U.S.:
53% of Recent College Grads Are Jobless or Underemployed
*The Atlantic* April 23, 2012

Korea:
Skip College Is Top Advice for World-Beating Koreans
*Business Week.* September 12, 2012

China:
570,000 graduates unemployed, and Why so?
*Sina,* June 12, 2012
http://english.sina.com/china/2012/0611/475714.html

Spain:
Desperation, anger grows for Spanish youth, with 51 percent unemployed
*CBS Evening News,* June 9, 2012

South Africa:
Young, jobless and desperate – Degrees with no guarantees
*City Press,* June 16, 2012
Schooling

Individual differences
Multiple intelligences
Cultural diversity
Curiosity, passion, creativity

Employable skills
The Known Knowns

Human nature: Diversity
The economy: Changed
Information: Everywhere
The world: Globalized
Global Education Reform Movement

GERM
http://zhaolearning.com

@YongZhaoUO

http://www.facebook.com/yongzhao.uo
Catching Up or Leading the Way
American Education in the Age of Globalization

Yong Zhao
The future: The Age of Globalization

The stone age did not end because they ran out of stones
The world’s workforce is rising steadily . . .

- Total employed (left scale)
- Employment-to-population ratio (right scale)
To create the same value in the U.S., it takes...
U.S. Manufacturing: Output vs. Jobs
January 1972 to August 2010

Manufacturing Jobs (left scale)

Manufacturing Output Value (right scale)

Sources: BLS and Fed Reserve

World GDP per capita (in 1990 dollars)
Stats from Angus Maddison
Graph by MarkHumphrys.com
Apple Employees: 43,000 US, 20,000 overseas
People working on Apple Products: 700,000
Apple profit: 400,000 per employee

Employees ➔ Entrepreneurs
Mass Entrepreneurship

Business entrepreneurs
Social entrepreneurs
Intrapreneurs
Policy entrepreneurs
Entrepreneurial Qualities

Confidence | Friends | Risk-taking
---|---|---
Passion | Creativity | Alertness to opportunity
Global competency | Uniqueness | Empathy
Individual differences
Multiple intelligences
Cultural diversity
Curiosity, passion, creativity

Schooling

Employable skills
Side Effects
Drug Facts

Active ingredient (in each tablet): Chlorpheniramine maleate 2 mg

Purpose: Antihistamine

Uses: temporarily relieves these symptoms due to hay fever or other upper respiratory allergies: ■ sneezing ■ runny nose ■ itchy, watery eyes ■ itchy throat

Warnings:
Ask a doctor before use if you have:
■ glaucoma ■ a breathing problem such as emphysema or chronic bronchitis ■ trouble urinating due to an enlarged prostate gland
Ask a doctor or pharmacist before use if you are taking tranquilizers or sedatives.
When using this product:
■ drowsiness may occur ■ avoid alcoholic drinks ■ alcohol, sedatives, and tranquilizers may increase drowsiness ■ be careful when driving a motor vehicle or operating machinery ■ excitability may occur, especially in children
If pregnant or breast-feeding, ask a health professional before use.
Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away.

Directions:
- adults and children 12 years and over: take 2 tablets every 4 to 6 hours; not more than 12 tablets in 24 hours
- children 6 years to under 12 years: take 1 tablet every 4 to 6 hours; not more than 6 tablets in 24 hours
- children under 6 years: ask a doctor

Drug Facts (continued)

Other Information:
■ store at 20-25°C (68-77°F) ■ protect from excessive moisture

Inactive ingredients: D&C yellow no. 10, lactose, magnesium stearate, microcrystalline cellulose, pregelatinized starch

WARNING: HOT DOGS CAN WRECK YOUR HEALTH
www.CancerProject.org

THIS MEDICINE MAY AFFECT MENTAL ALERTNESS AND/OR COORDINATION. IF AFFECTED, DO NOT DRIVE A MOTOR VEHICLE OR OPERATE MACHINERY.

THIS MEDICINE MAY CAUSE DROWSINESS AND MAY INCREASE THE EFFECTS OF ALCOHOL. IF AFFECTED DO NOT DRIVE A MOTOR VEHICLE OR OPERATE MACHINERY.
Look and Learn ABCs Magnetic Book

Pre-K
Ages 3-4

Magnetic storybook that reinforces:
- Letter recognition
- Letter and picture association

Includes 26 letter magnets!

#1 Trusted Name in teaching kids to read*

WARNING
CHOKING HAZARD—Small parts
Not for children under 3 years of age.

The Fun and Easy Way to Learn the ABCs!
Why Didn’t China Have a Big Party?
<table>
<thead>
<tr>
<th>Math</th>
<th>Sciences</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai, China</td>
<td>Shanghai, China</td>
<td>Shanghai, China</td>
</tr>
<tr>
<td>Singapore</td>
<td>Finland</td>
<td>South Korea</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>Hong Kong, China</td>
<td>Finland</td>
</tr>
<tr>
<td>South Korea</td>
<td>Singapore</td>
<td>Hong Kong, China</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Japan</td>
<td>Singapore</td>
</tr>
<tr>
<td>Finland</td>
<td>South Korea</td>
<td>Canada</td>
</tr>
<tr>
<td>Liechtenstein</td>
<td>New Zealand</td>
<td>New Zealand</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Canada</td>
<td>Japan</td>
</tr>
<tr>
<td>Japan</td>
<td>Estonia</td>
<td>Australia</td>
</tr>
<tr>
<td>Canada</td>
<td>Australia</td>
<td>Netherlands</td>
</tr>
</tbody>
</table>
Arne Duncan: “A wake-up call”

Barack Obama: “A Sputnik moment”
A Grattan Institute report, to be released today, shows Australian performance has slipped since 2000, with maths students now more than two years behind children in Shanghai and one to two years behind children in Hong Kong, Singapore and South Korea.

--Sydney Morning Herald, 02-17-2012
http://www.smh.com.au/national/education/australian-students-lag-asia-by-three-years-20120216-1tbt8.html#ixzz1me2MH9mL

We've become a nation of wusses. The Chinese are kicking our butt in everything. If this was in China do you think the Chinese would have called off the game? People would have been marching down to the stadium. They would have walked and they would have been doing calculus on the way down…

--Former Pennsylvania Governor Ed Rendell on the rescheduling of an NFL game, 2010
http://voices.washingtonpost.com/44/2010/12/ed-rendell-were-a-nation-of-wu.html

I am happy to confess I’d like us to implement a cultural revolution just like the one they’ve had in China…Like Chairman Mao, we’ve embarked on a Long March to reform our education system.

--Michael Gove, British Secretary of State for Education
http://www.telegraph.co.uk/education/8227535/Michael-Gove-my-revolution-for-culture-in-classroom.html
Qian Xuesheng: “Why doesn’t China have great talents?”

Wen Jiabao: “China must have entrepreneurs like Steve Jobs”

Kai-fu Lee: The next Apple or Google will appear, but not in China… unless it abolishes its education.
Real Dragon or Paper Tiger: Patent filings in 2008

<table>
<thead>
<tr>
<th>Region</th>
<th>Filings</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>400,769</td>
</tr>
<tr>
<td>Japan</td>
<td>502,054</td>
</tr>
<tr>
<td>China</td>
<td>203,481</td>
</tr>
<tr>
<td>Europe</td>
<td>14,525</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>14,399</td>
</tr>
<tr>
<td>Japan</td>
<td>13,446</td>
</tr>
<tr>
<td>China</td>
<td>473</td>
</tr>
</tbody>
</table>

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/SB1000142405311904800304576472034085730262.html?mod=googlenews_wsj
Steve Wozniak: Apple couldn’t emerge in societies like Singapore where ‘bad behavior is not tolerated’ and people are not taught to think for themselves.

Alexis Ong: Wozniak’s comments are really a scathing indictment of the Singapore education system, its strictly regimented curriculum and by-rote study techniques that sustain the city’s “formal culture.”
Why Aren’t the Model Minority Happy?
2008 NAEP Math Scores by Race/Ethnicity

Scores

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
<th>Native Am</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Yr Olds</td>
<td>290</td>
<td>262</td>
<td>268</td>
<td>304</td>
<td>274</td>
</tr>
<tr>
<td>17 Yr Olds</td>
<td>314</td>
<td>287</td>
<td>293</td>
<td>321</td>
<td>305</td>
</tr>
</tbody>
</table>

Asian Americans

• 5% of the US population
• 15 to 25% of Ivy League enrollment
• 24% at Stanford
• 46% at UC Berkeley
• 64 percent of Asians versus 52 percent for Caucasians want to hold top positions
• 2% of total 5,520 board seats of the Fortune 500 (98 of them have Asians on their board)

Why Is the U.S. Still Here?
Inside photos showed Alexei doing complicated experiments in physics and chemistry and reading aloud from *Sister Carrie*.

---

1958

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.
Elephant vs. doctor: Aspirations

2 Million Minutes

Bob Compton

Source: http://www.2mminutes.com/pressblog6.html
A Long History of Bad Test-takers

- **1960s**
  - FIMS: 12\textsuperscript{th} out of 12 countries
  - FISS: 14\textsuperscript{th} out of 18 countries

- **1970s/1980s**
  - SIMS: 12, 14, 12, 12 out of 15 (number systems, algebra, geometry, calculus)
  - SISS: 14\textsuperscript{th} (biology), 12\textsuperscript{th} (chemistry), 10\textsuperscript{th} (physics) out of 14

- **1990s—2007: TIMSS (8\textsuperscript{th} graders)**
  - 28\textsuperscript{th} out of 42 in 1995
  - 15\textsuperscript{th} in 2003
  - 9\textsuperscript{th} 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
Possible Explanations
Responses to “I usually do well in Math”
Correlations between TIMSS Math Score and Confidence and Enjoyment

<table>
<thead>
<tr>
<th>Grade</th>
<th>Confidence</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>-0.58</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>-0.64</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>-0.67</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>-0.75</td>
<td></td>
</tr>
</tbody>
</table>

Tom Loveless (2006): How Well Are American Students Learning
http://www.brookings.edu/~/media/Files/rc/reports/2006/10education_loveless/10education_loveless.pdf
It is a miracle that curiosity survives formal education.

--Albert Einstein
Ranking by PISA Math Score and Perceived Entrepreneurial Capability

- Singapore
- Republic of Korea
- Taiwan
- Finland
- Switzerland
- Japan
- Netherlands
- Belgium
- Australia
- Germany
- Denmark
- Slovenia
- Norway
- France
- Sweden
- Czech Republic
- United Kingdom
- United States
- Portugal
- Ireland
- Spain
- Greece
- United Arab Emirates

Legend:
- Red: 2009 PISA Math
- Blue: Perceived Entrepreneurial Capability
## Correlations between PISA and Entrepreneurship Indicators

<table>
<thead>
<tr>
<th></th>
<th>PISA Reading</th>
<th>PISA Math</th>
<th>PISA Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Capabilities</td>
<td>-.595**</td>
<td>-.586**</td>
<td>-.608**</td>
</tr>
<tr>
<td>Nascent Entre Rate</td>
<td>-.693**</td>
<td>-.636**</td>
<td>-.678**</td>
</tr>
<tr>
<td>New Biz Ownsp Rate</td>
<td>-.371*</td>
<td>-.374*</td>
<td>-.392*</td>
</tr>
<tr>
<td>Total Early Stage Entre Activity</td>
<td>-.658**</td>
<td>-.620**</td>
<td>-.658**</td>
</tr>
</tbody>
</table>

Data source: OECD PISA 2010, Global Entrepreneurship Monitor, 2010
Lady Gaga
Lady Gaga
If you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.

--Albert Einstein
In our travels to China it was everywhere, that laser-focus on education…This public school in Shanghai where the children are two years old. By three they are in school from 8 until 4, already learning phrases in English…On average Chinese students attend schools 41 more days than American students a year and with extra lessons on the weekend, Chinese students receive 30% more hours of instruction.

--ABC World News with Diane Sawyer, 2010

http://abcnews.go.com/Politics/china-debuts-top-international-education-rankings/story?id=12336108#.Tz5va0xU2Fc
…what they learn and how they learn are subjects of constant debate. Critics see young people as being “fed” learning because they are seldom left on their own to learn in a way of their choice. They have little direct encounters with nature, for example, and little experience with society either. While they have learned a lot, they may not have learned how to learn.

--OECD, 2011  http://dx.doi.org/10.1787/9789264096660-en
The Difference between a $10,000 Education and a $10 Education
It is a miracle that curiosity survives formal education.
---Albert Einstein
New Paradigm
Individual differences
Multiple intelligences
Cultural diversity
Curiosity, passion, creativity

Enhanced Human Talents
Schooling
If Lady Gaga is useful…
Personalized and strength-based educational experiences:

Summerhill School
Austin’s Butterfly...
Austin 9
Product-oriented Learning: Multiple revisions, sustained and disciplined process, peer reviews

High Tech High
The Chicken Project
The Globalized Campus: Partners, Customers, and Investors: Oxford and Cherwell School
Entrepreneurship-oriented Education

What: Student Autonomy

Where: The Global Campus

How: Product-oriented Learning
What: Student Autonomy
• Curriculum
• Governance
• Environment

How: Product-oriented Learning
• Authentic product
• Drafts and review
• Persistence and discipline

Where: The Global Campus
• Global partners
• Global markets
• Global resource

The Global Campus
• Global partners
• Global markets
• Global resource
Actions we could take:
Fixing the ship or building a new ship
Some experiments
OBA
http://globaleducation.uoregon.edu