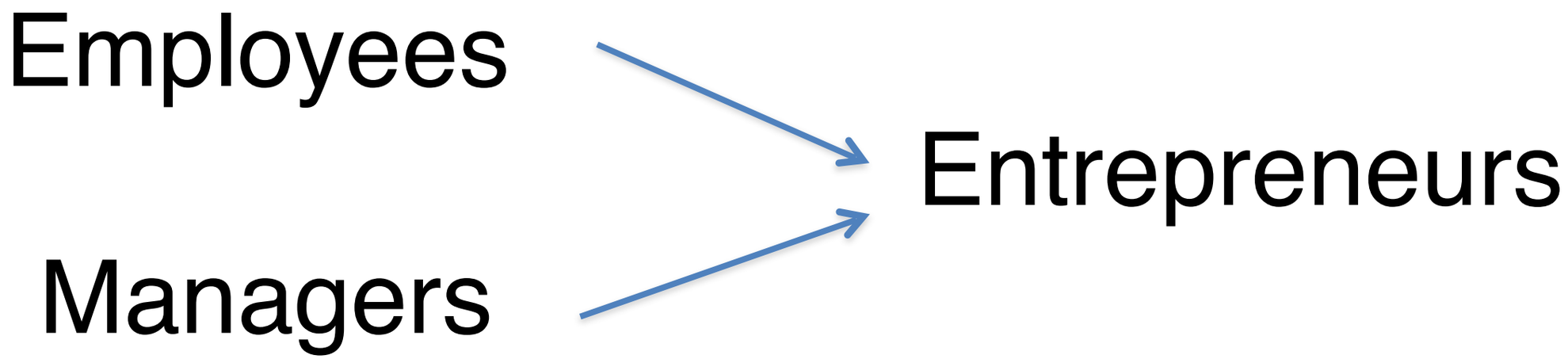
Cultural diversity

Curiosity, passion, creativity

Schooling

Enhanced
Human Talents

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



# Global Entrepreneurship

Confidence

Friends

Risk-taking

Passion

Unique ideas
Innovation

Motivation

# 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)

# Capitalize on Strengths:
# Strengths-based Education

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

# Making Learning Real:
## Project-based Learning

## Global Competence:
## The Globe as the Campus

# Three Principles

Freedom to learn: Choice

Real outcomes:
Authentic products or services

High expectations:
Disciplined and sustained work

# Three Steps

Identity problem/needs

Develop solutions/programs

Market solutions/products

OBA

http://globaleducation.uoregon.edu

http://zhaolearning.com