

Education, Innovation and Economic Policy

What Nations Must Do Well In The
21st Century



SMART PEOPLE

SMART IDEAS

SMART POLICIES

Disclaimer Required by US Colleges Of Education

- I am not an educator
- I do not have a degree in education
- I am just a businessman
- My films represents my own observations – they are not:
 - Validated by a peer reviewed journal
 - Sanctified by a foundation funded study
 - Memorialized by a Government report
- Yes, I know there are 2.6 billion people in these countries
 - No, six students in 54 minutes are not meant to represent entire societies
- While I have chosen to change how my own children are educated, I am in no way implying or endorsing those changes for anyone else
- No, I do not think the the West should be more like China or India - except perhaps **in individual humility and common courtesy**

WARNING

About to Enter the Grief Cycle

1) DENIAL

- 1) Not an educator, perspective is slanted, political agenda

2) ANGER

- 1) Shoot the messenger

3) BARGAINING

- 1) Well-rounded, have a life, more fun

4) DEPRESSION

5) ACCEPTANCE

Show Film Clip

What will 21st Century be like?

20th Century

- Regional competition
- Broad wage spectrum
- Brawn & Brains paid well
- Modest technology
- Slow innovation
- Few career changes
- Knowledge grows slowly
- One-to-one relationships
- Few job cognitively demanding

21st Century




- Global competition
- Tri-modal wage distribution
- Brawn wage decline; brain wage flat, innovators well paid
- High-tech = highest wages
- Rapid innovation the norm
- Knowledge expands rapidly
- Networks of relationships
- 6-10 career changes
- Cognitive demands in every job

Levers for Economic Growth




- Smart People
- Smart Ideas
- Smart Government Policies

Smart people

- **Raise cognitive levels**
 - Rigorous curriculum in primary & secondary school
 - Redefine “Liberal Arts” education
 - math, physics, chemistry, biology, computer science,
 - world literature, world history, entrepreneurial econ.
 - world languages – Mandarin, Hindi, English, Arabic
 - Liberal Arts Education
 - should start at age 4
 - never ends

	9 th Grade	10 th Grade	11 th Grade	12 th Grade
Neil 	Honors Algebra II Biology Honors English Spanish, Drawing Interpersonal Relationships Newspaper Physical Education	Honors Pre-Calculus/Trig Chemistry I Honors English World History Spanish II Drawing 2 Physical Education Newspaper	AP Calculus 1 & 2 Physics I Honors English, Honors US History Spanish III, Advanced Physical Conditioning, Newspaper PSAT	AP Statistics I & II AP Macroeconomics AP Envir. Science AP English Lit & Composition Creative Writing Spanish IV Recreational Games, Newspaper
Rohit 	Math, Chemistry, Physics, Biology, Computers, World History, Geography, English Grammar, English Literature, Civics Sanskrit	Math, Chemistry, Physics, Biology, Computers, World History, Geography, English Grammar, English Literature, Civics Sanskrit Proficiency Exam in all subjects (20 hours)	Math, Chemistry, Physics, Computers, English Grammar, English Literature, Environmental Education	Math, Chemistry, Physics, Computers, English Grammar, English Literature, Environmental Education Proficiency Exam in all subjects (15 hours) College Entrance Exams 4 Taken 4-6 hours each
Rhuizang 	Math Math III (elective) Physics Chemistry Computers Chinese English History Politics Fine Arts & Music Physical Education	Math Physics Chemistry Computers Chinese English History Politics Music English Reading (elective) Chamber Orchestra (elec)	Math Physics Chemistry Biology Chinese English Politics Geography Lab Tests Physics Chemistry Biology	Math Physics Integrated Science – (physics, chem., biology) Chinese English Politics History Based on Math scores and Math Competition results – was accepted to Peking University

Co-curricular Activities - Boys

	9 th Grade	10 th Grade	11 th Grade	12 th Grade
Rohit 	Soccer Voice lessons Debate Team Competitive Charades Chess Team	Soccer Voice lessons Debate Team Competitive Charades Chess Team	Soccer Voice lessons Debate Team Competitive Charades Chess Team Program Host Student President - Boys	Soccer Voice lessons Debate Team Competitive Charades Chess Team Program Host Student President - Boys
Neil 	Football Team Newspaper Graphics	Football Team Newspaper Graphics	Football Team Newspaper Graphics Environmental Club	Student Body President Newspaper Graphics Environmental Club
Ruizhang 	English Club Art Festival	Choir Music Club (violin) Farming Military Training AutoCAD Training Chinese folk dance	Music Club (violin) Videography Training	

Teach Global First Languages

- Mandarin – 900 million
- Hindi – 400 million
- Spanish – 380 million
- English - 350 million
- Arabic – 250 million
- French – 70 million
- Farsi – 40 million

Strategic to economic and national security - CIA

Mentor New Skills

- **Dr. Tony Wagner**

- Critical Thinking and Problem-Solving
- Collaboration across Networks and Leading by Influence
- Agility and Adaptability
- Initiative & Entrepreneurism
- Oral & Written Communication
- Accessing & Analyzing Information
- Curiosity and Imagination

- **Dan Pink**

- Design
- Story
- Symphony
- Empathy
- Play
- Meaning

Smart Ideas

- Increase R&D investment
 - in the “right” technologies
- Build on clusters of national strength
 - Distinguish regional competitive advantages
- Be mission critical in global market
 - Make things that matter to world market

Today's Industries - Yesterday's Research

- Bell Labs
 - Fax Machines- First public demonstration – 1925
 - TV Transmission - First public demonstration – 1927
 - Invention of the Transistor - 1947
 - Invention of photovoltaic solar cell- 1954
 - Creation of UNIX- 1969
 - First Large scale cellular phone network - 1978
- XEROX PARC
 - Computer mouse, Ethernet technology, Laser printing
- RCA Labs
 - Color TV, Tape recording, Transistors, Lasers, Solar cells
- DARPA
 - Computer graphics, Microprocessors, Semiconductor design, Parallel processing, Local Area Networks

Basic Science Takes Time

- Scientific breakthroughs require:
 - Large groups of people with high IQ's, PhD's, deep curiosity and strong work ethic
 - Infrastructure – labs, computers, specialized equipment
 - High Risk Capital – expect zero returns
 - Tolerance for repeated failures
 - Serendipity
- Discovery to Market – 15-20+ years

Smart Ideas

- 21st Scientific Investments
 - Carbon-free energy
 - Energy efficiency
 - Green-tech, Clean-tech
 - Transportation
 - Electrical grids
 - Genetics
- Are investments being made?
- In sufficient quantity?

Smart Policies

- Policies that
 - Promote formation of new ventures
 - Accelerate growth
 - Reward success
 - Dampen failure
 - Incent re-investment

Primary/Secondary Education's Role

- Smart People
 - More rigorous curriculum
 - Fewer electives
 - Foundation of knowledge required
 - Global languages
 - Cultivate creativity & innovation
 - Introduce driving economic model
 - Entrepreneurship / New Venture creation

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