



Future of Education



World Academy Forum on

GLOBAL HIGHER EDUCATION

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Evolution of Education



"The day is coming when the work done [via distance learning] will be greater in amount than that done in the class-rooms of our colleges."

Former President of University of Chicago & Bradley University

"[The use of technology will put] American education 25 years ahead."

Chairman of the Federal Communications Commission



Evolution of Education

“The day is coming when the work done [via distance learning] will be greater in amount than that done in the class-rooms of our colleges.”

-William Rainy Harper, 1885

Former President of University of Chicago & Bradley University

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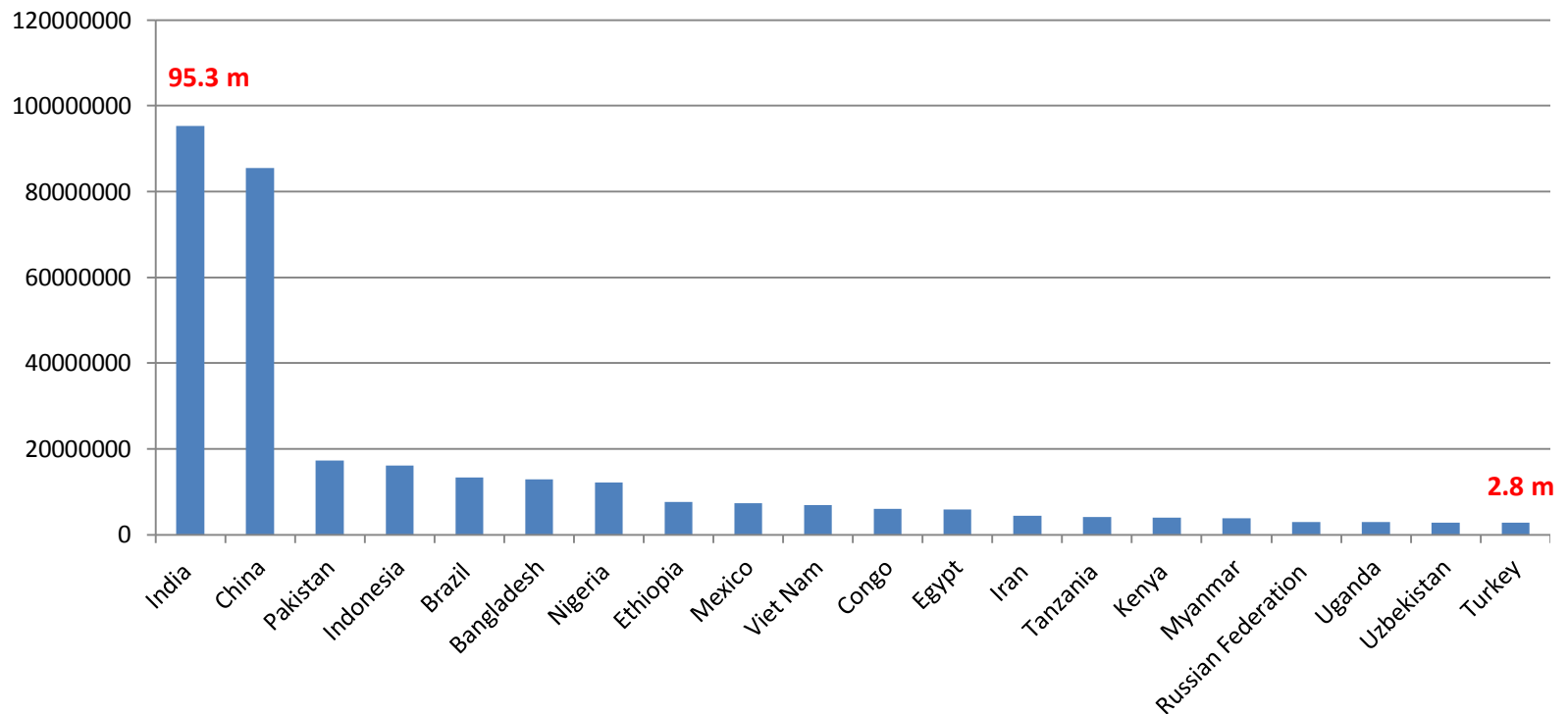
-Technology referred to is delivering lessons over the radio in 1948

Chairman of the Federal Communications Commission



Youngsters Not Enrolled in College

20 countries with largest population of youngsters not enrolled in college



Total number of college age youth left out of tertiary education worldwide: **366 m**



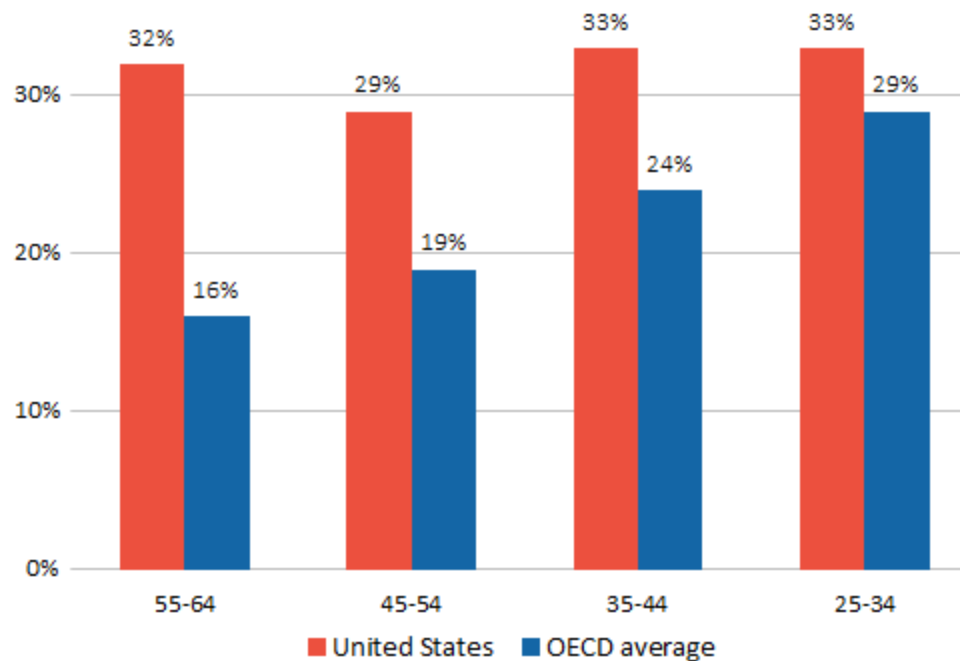
Projected Enrollment in Global Tertiary Education

Year	Students
2000	99.4 million
2011	183 million
2025	262 million
2030	414.2 million
2035	520 million



US and OECD College Attainment

Percentage degree attainment in OECD countries and the U.S. by age group, 2010



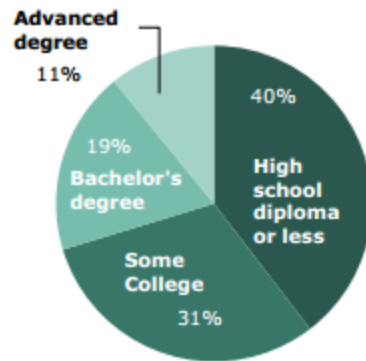
Source: National Center for Education Statistics



Educational Level - US

How Well Educated Are Americans?

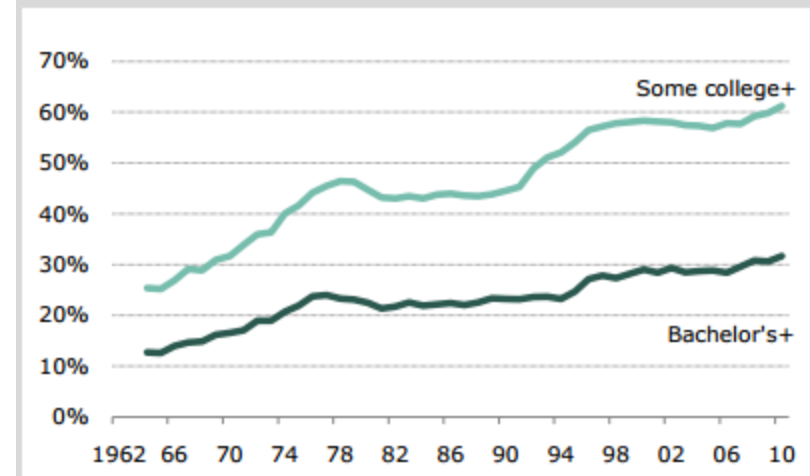
Highest level of education among adults ages 25-64



Notes: Based on Pew Research Center calculations of 2009 American Community Survey data. Some college includes two-year college graduates. Total percentage does not equal 100 due to rounding.

A Growing Share of Young Adults are College Graduates

College attainment of 25- to 29-year-olds

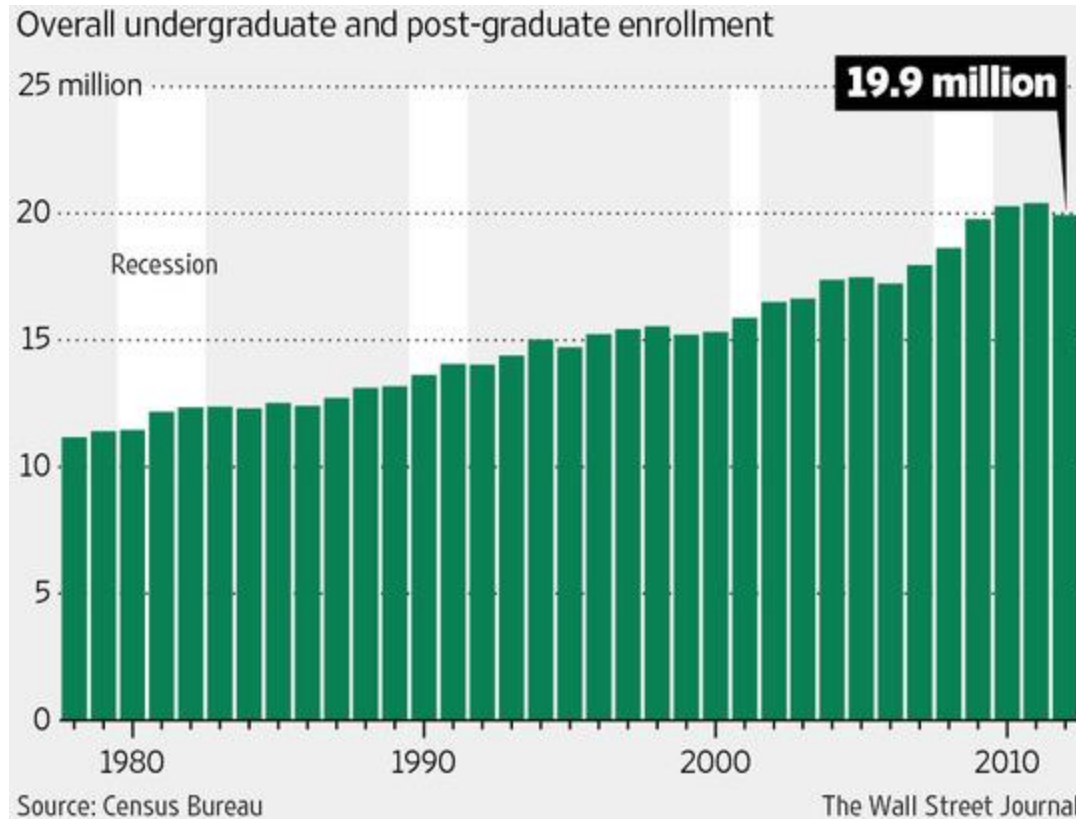


Source: March Current Population Survey (CPS) Integrated Public Use Micro Sample

Notes: Prior to 1992, persons with at least a bachelor's degree refers to those with four or more years of college. Before 1992, persons with at least some college refers to those who completed at least one year of college.



Enrollment in Colleges - US

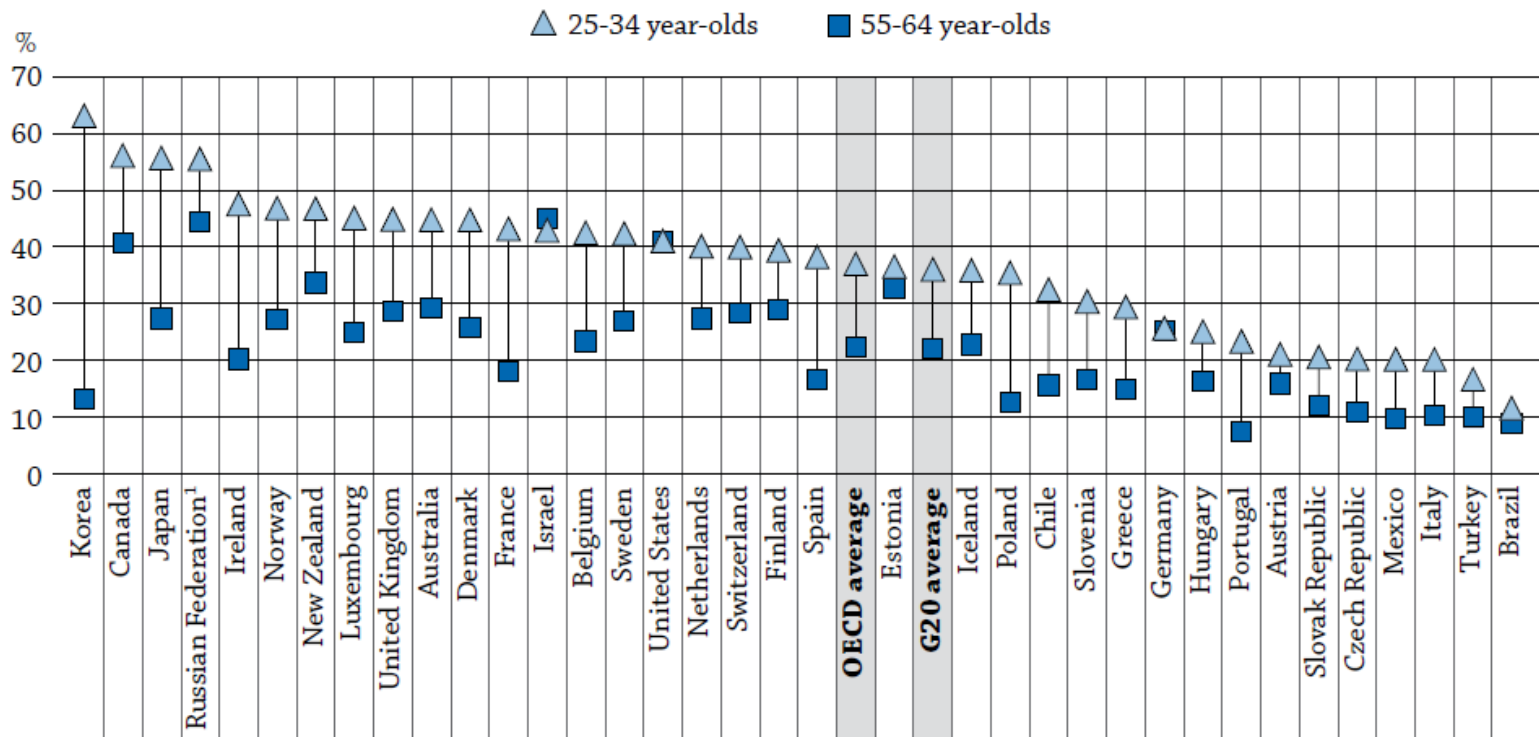


By 2018, the US will need 22 million more credentials to fill good jobs, but will fall short by 3 million. College enrollment in 2012 declined by nearly a half million students compared to a year earlier, according to the U.S. Census Bureau



College Graduates


Percentage of population that has attained tertiary education, by age group (2009)



1. Year of reference 2002.

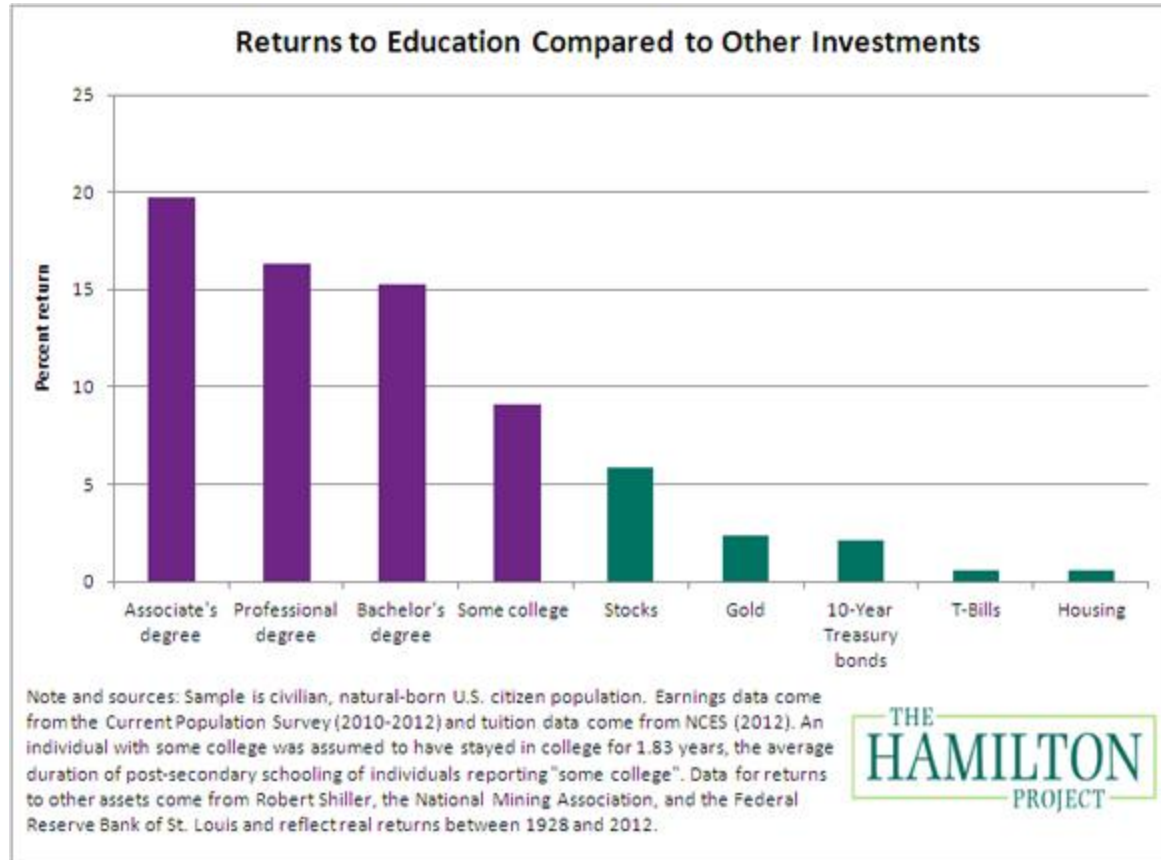
Countries are ranked in descending order of the percentage of 25-34 year-olds who have attained tertiary education.

Source: OECD. Table A1.3a. See Annex 3 for notes (www.oecd.org/edu/eag2011).

StatLink  <http://dx.doi.org/10.1787/888932459831>

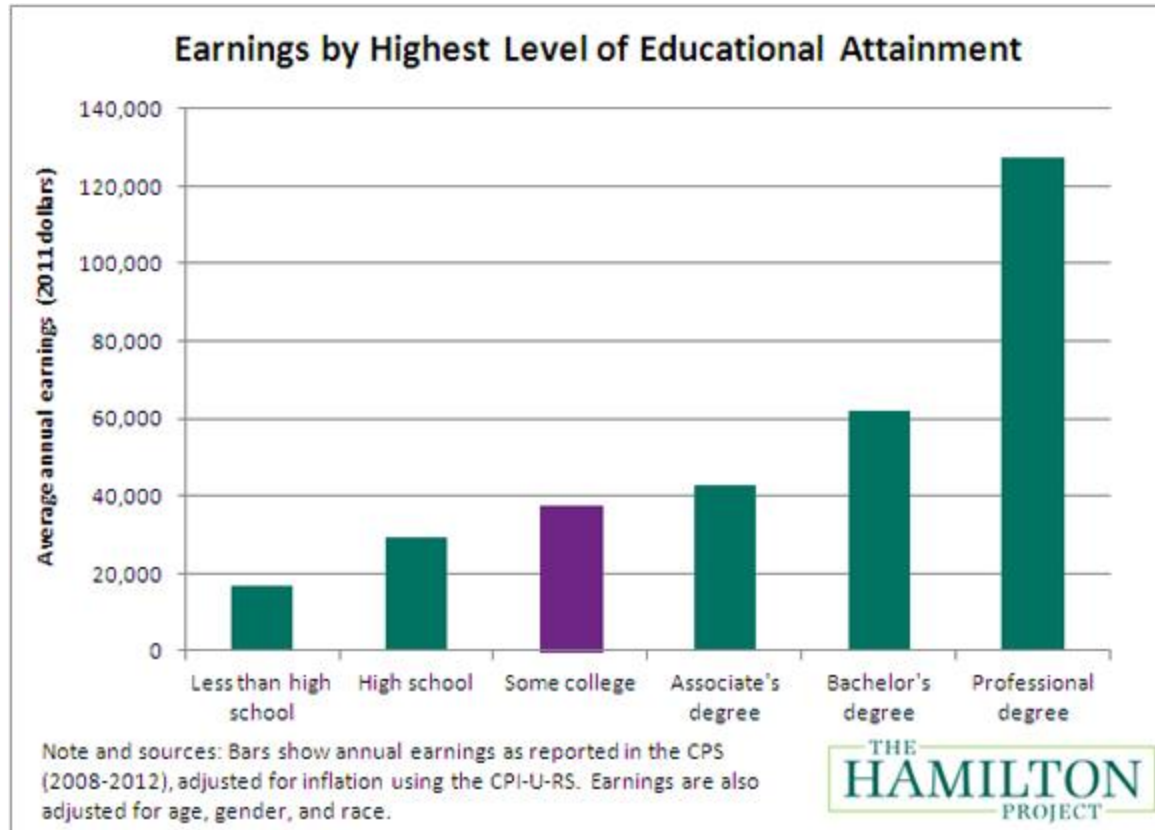


Education as an Investment - US





Education and Earnings - US

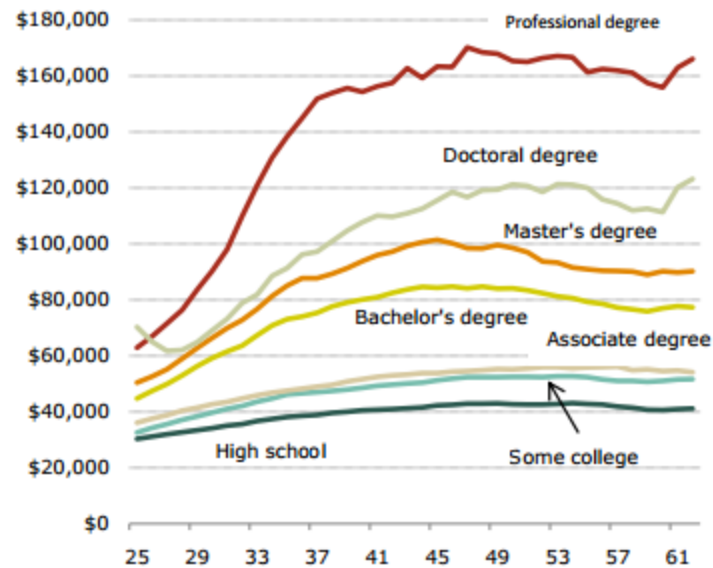


Those who graduate from a four-year college, on average, earn \$20,000 more a year as a result of the degree



Education and Earnings - US

Mean Earnings by Age, 2009



Source: 2009 American Community Survey (ACS) Integrated Public Use Micro Sample

Notes: Estimated for full-time, full-year workers. Plots show a 3-year moving average.

PEW RESEARCH CENTER



Education and Earnings - US

Earnings and Employment for College vs. High School Graduates (Ages 23-25)



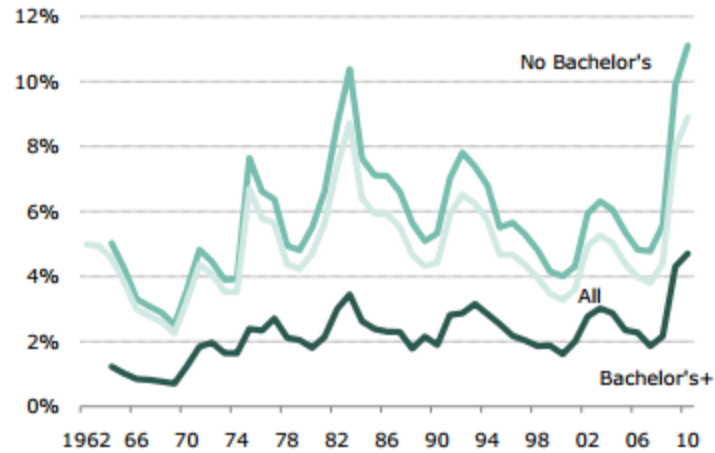
Note: Earnings and employment figures include all Americans between the ages of 23 and 25 (inclusive).
Source: Data are from the CPS for the non-institutionalized population, and from the U.S. Census for the institutionalized population.





Education and Employment - US

Unemployment Rates by Education, 1962-2010



Source: March Current Population Survey (CPS) Integrated Public Use Micro Sample

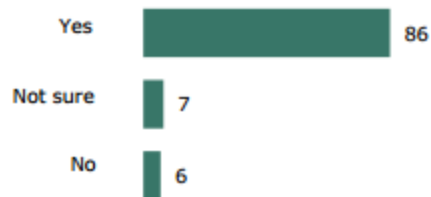
Notes: For persons age 25 and over. Prior to 1992, persons with at least a bachelor's degree refers to those with four or more years of college.



How Education Impacts Work Life

Has College Been a Good Investment for You Personally?

% of college graduates

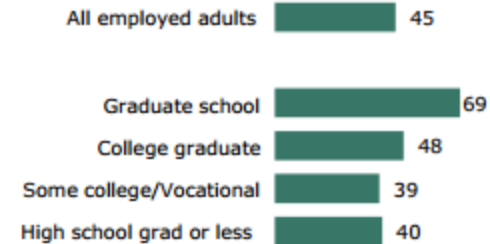


Note: Based on college graduates ages 18-64 who are not currently enrolled in school, n=513. "Don't know/Refused" responses not shown.

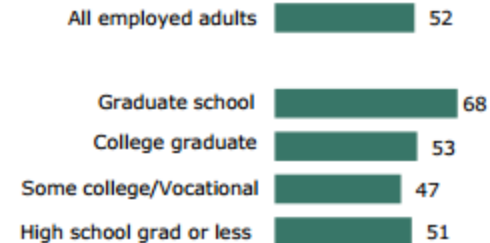
How Education Impacts Work Life

Based on employed adults

% saying work is very satisfying



% saying work is very interesting



Notes: Based on adults who are employed either full or part time, n=1,281. "Graduate school" includes those who attended graduate school but did not receive a degree. "Some college/Vocational" includes two-year college graduates.



Affordability

Is College Affordable?

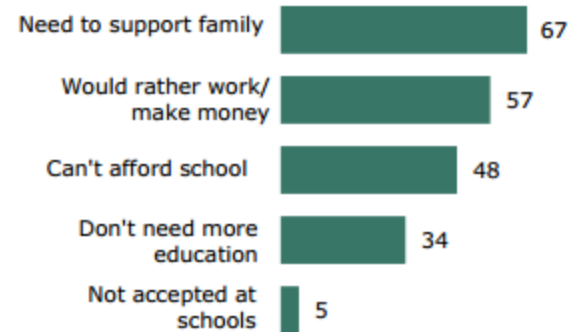
Agree or disagree: College costs in general are such that most people can afford to pay for a college education. (%)



Note: "Don't know/Refused" responses not shown.

Reasons for Not Going to College

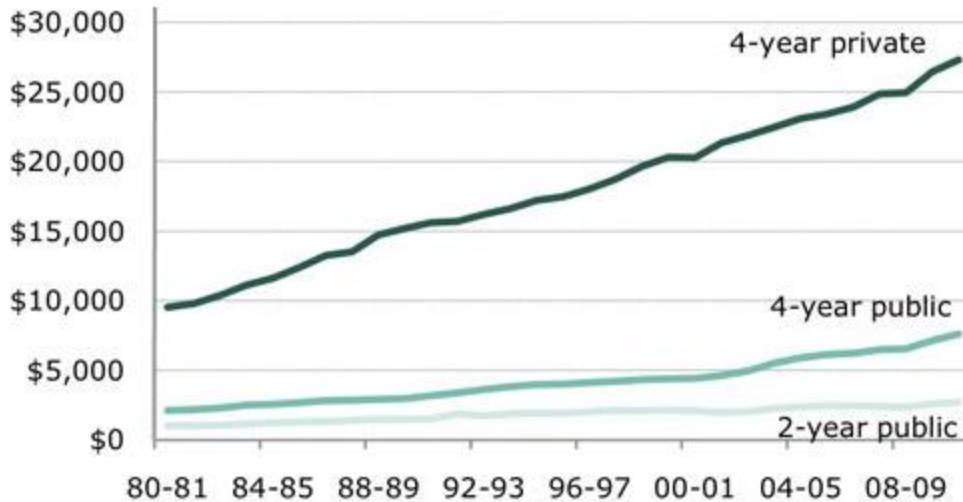
% saying this applies to them



Note: Based on adults ages 18-34 who do not have a four-year college degree and are not currently enrolled in school, n=311.



College Tuition - US



\$22,261

Average cost of a public college education in 2012-2013

\$43,289

Average cost of private college education

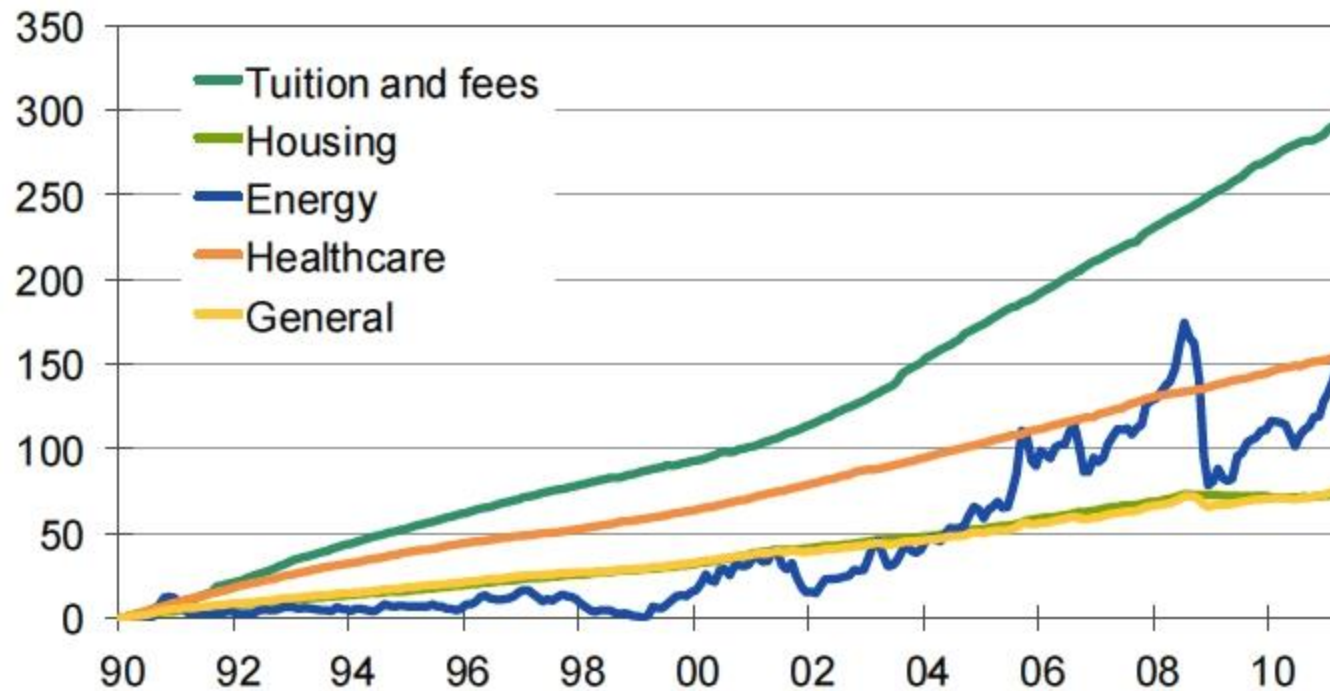
The cost of a private non-profit four-year college institution has risen **267%** over the past 30 years

The cost of a public four-year college institution has risen by **357%** in the same period



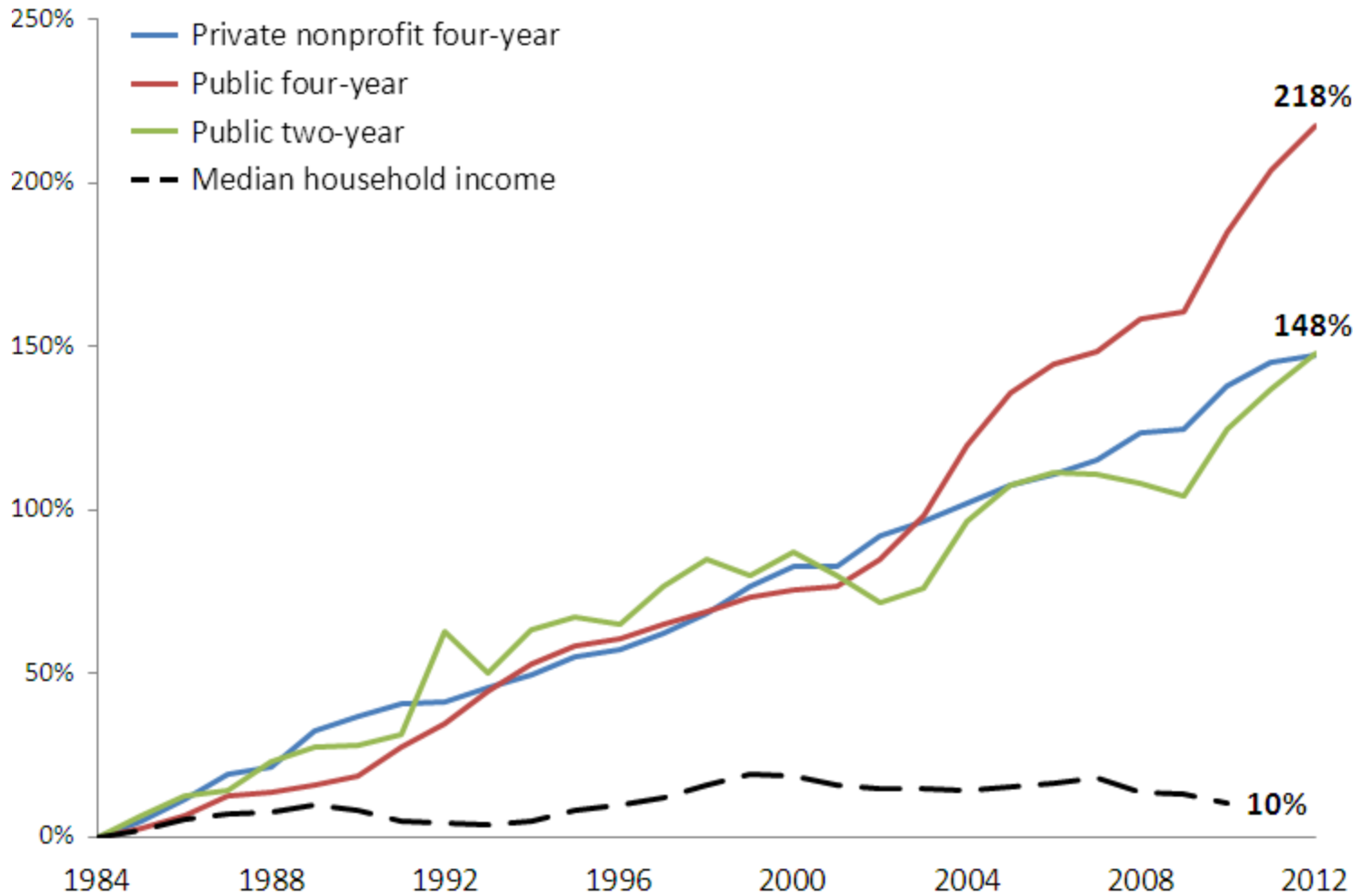
Tuition vs. Other Price Indices - US

CPI, cumulative % change since 1990





Median Household Income vs. College Costs - US

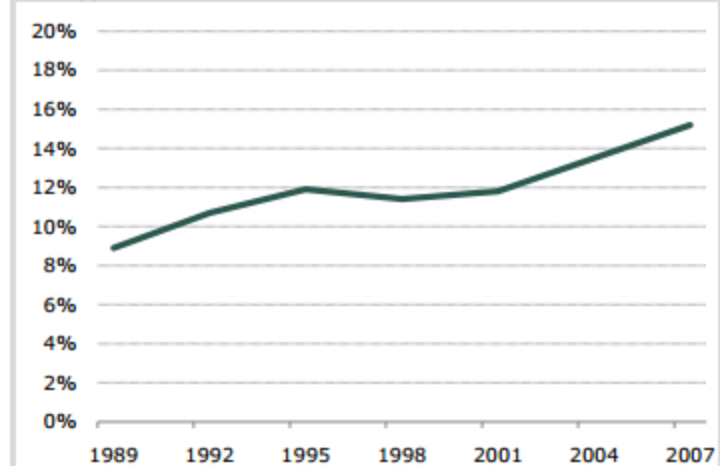




Families' Student Loans - US

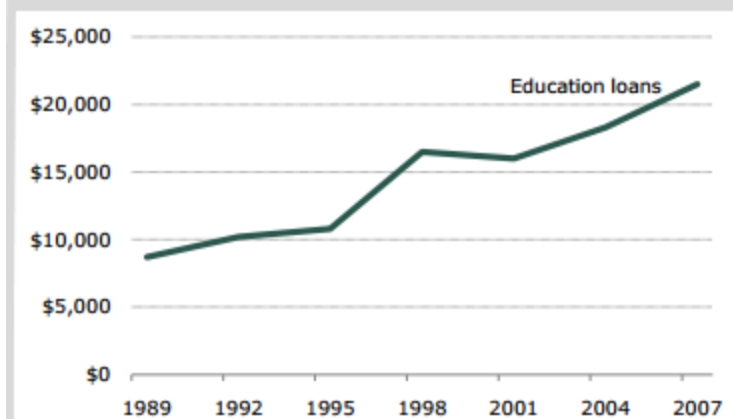
More Families Have Outstanding Student Loans

Share of families with student loans



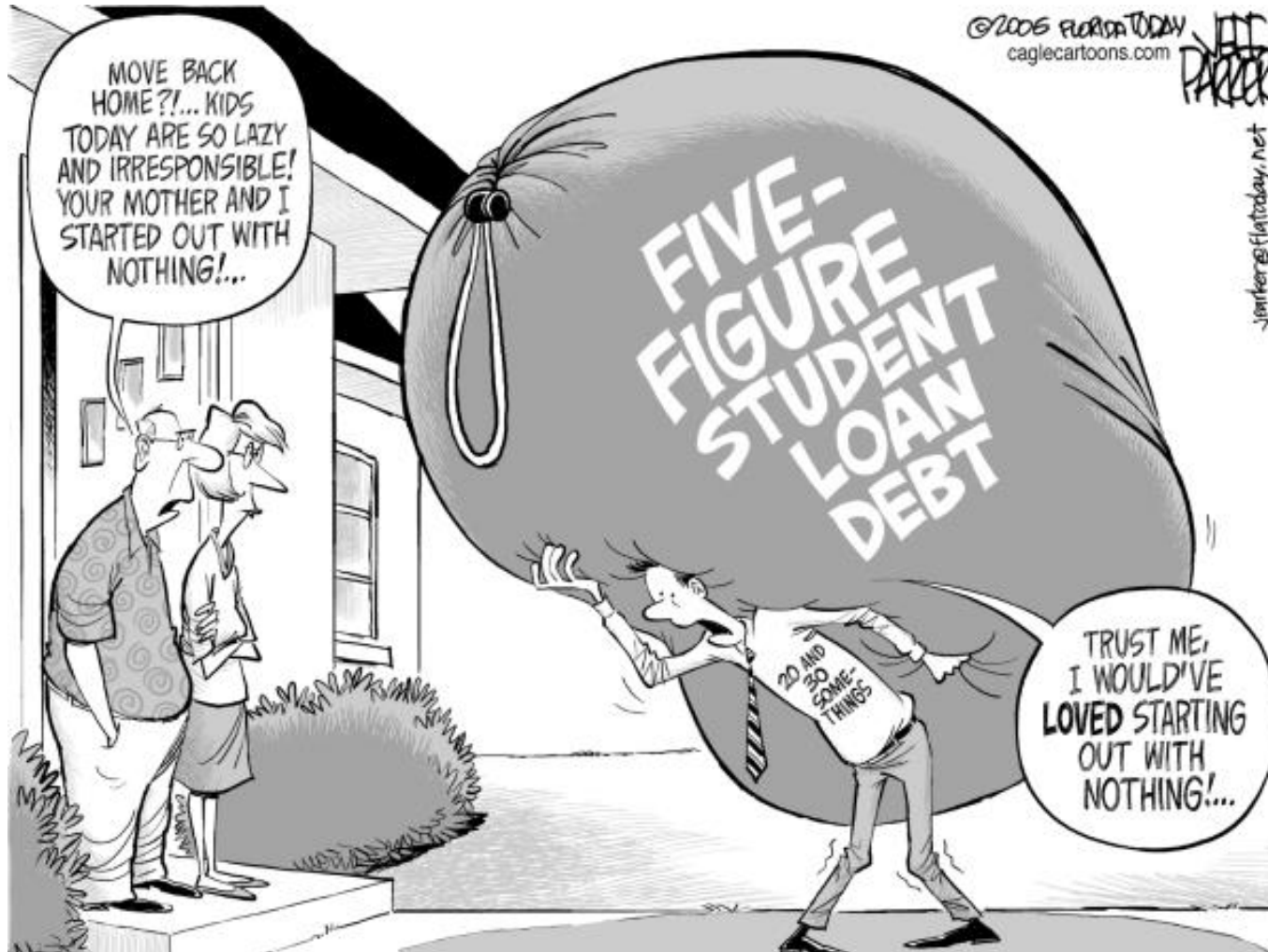
... and the Average Amount Owed Has Increased

Amount owed per family for families with student loans (in 2007 \$)





Student Loan Debt





Tuition and other Costs - US

Two-thirds of students graduating from American colleges are graduating with some level of debt

The average borrower has a debt of \$26,600

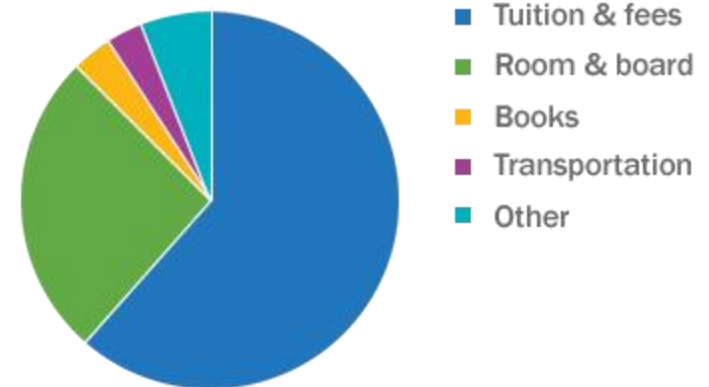
One in ten graduates accumulate more than \$40,000 of debt

Student loan debt has crossed \$1.2 trillion

It almost tripled between 2004 and 2012

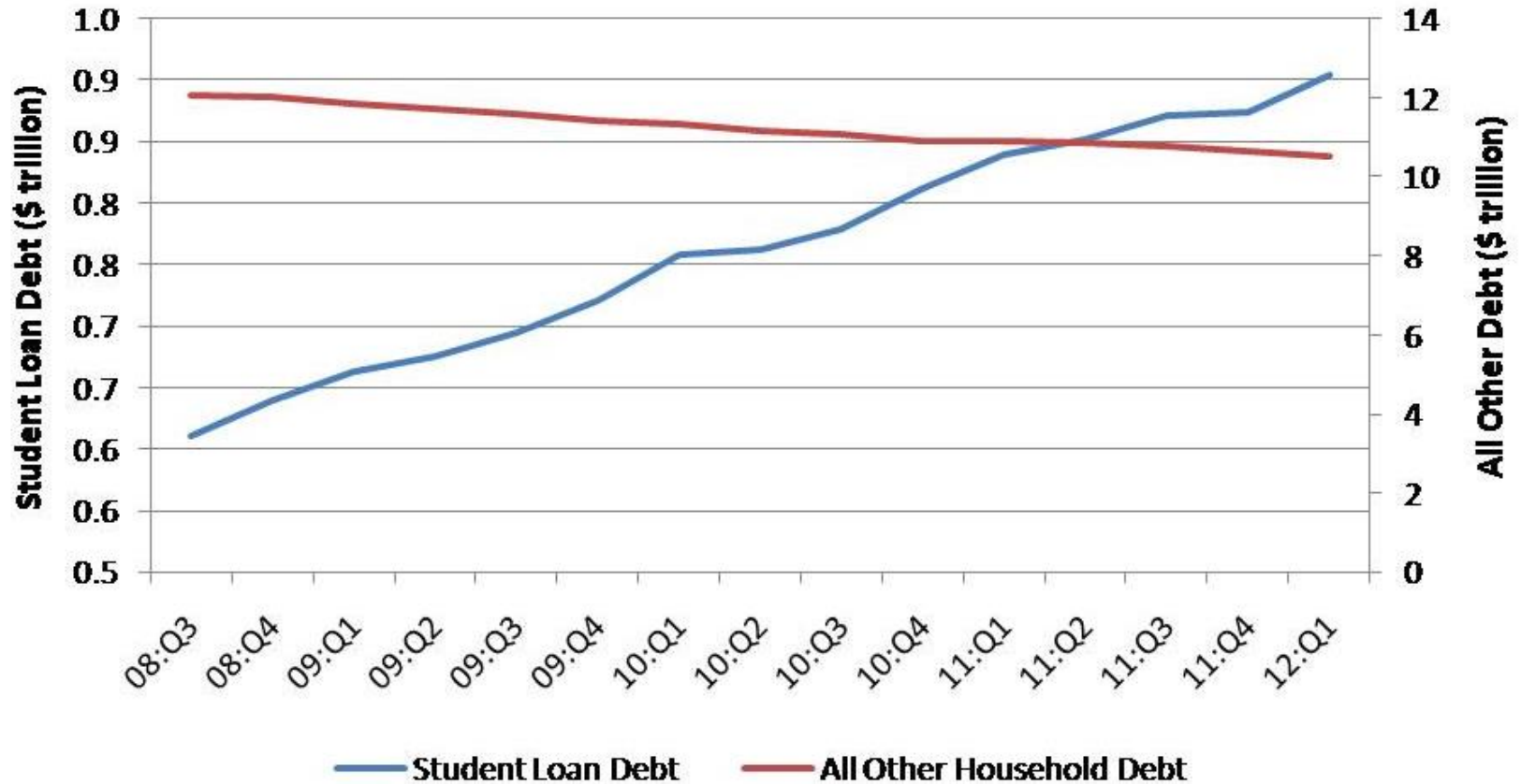
One in five graduates who borrowed for tuition via the federal direct loans program are not paying the money back

2012-2013 costs according to *The College Board*



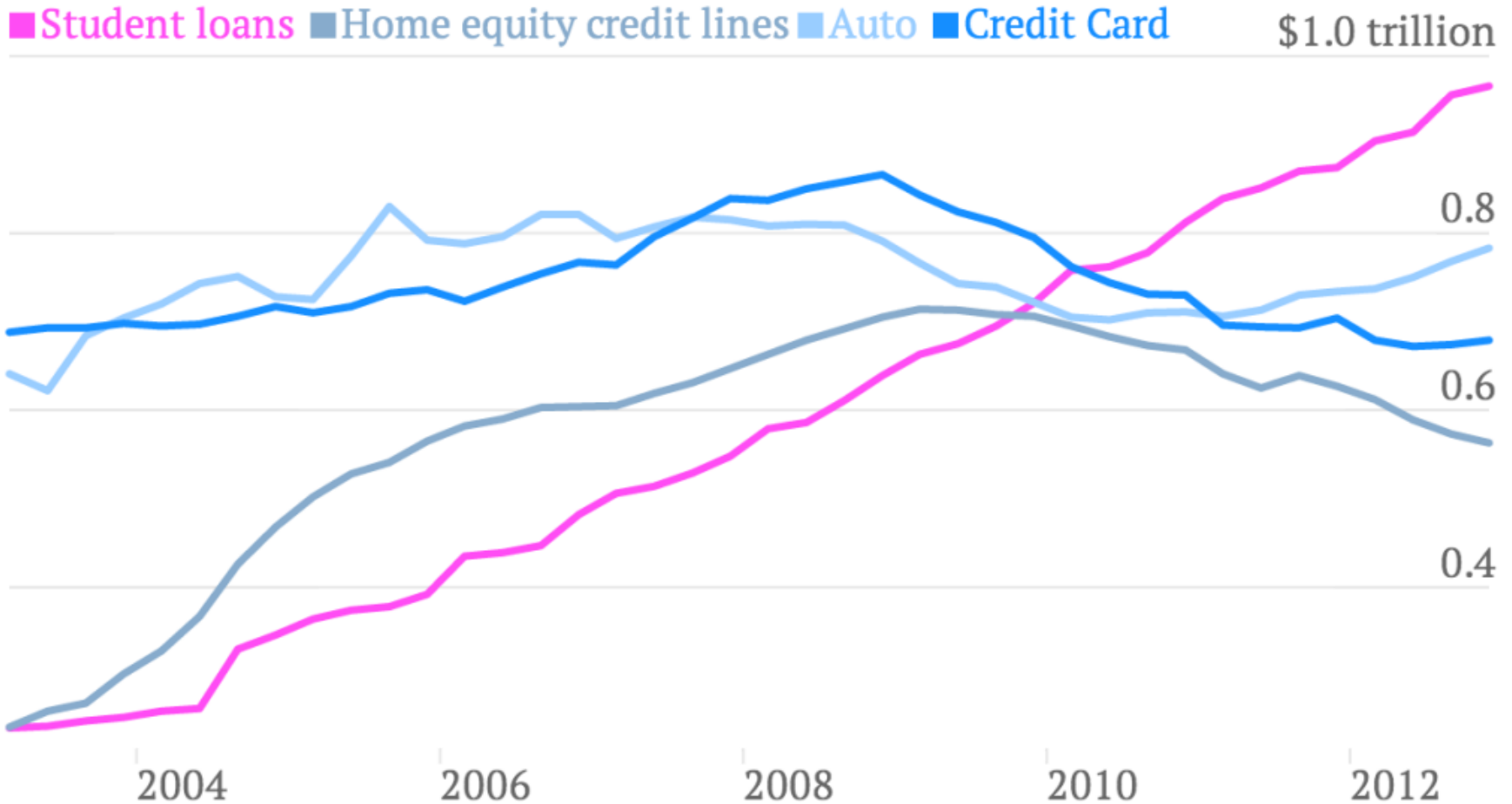


Student Loan Debt vs. Household Debt - US



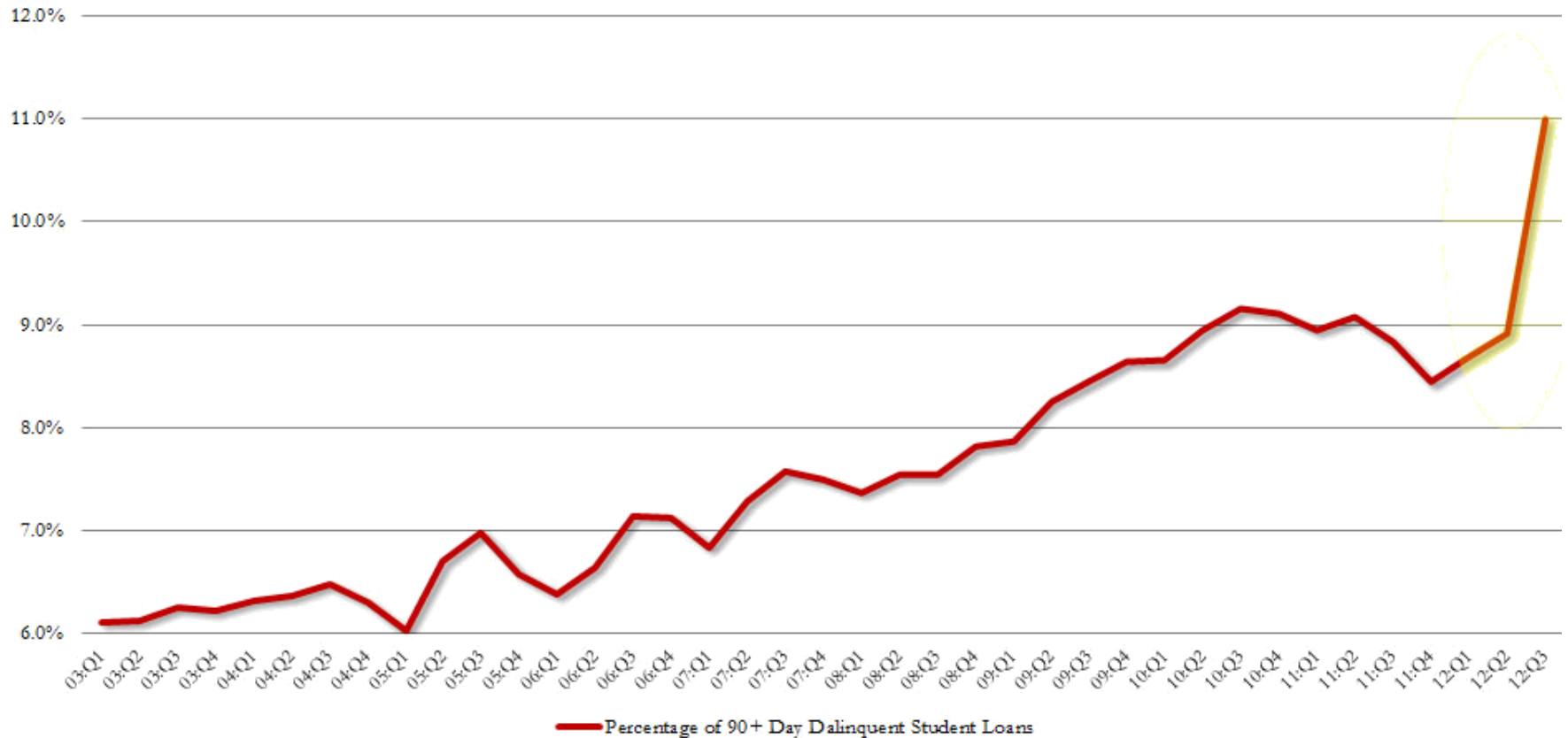


Student Loans vs Other Loans - US





% of 90+ Day Delinquent Student Loans - US





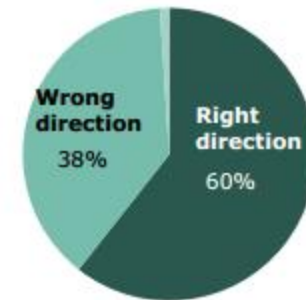
Dropping Out of College

College Completion Rank Declining: Percentage of 25- to 34-Year-Olds with an Associate Degree or Higher, 2007



Right Direction or Not?

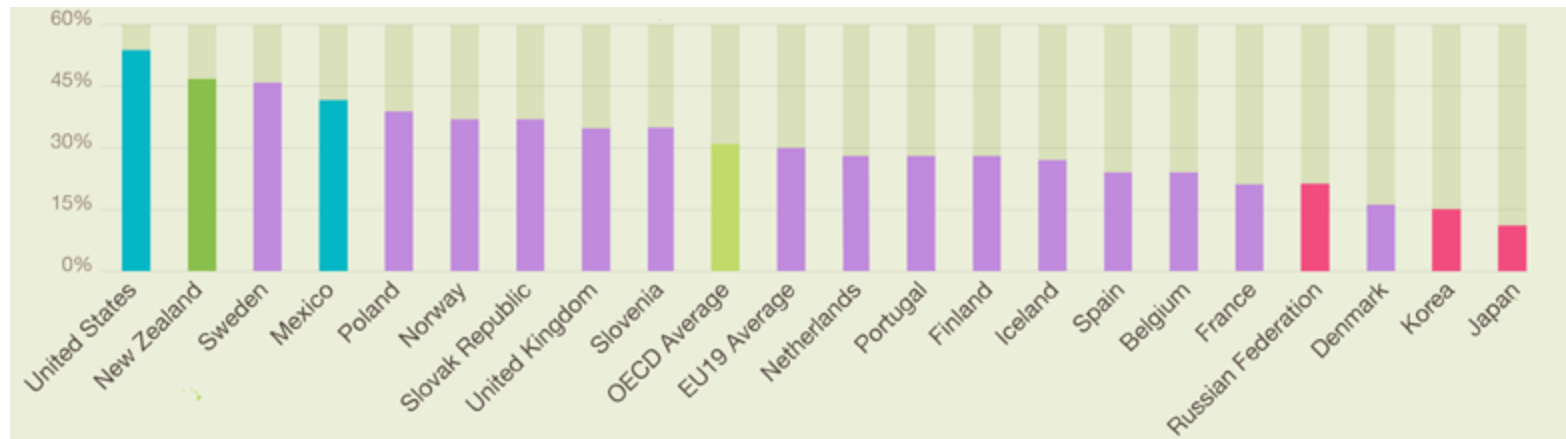
Share of college presidents who say higher education in U.S. is headed in the ...



In 2011, only **56%** of US college students complete four-year degrees within six years. Only **29%** of those who start two-year degrees finish them within three years



International Dropout Rate



Among adults ages 18 to 34 who are not in school and do not have a bachelor's degree, 67% say a major reason for not continuing their education is the need to support a family. 48% say they can't afford to go to college



Tertiary Enrollment Rates Vary Vastly

Mozambique	5%	Turkey	55%
Bangladesh	15%	Czech Republic	65%
Indonesia	25%	Norway	75%
Paraguay	35%	Belarus	85%
Panama	45%	Finland	95%



Differing Budgets

Public spending on education as a % of GDP is...

higher than 7% in Denmark, New Zealand, Norway, Sweden, Moldova, Maldives, Cyprus

less than 7% in Austria, Finland, Estonia, South Africa, Ireland, Belgium

less than 6% in the US, UK, Switzerland, Slovenia, Israel, Brazil

less than 5% in Russia, Chile, Romania, Greece, Serbia

less than 4% in Kazakhstan, India, Venezuela, Egypt

less than 3% in Bangladesh, Peru, Turkey

less than 2% in Lebanon, Zambia

less than 1% in Myanmar



Average Age of the Learner - US

The average age of students will rise, with more people becoming lifetime learners. College enrollment in the US between 2006 to 2017 is projected to increase by 10% for people under 25, and by 19% for people 25 and over



Technology in Education

Education 1.0, or simply education as was known in its time, took place in a classroom, imparted by the teacher, from textbooks.

Education 2.0 cautiously adopted computers and then the internet. Technology aided the teacher to teach, and the student to learn.

Today's changing scenario, termed **Education 3.0**, takes place everywhere, in the class and outside. It uses the Internet and Communication Technologies, and is imparted by the teacher, students, and even strangers from half way across the globe.



Growth of Online Education - US



63% of institutions surveyed said that online learning was an essential part of their future strategy

Almost 30% of all enrollments now are in online courses

Nearly three-quarters of institutions report that the economic downturn has increased demand for online courses and programs

Enrollments in online courses increased by 21% between 2009 and 2010, compared with an increase of two% for campus enrollments

More than 5.6 million students were enrolled in at least one online course in fall 2009, an increase of nearly one million students over the previous year

Online enrolments have benefited from the recession in the USA and therefore could act as a stabilizing factor for student enrolment in both for-profit and public universities

Online delivery may exceed US \$69 billion by the year 2015



Forecast for 2014 - US

In 2009, there were a total of 27.04 million students in higher education programs:

4.6% took all of their classes online

39% took some of their classes online

54% took all of their courses in traditional classrooms

In 2014, there will be 27.34 million students in higher education programs in total (an increase of 2% over the five years):

12.8% will take all of their classes online

68% will take some of their classes online

19% will take all of their courses in a physical classroom

More than 80 % of all higher education students will be taking at least some of their courses online by 2014



Textbooks of the Future



South Korea has invested **\$2 billion** to make all textbooks digital by 2015. The total textbook sales industry is **\$7.5 b**, out of which **\$5.5 b** are sales of new textbooks. Digital textbooks are, on average, 53% cheaper than new print books



Features of Digital Textbooks

Note taking: On screen keyboards and stylus allow students to take notes

Writing: Writing using the finger or stylus is possible

Compactness: One (e)book holds all the books, notes and more

Highlighting: Digital books make highlighting text possible

Research: Multiple content sources can be referred to from within the device. Multiple books, notes, websites, journals, videos, audio, images, are accessible in a single device

Quiz: Learning and testing become integrated. Clearing a quiz takes the student to the next level

Animated content: Explanations can be accompanied by animated illustrations and video, instead of static images

Games: Games are integrated with lessons, making learning and testing attractive to students

Interactive timelines: History can be learnt through interactive timelines laced with images, audio, video

Study groups: Study groups can be formed online, from the digital books. Text, audio and video chat can be done from within a page of the textbook



Effectiveness of Online Education



Students in online conditions perform modestly better, on average, than those learning the same material through traditional face-to-face instruction

Instruction combining online and face-to-face elements have a larger advantage relative to purely face-to-face instruction than does purely online instruction

Effect sizes are larger for studies in which the online instruction is collaborative or instructor-directed than in those studies where online learners work independently

The effectiveness of online learning approaches appears quite broad across different content and learner types

U.S. Department of Education. (2010). Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies.

<http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>



Effectiveness of Online Education



E-Learning was found to be 11% more effective than classroom training when it leverages its inherent advantages to offer tutorials, real time communication, and interactive exercises

Results show that e-Learning participants can learn as much as classroom trainees, but in 70% of the classroom study time

An age effect was not found with e-Learning. Older participants learn just as well as younger people

62% of Chief Academic Officers rate the learning outcomes in online education as the same or superior to those in face-to-face classes

The effects of e-Learning on all types of professional and academic training have been dramatic, and all indications point to its influence for years to come

Advancements in the use of technological tools enable learning content to become more dynamic than ever

In 70 % of the cases, students taking courses by distance education outperformed their student counterparts in the traditionally instructed courses. The probability of Distance Education outperforming Face-to-Face increased from 1991–2009 and will continue to increase in strength

Online learners reported deeper approaches to learning than classroom-based learners and experienced better use of higher order thinking skills, integrative thinking, and reflective learning



Global Classroom



Michael J. Sandel, Professor, Harvard University, teaching the course 'Justice' at Sanders Theater, Harvard University



Global Classroom



There are students behind him too. In Sao Paulo, New Delhi, Tokyo and Shanghai. He teaches them through video conferencing



Global Classroom



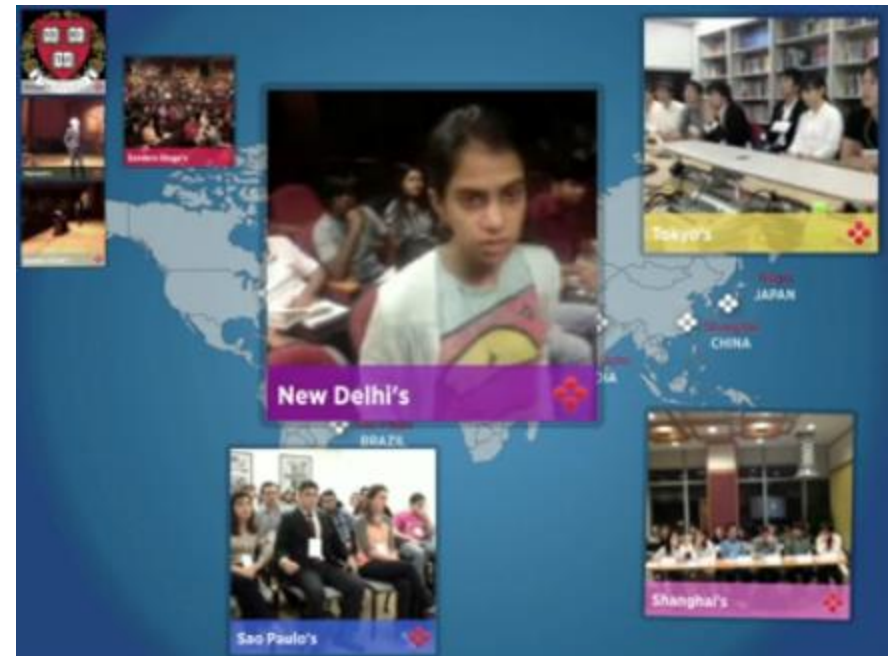
Prof. Sandel has students asking questions, answering them, or holding discussions not only at Harvard...



Global Classroom



...but in South America and Asia as well!





Interactivity

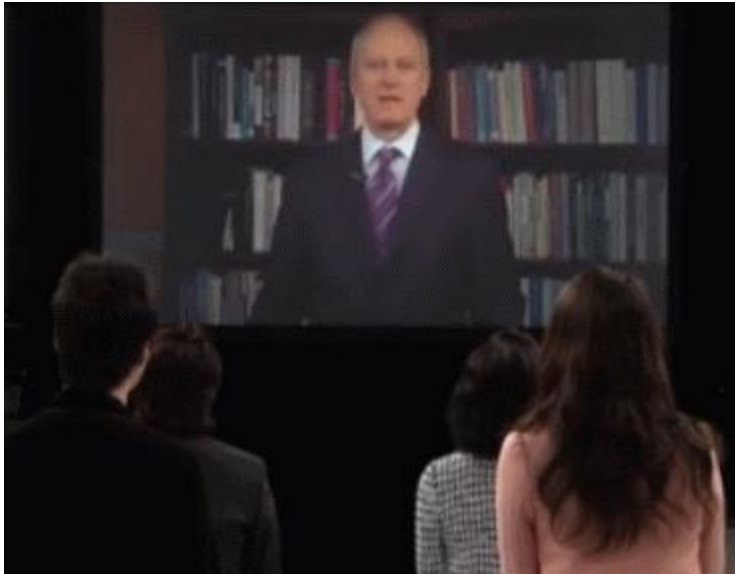


Interactivity and participation can be taken to whole new levels

A class spread over Boston, Tokyo and Shanghai has students discussing nuclear power plants

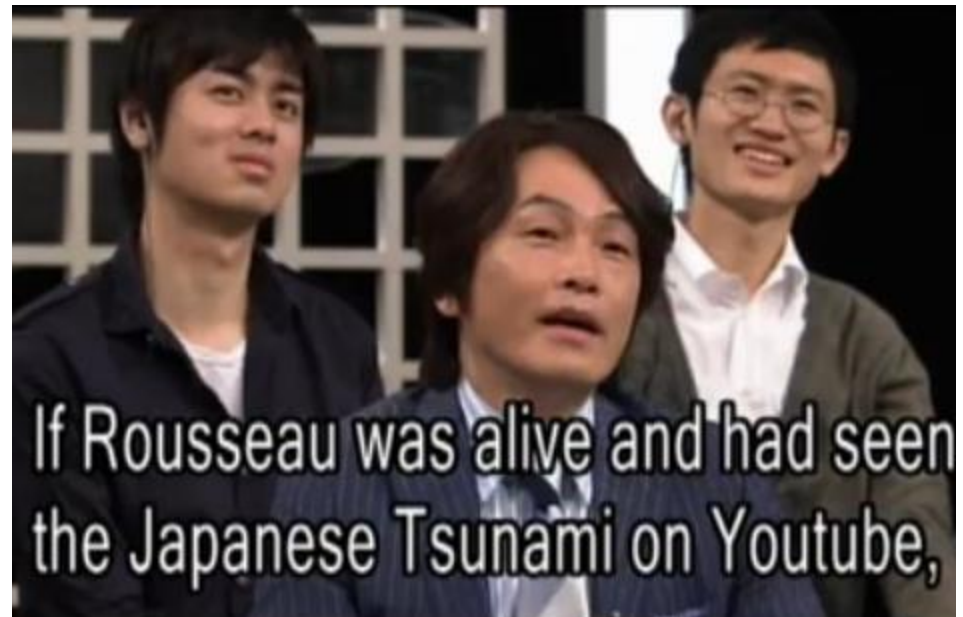


Interactivity



Translation services and subtitles help overcome the language barrier

Here the student quips about Rousseau's views being altered by Youtube





Interactivity



Youngsters separated by distance and language are able to directly talk to each other, and see each others' point of view. This has long term social and political implications apart from being a great educational method



Source

Statistics, images and charts courtesy of :

- <http://www.pewsocialtrends.org>
- <http://www.gse.harvard.edu>
- <http://www.oecd.org>
- <http://www.hcmstrategists.com>
- <http://nces.ed.gov>
- <http://dx.doi.org>
- <https://www.google.co.in>
- <https://www.edx.org>
- <http://online.wsj.com>
- <http://edudemic.com>
- <http://www.educatorstechnology.com>
- <http://www.universityworldnews.com>
- <http://monitor.icef.com>
- <http://databank.worldbank.org>
- <http://www.uis.unesco.org>