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Students as Global Entrepreneurs: Implications of Globalization for Education

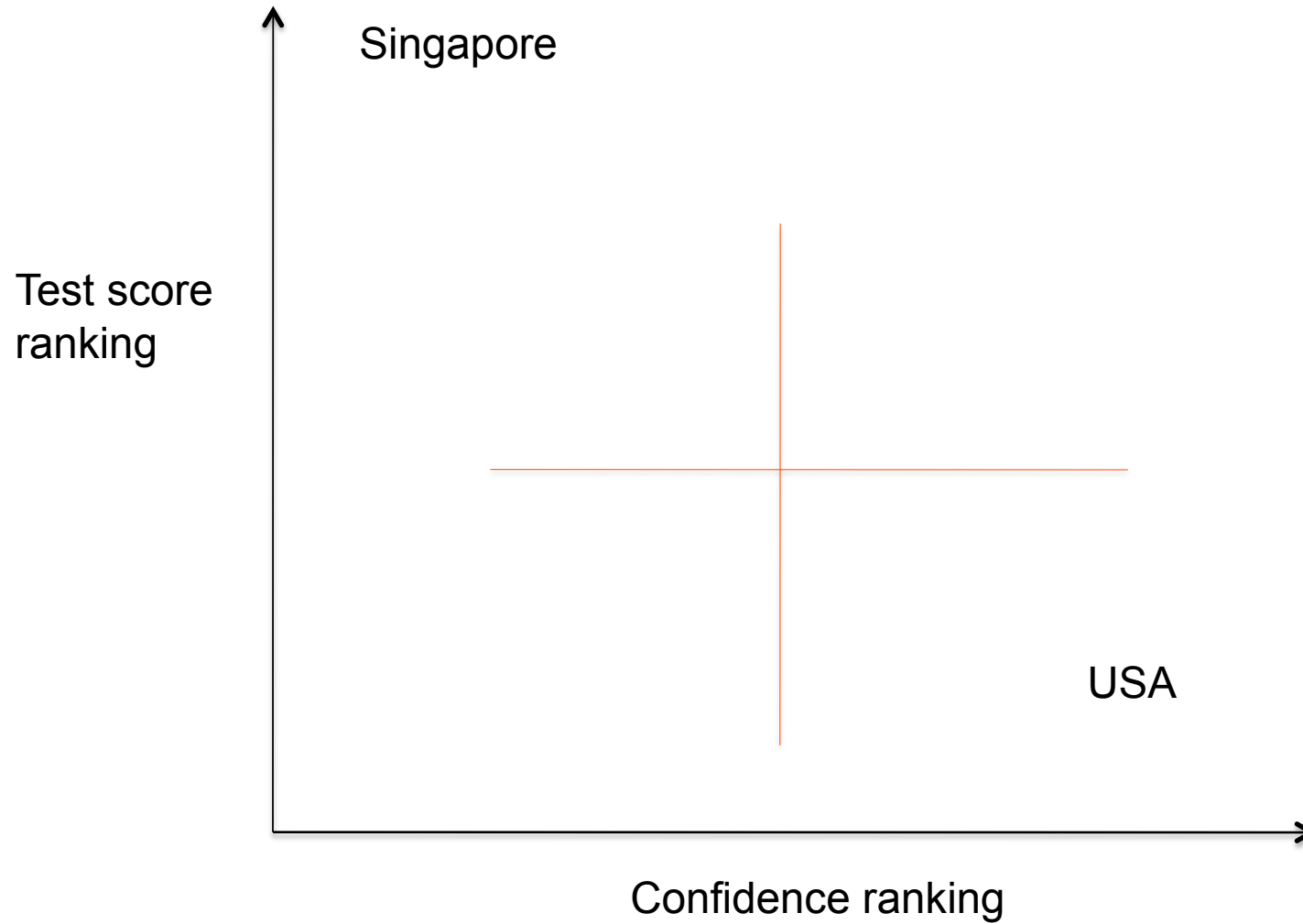
Yong Zhao, Ph. D
Presidential Chair
College of Education
University of Oregon
zhaoyong@uoregon.edu
<http://zhaolearning.com>

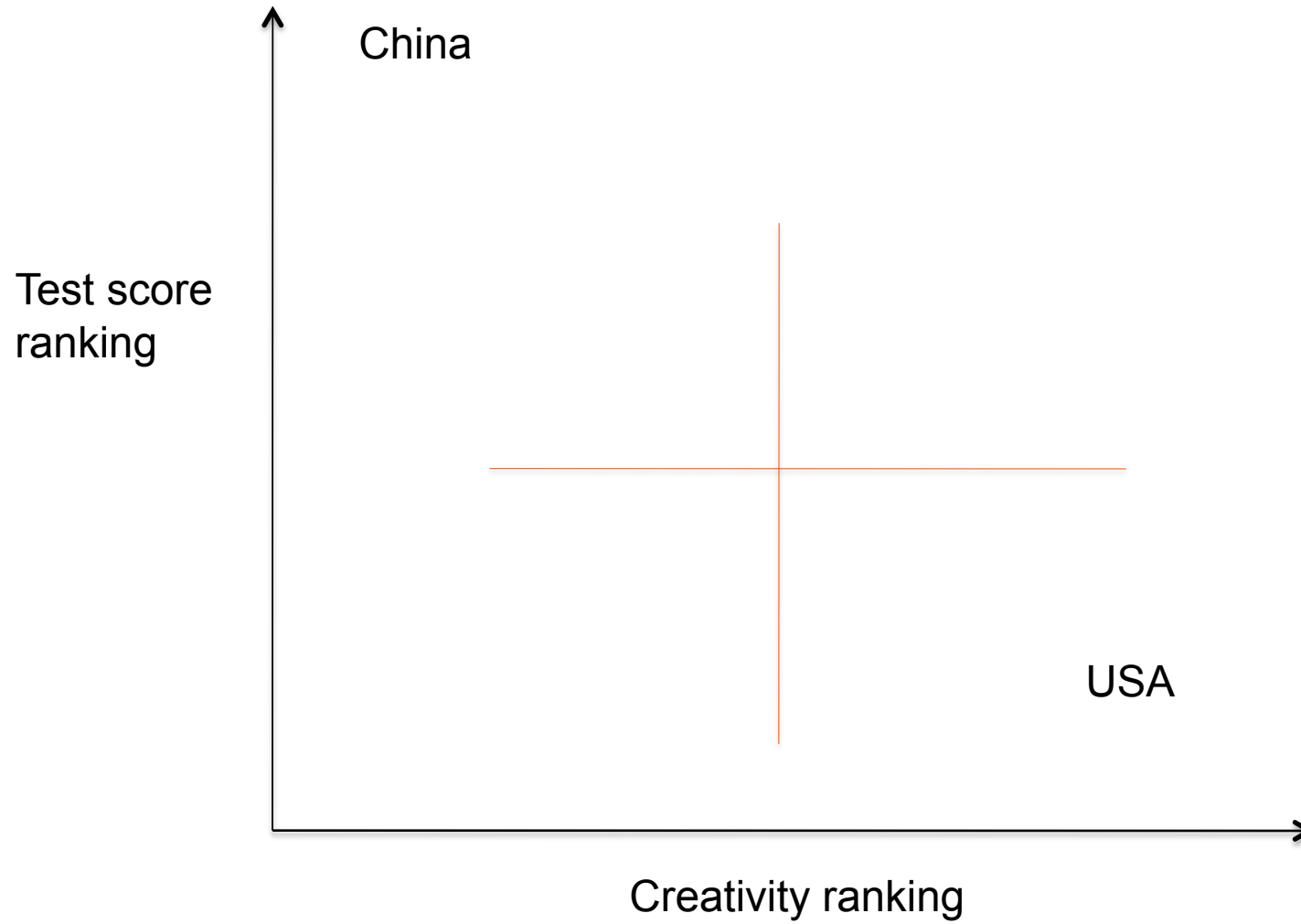
The book cover features a stylized illustration of a school of white fish swimming in a brownish-orange sea. A large, red, circular shape, resembling a fishbowl or a large eye, is positioned on the right side. Inside this red circle is a black and white patterned fish, possibly a koi, with intricate designs. The author's name, 'Yong Zhao', is written in white text above this red circle. The title 'Catching Up | or Leading the Way' is prominently displayed in the lower half, with 'Catching Up' in a light grey font, '| or' in a small red font, and 'Leading the Way' in a large, bold black font. Below the title, the subtitle 'American Education in the Age of Globalization' is written in a smaller, light brown font. The entire cover is framed by a dark brown border.

Yong Zhao

Catching Up | or Leading the Way

American Education in the Age of Globalization





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

China Daily, November 27, 2010

The survey covering 21 countries, conducted by International Educational Progress Evaluation Organization, showed Chinese students excelled at math, beating their peers from other countries. But when it came to using their imagination, they were tied for the last place. And in creativity, they were fifth from the bottom.

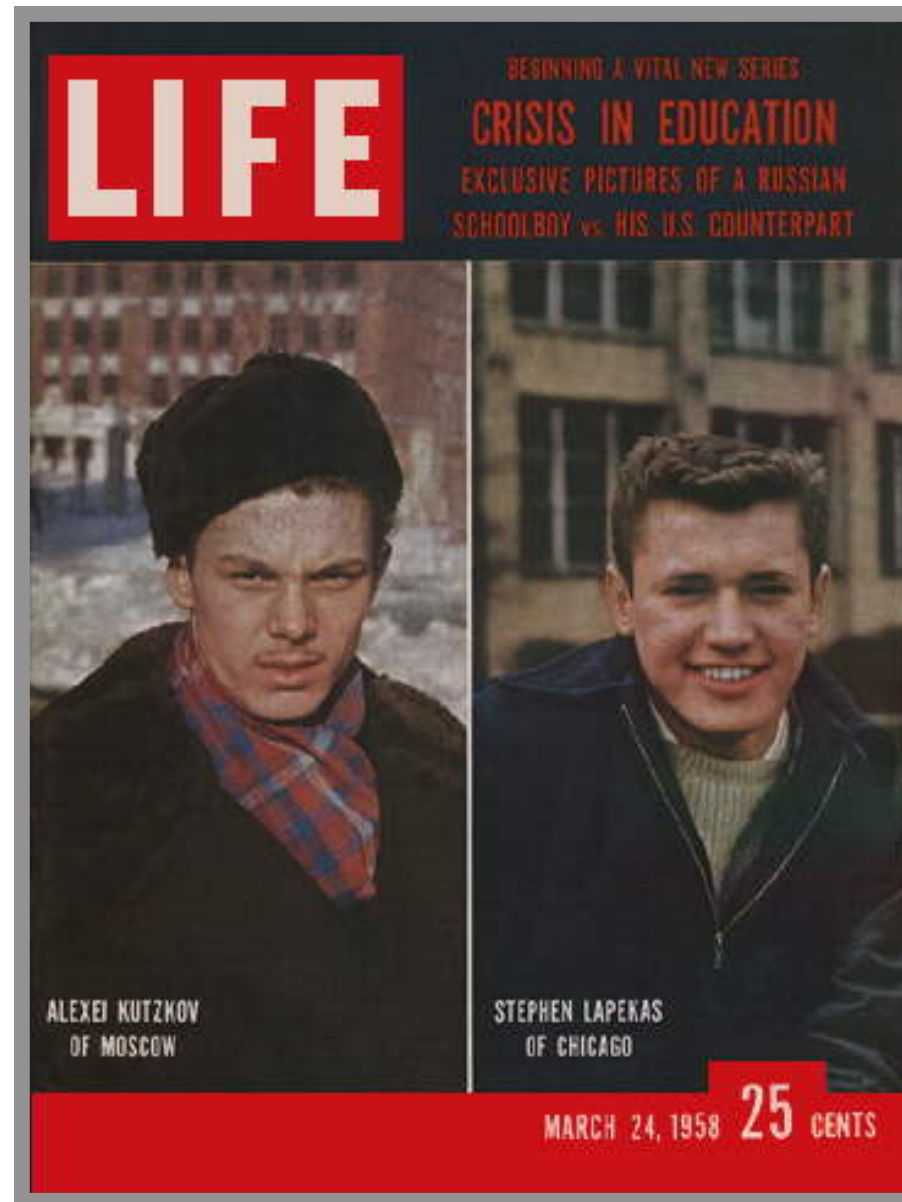
The survey results are not shocking, given the way our children are taught in schools and at home. But they are a stern reminder to our educators and parents to change their ways.

The global study should make us swing into action and help our students to throw open their young minds to imagination and creativity. It is time our education officials and educators asked themselves what they should do to let our children's imagination and creativity blossom.

<http://www.cdeclips.com/en/opinion/fullstory.html?id=55917>

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."



*To Glenn Seaborg
With appreciation*

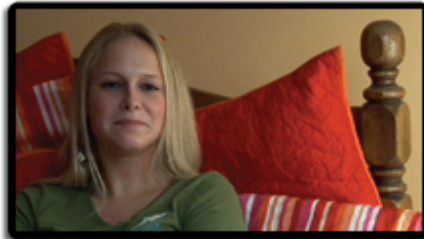
1983 Japan

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.

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

Education Reforms: East vs. West

USA

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

[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

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).

[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 or any other aspect of human nature.

--Lee Ju Ho, Minister of Education, Science, and
Technology

Jan 28, 2011, Chronicle of Higher Education



What knowledge is of most worth?

--Herbert Spencer, 1859

The Case of the United States

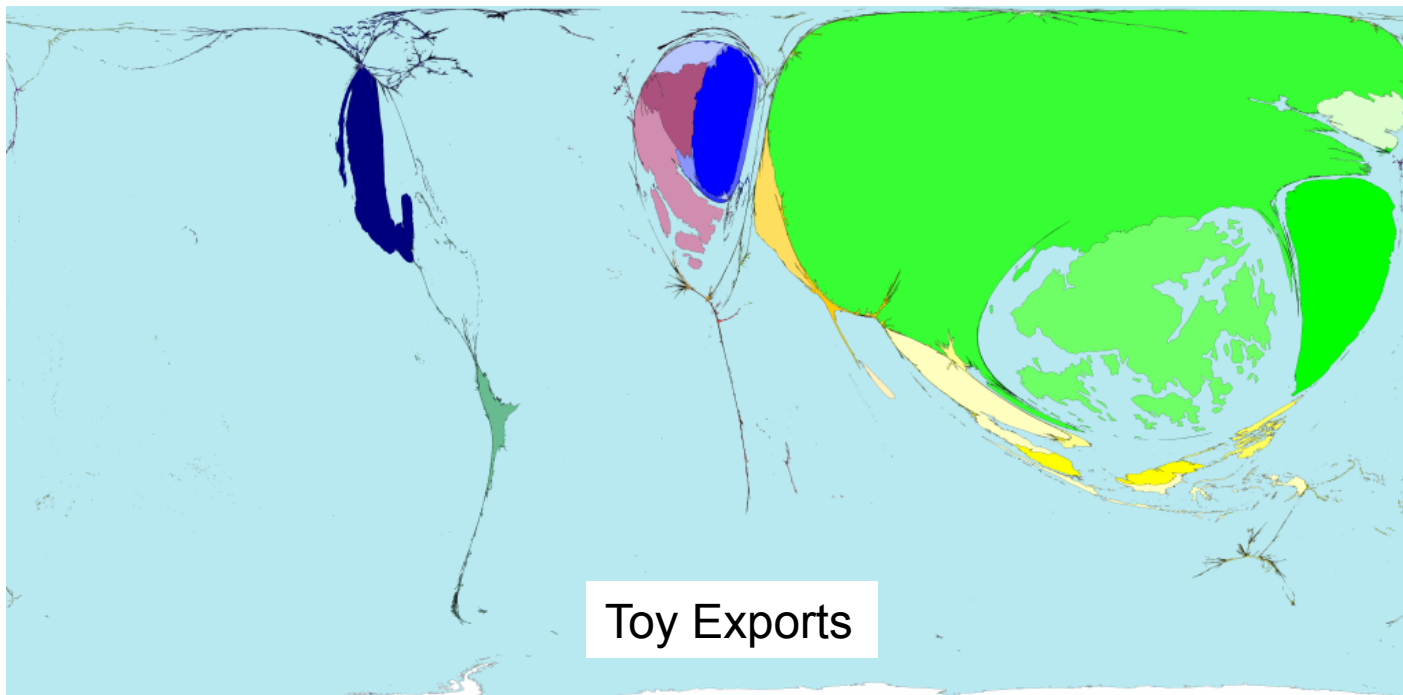
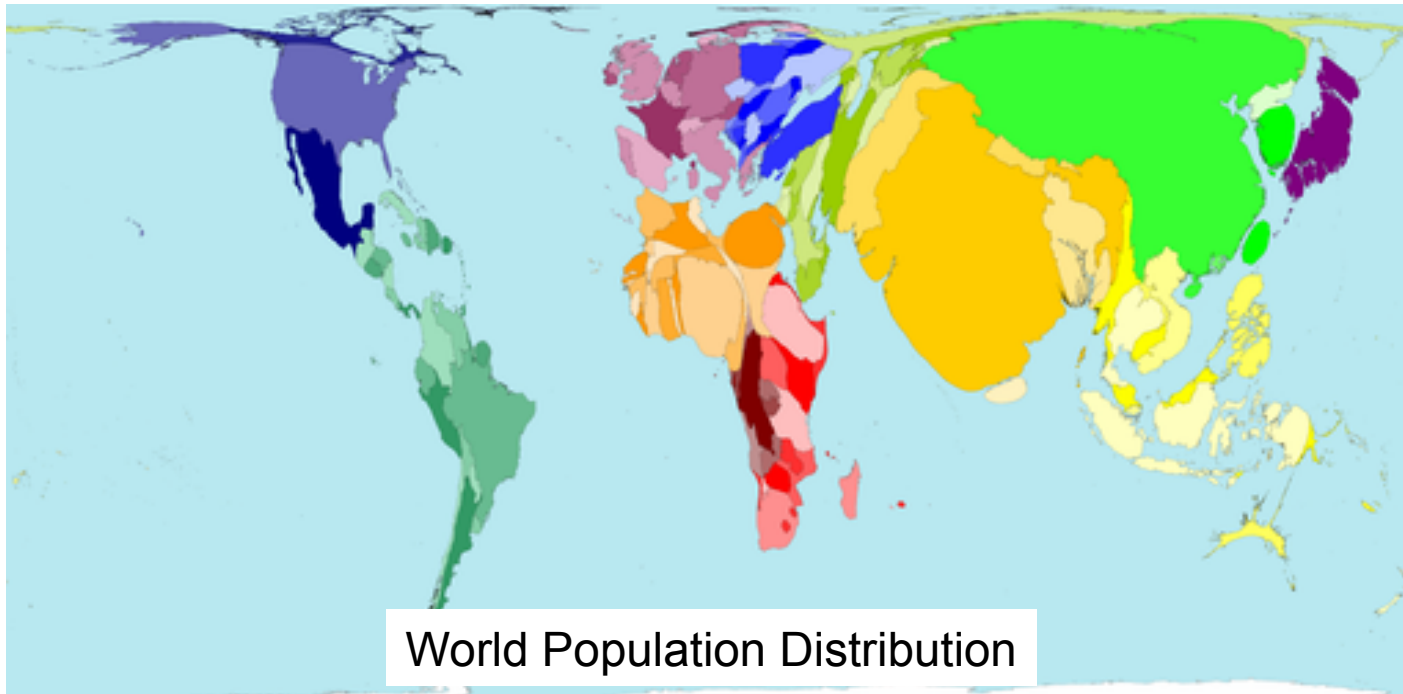
A Long History of Bad Test-takers

- 1960s
 - FIMS: 12th out of 12 countries
 - FISS: 14th out of 18 countries
- 1970s/1980s
 - SIMS: 12, 14, 12, 12 out 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

But...

... 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



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

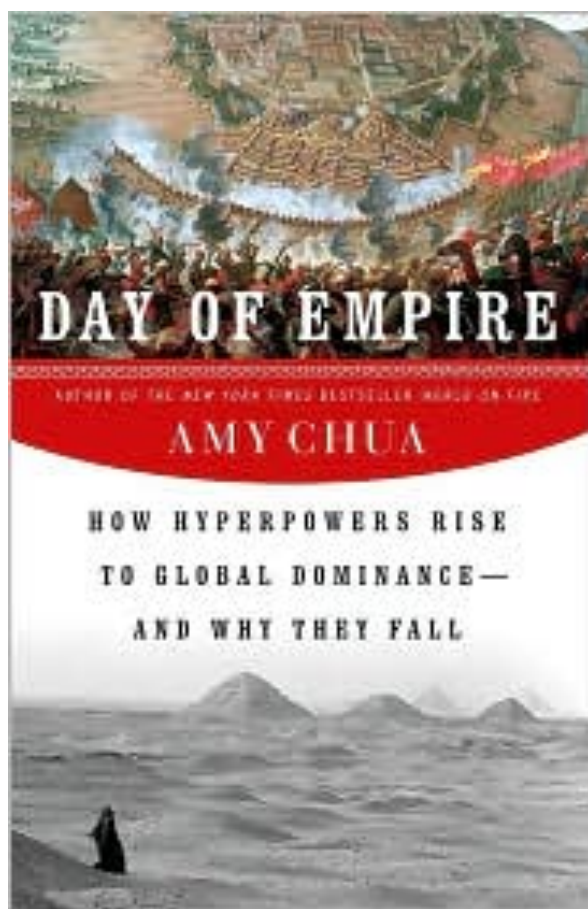
An alternative to the Quality of Life Index, the Most Livable Countries Index, shows that **six of the nine countries that scored higher on FIMS than the U.S. are worse places to live.** Livability correlates with FIMS scores at $r = -.49$.

40 years later: Creativity

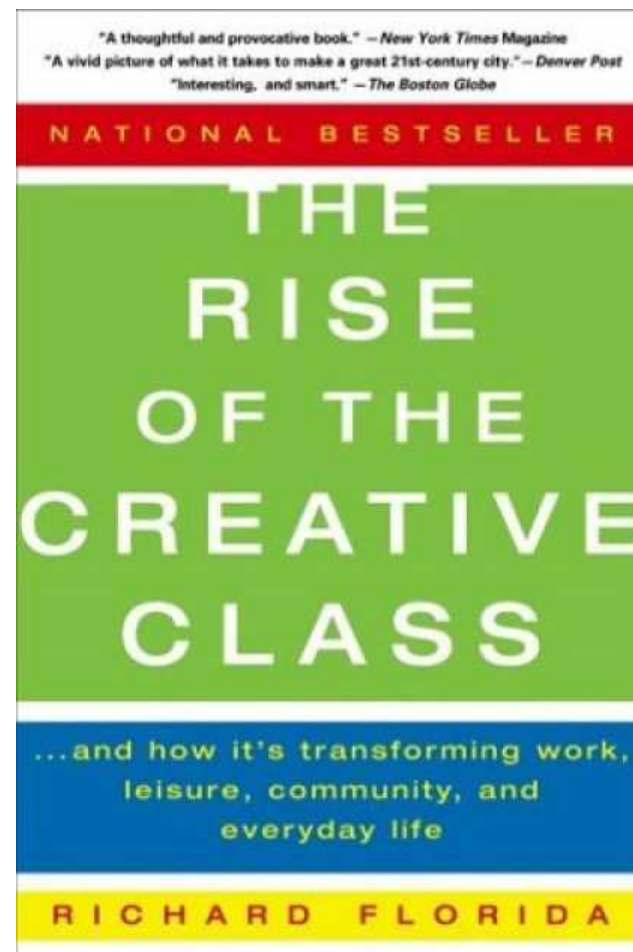
The number of patents issued in 2004 is one indicator of how creative the generation of students tested in 1964 turned out to be. **The average number of patents per million people for the nations with FIMS scores higher than the U.S. is 127. America clobbered the world on creativity, with 326 patents 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

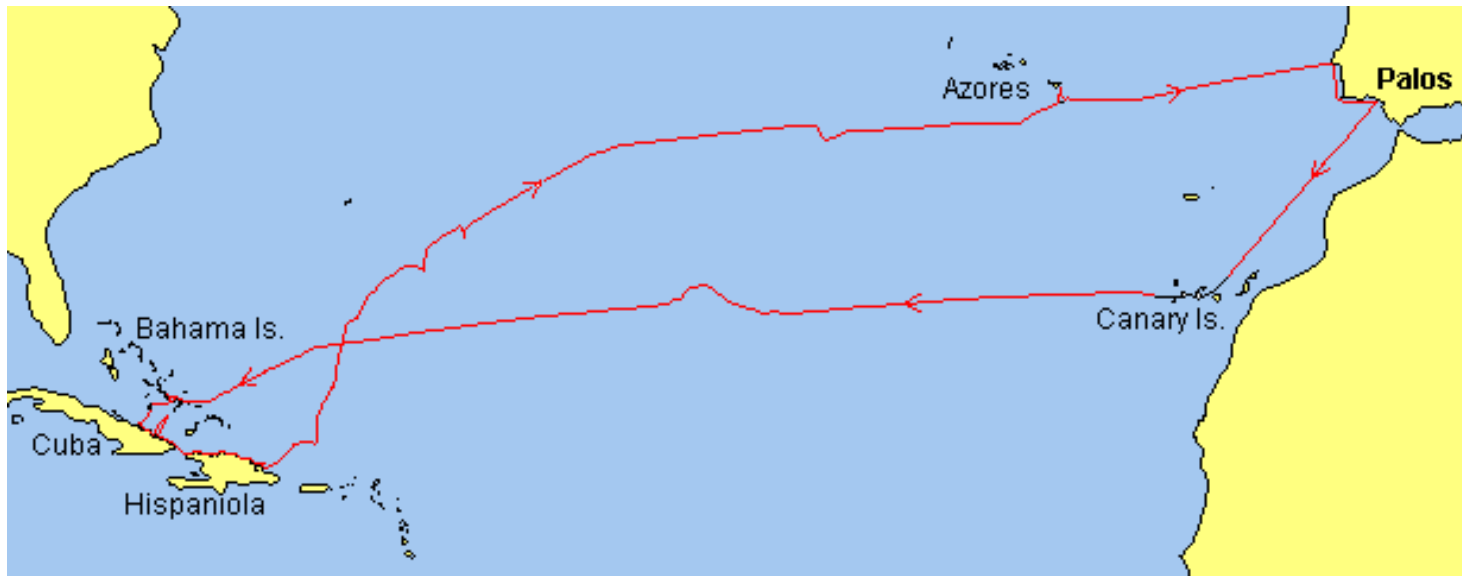
updated 1/13/2011 7:00:00 PM ET

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.businessweek.com/technology/content/jan2011/tc20110112_006501.htm

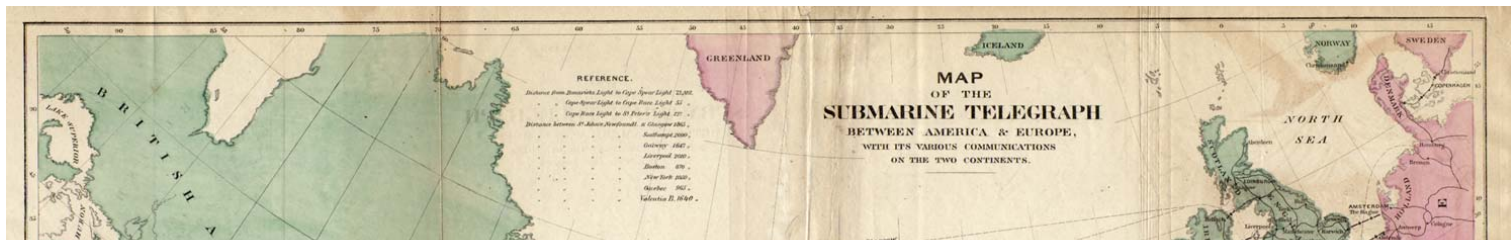
Globalization

1492: about 3 months

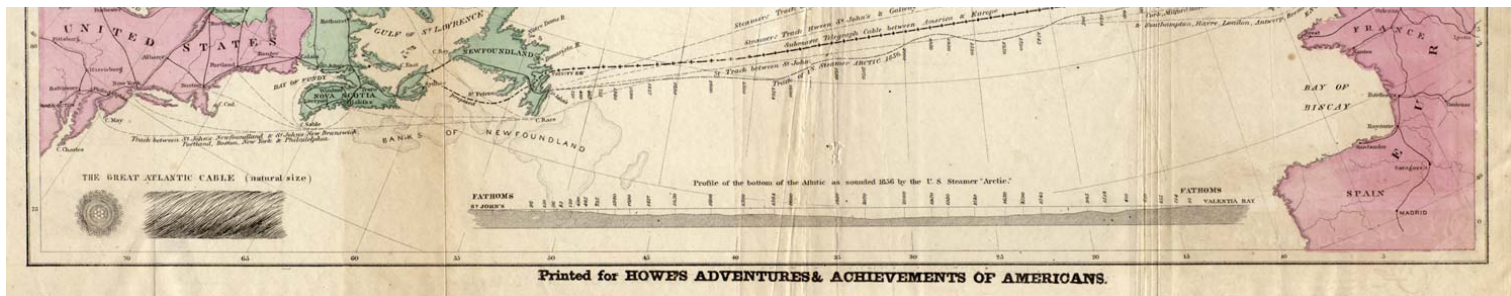


2009: about 13 hours

1858: 17 hours



Glory to God in the highest; on earth, peace and good will toward men.



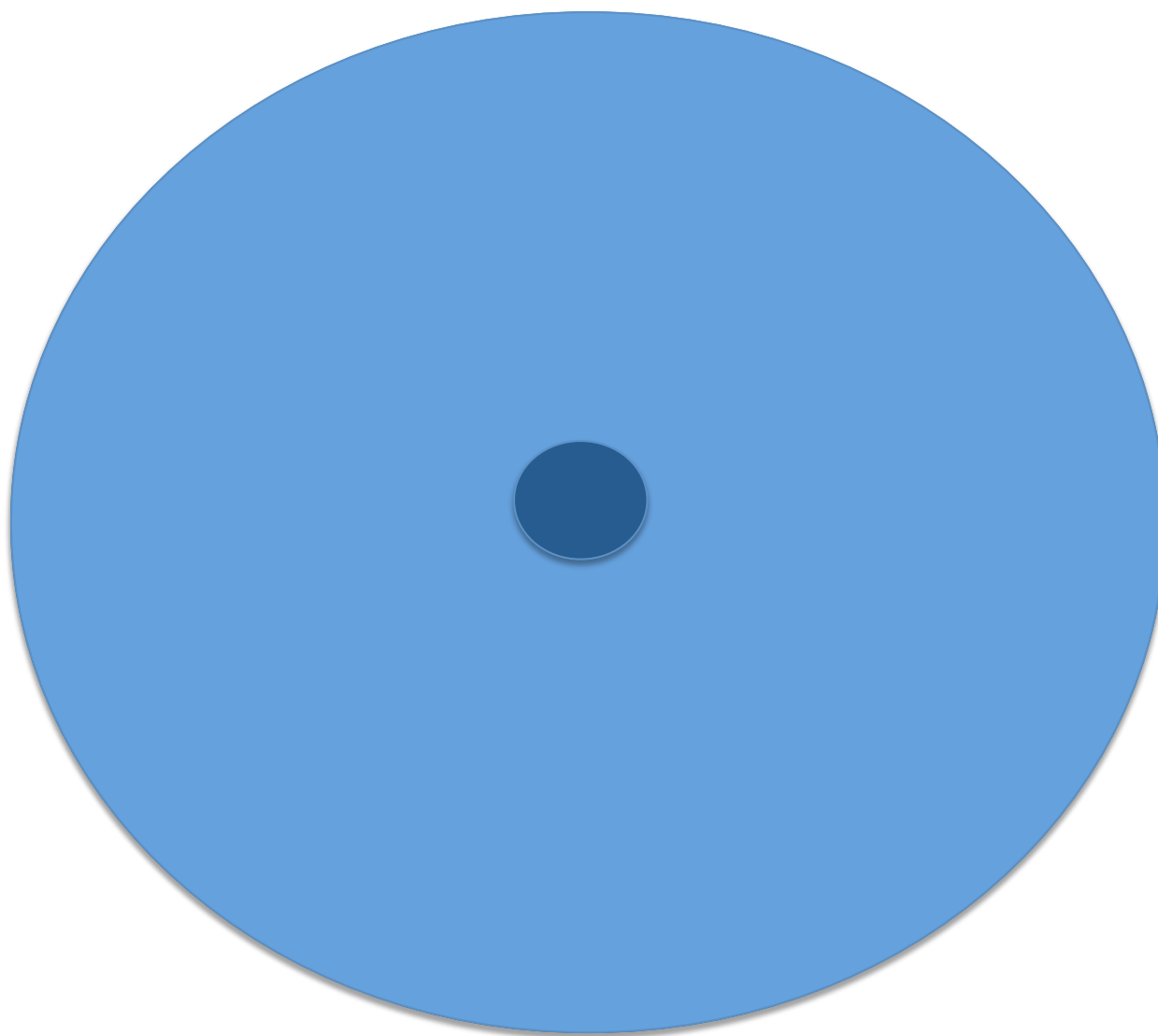
2009: less than 1 minute

1927: \$65 (about \$1,000)



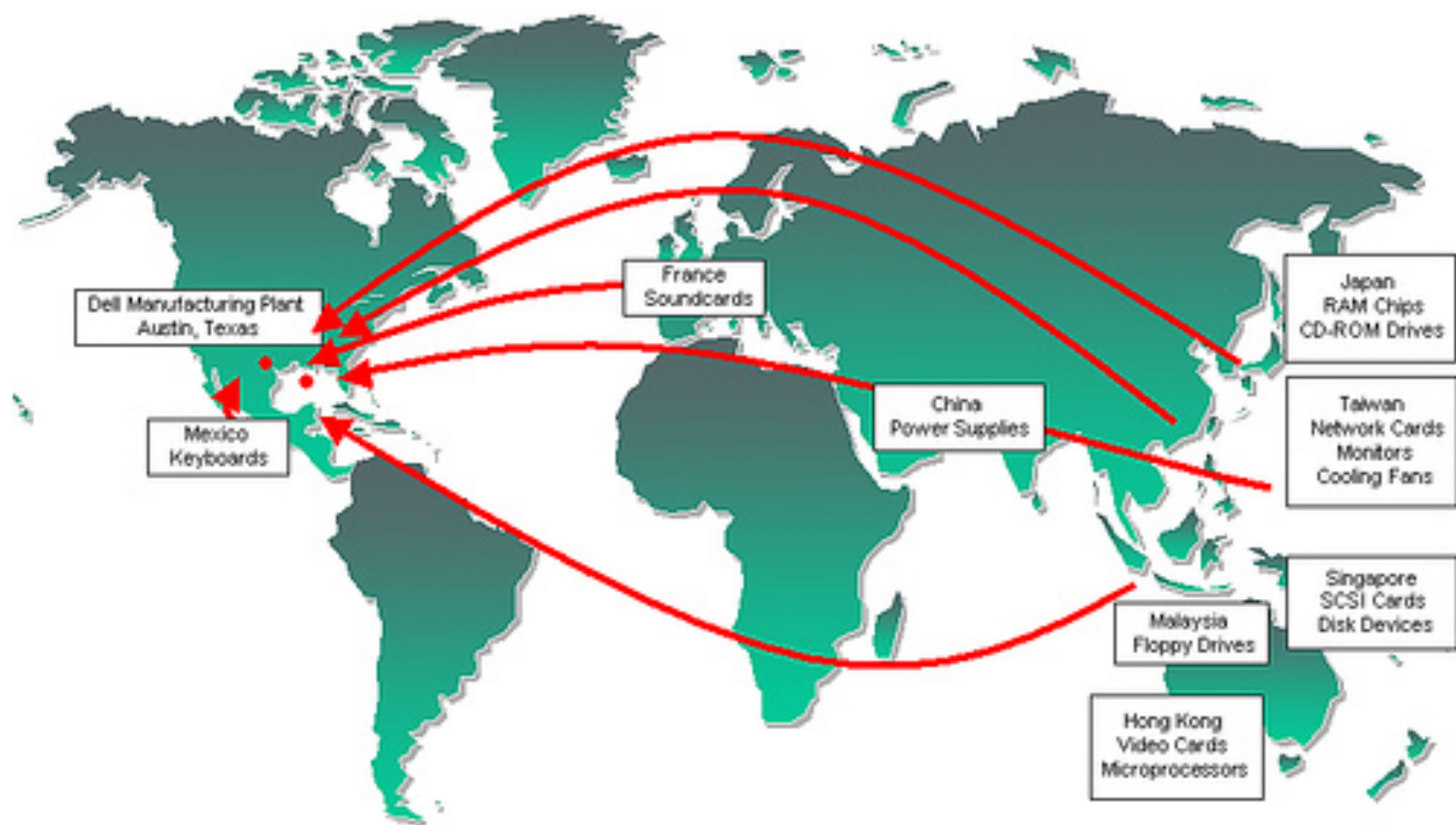
2009: about \$0.02

Death of Distance



Expanded primary living space

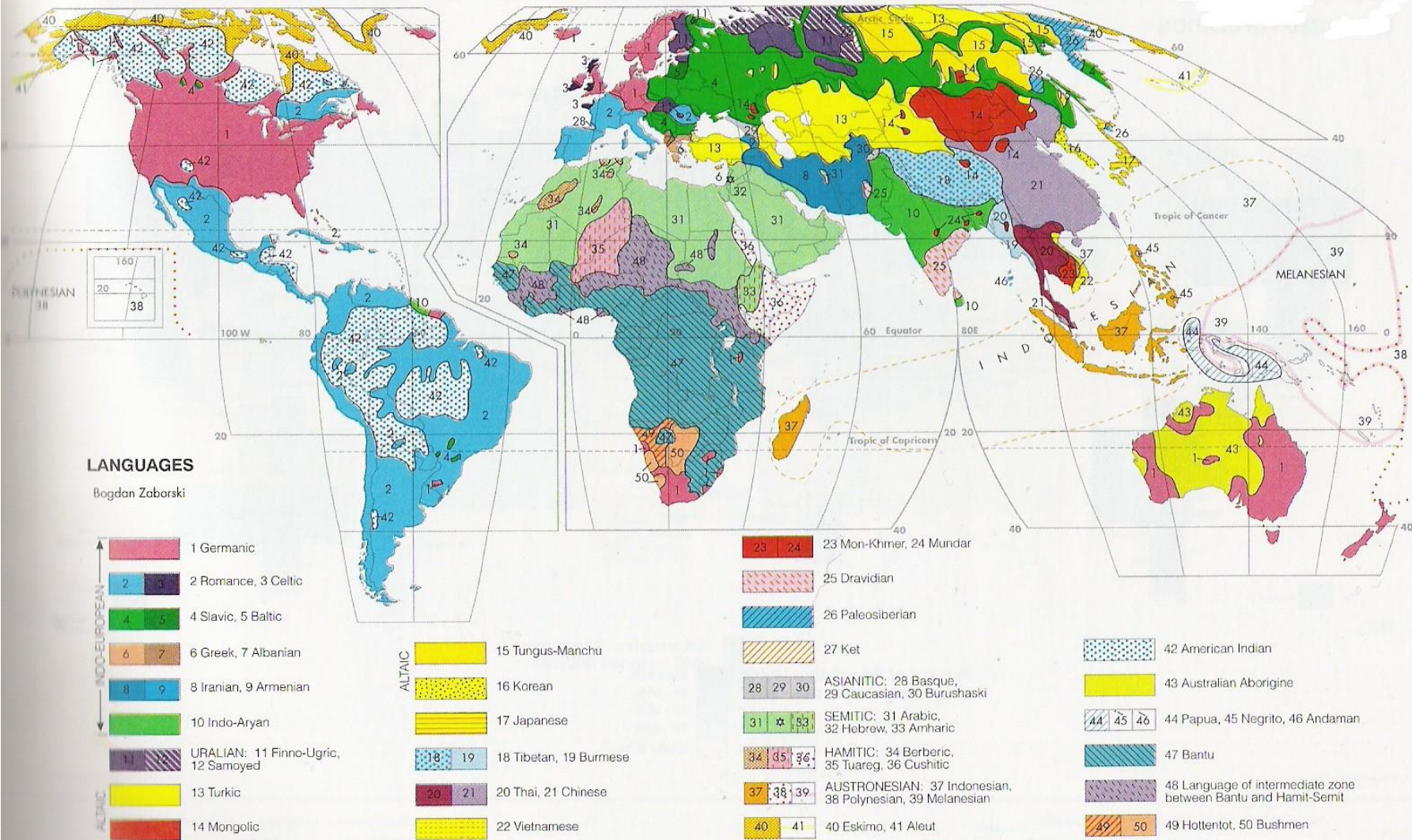
Challenges to live in the
expanded living space...



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.

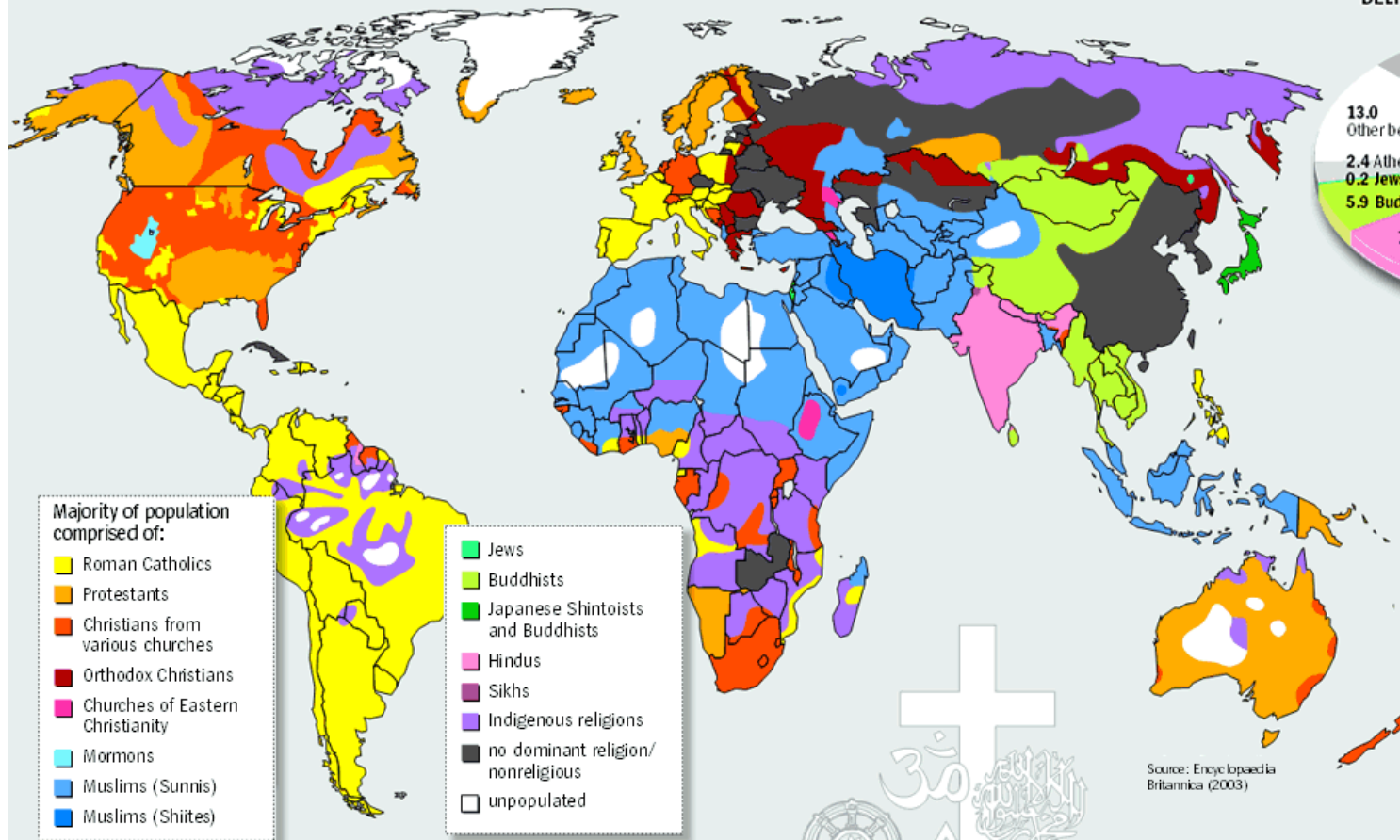
--New Commission on the Skills of the American Workforce (2007). Tough Choices or Tough Times

World Language Families 2006

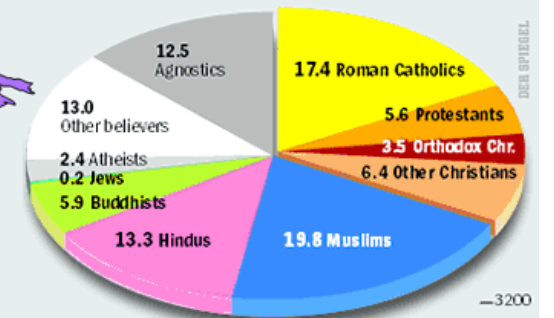


Source: Goode's World Atlas, 21st ed.

ATLAS OF FAITHS

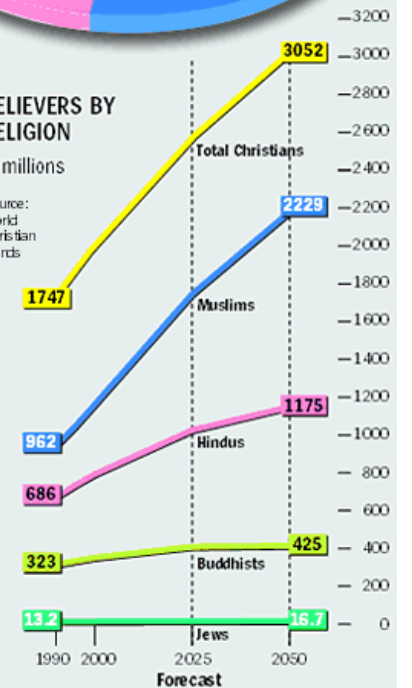


BELIEVERS as percentage of global population (2002)



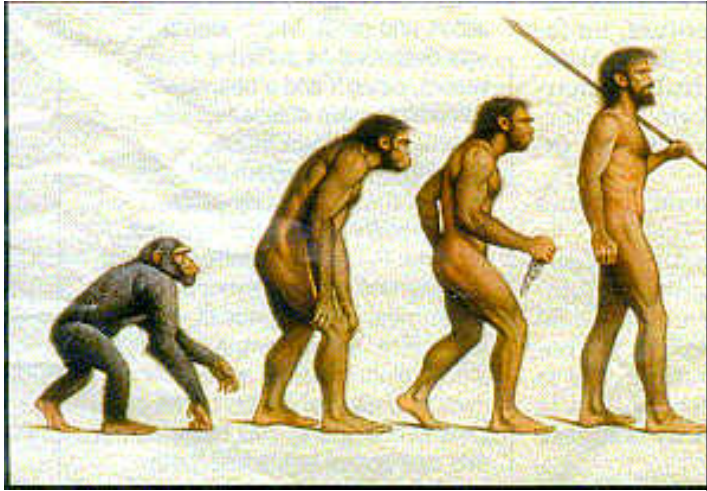
BELIEVERS BY RELIGION in millions

Source: World Christian Trends



Source: Encyclopedia Britannica (2003)

Technology



We shape our buildings;
thereafter they shape us.

----Winston Churchill



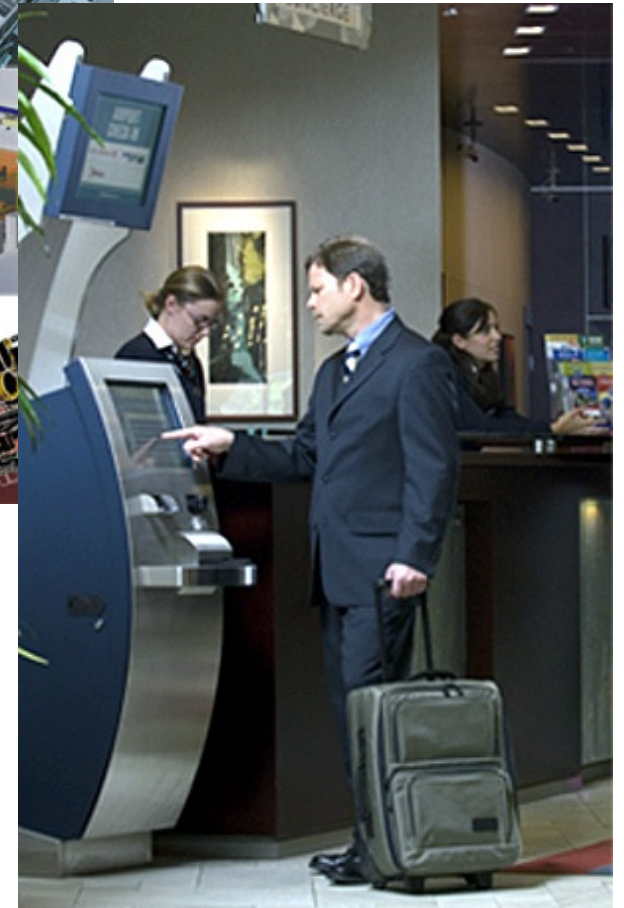
Swanni's Annual 'Best & Worst' HDTV List

- 1. Teri Hatcher**
- 2. Demi Moore**
- 3. Donald Trump**
- 4. Heather Locklear**
- 5. David Letterman**
- 6. George W. Bush**
- 7. Ray Liotta**
- 8. Sandra Bullock**
- 9. Bill Clinton**
- 10. Clint Eastwood**

- 1. Jessica Alba**
- 2. Eva Longoria**
- 3. Anna Kournikova**
- 4. Ben Affleck**
- 5. Ashton Kutcher**
- 6. Marcia Cross**
- 7. Halle Berry**
- 8. Jessica Simpson**
- 9. Nicole Kidman**
- 10. Angelina Jolie**

<http://www.tvpredictions.com/fall2005hd092605.html>





Over 10 million jobs lost due to automation in last 10 years

Today skills, no matter how complex, that can be exported through outsourcing or offshoring are vulnerable. Even some highly skilled jobs that can be outsourced, such as reading radiographs, may be in danger of having stable or declining demand. Skills for which a computer program can substitute are also in danger.

---Claudia Goldin and Lawrence Katz, 2009

New Hope



ebay®



Suhas Gopinath



私達はあなたの言語を話す

comercio internacional

nous parlons votre langue

enseñanza de idiomas extranjeros

我们讲您的语言

我们讲您的语言

nós falamos sua língua

hablamos tu idioma

لغتك

мы говорим ваш язык

שפה שלך

vostra lingua

ваш язык

affaire internationale avec l'asie

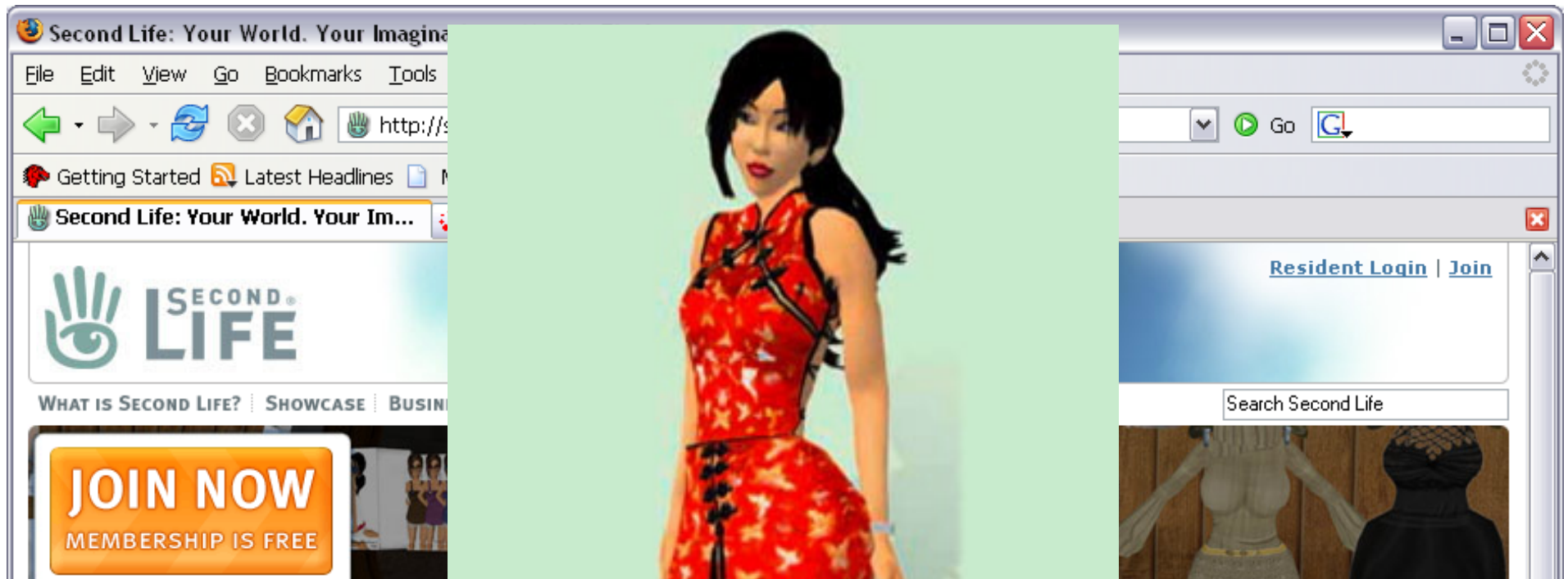
wir sprechen Ihre Sprache

international commerce

אנחנו מדברים השפה שלך

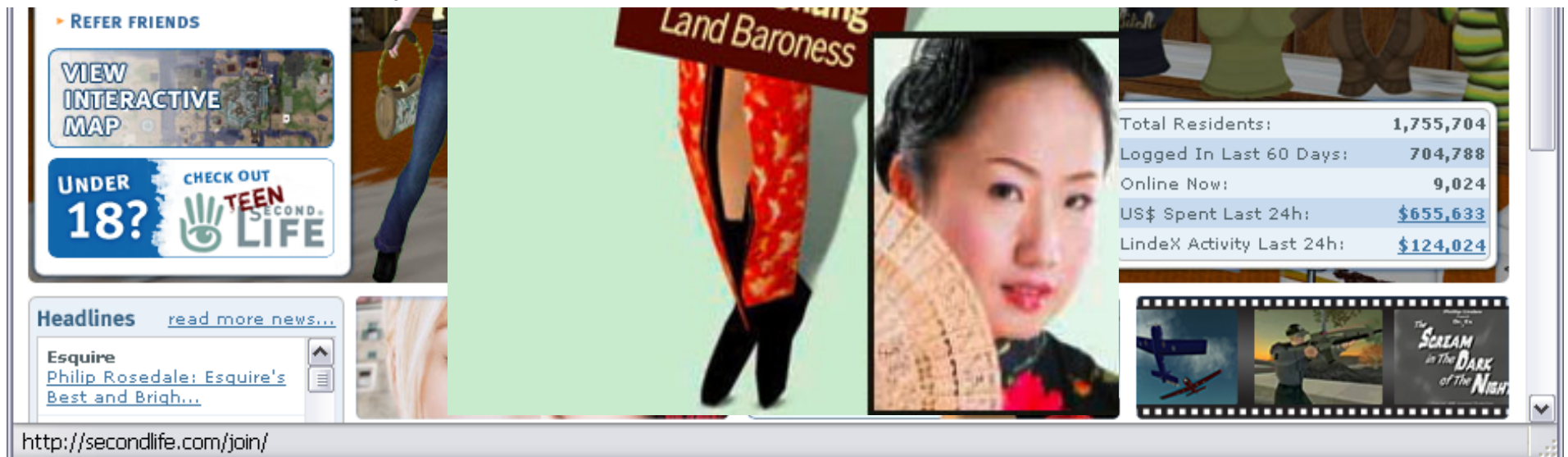
نتكلم لغتك

we speak your language



Anshe Chung has become the first online personality to achieve a net worth exceeding one million US dollars from profits entirely earned inside a virtual world.

--Business Week, May, 2006



Can All Children Be Above Average?

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

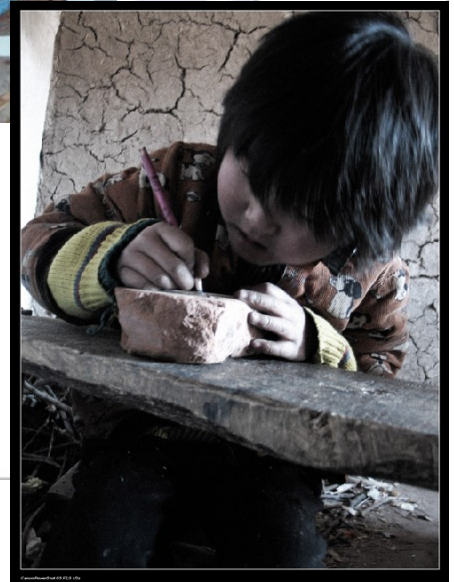
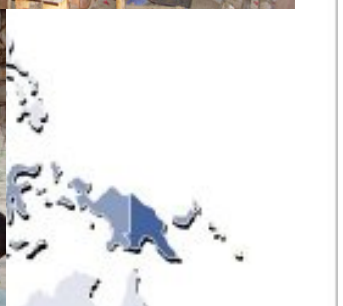
Cultivate Digital Competencies

- 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)





<http://zhaolearning.com>