



Future Trends in Technology and Education May 2014

*A monthly futures report
for higher education,
compiled by Bryan Alexander.*

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About FTTE – endnotes

Editorial notes: first, I've expanded the first section's title to include the social, political, and economic contexts of education. Those topics have been under that header since the start of FTTE, and I wanted to make the header accurate.

Second, many thanks to everyone who answered my infographic question last month. I'm working on one now, and am still open to suggestions.

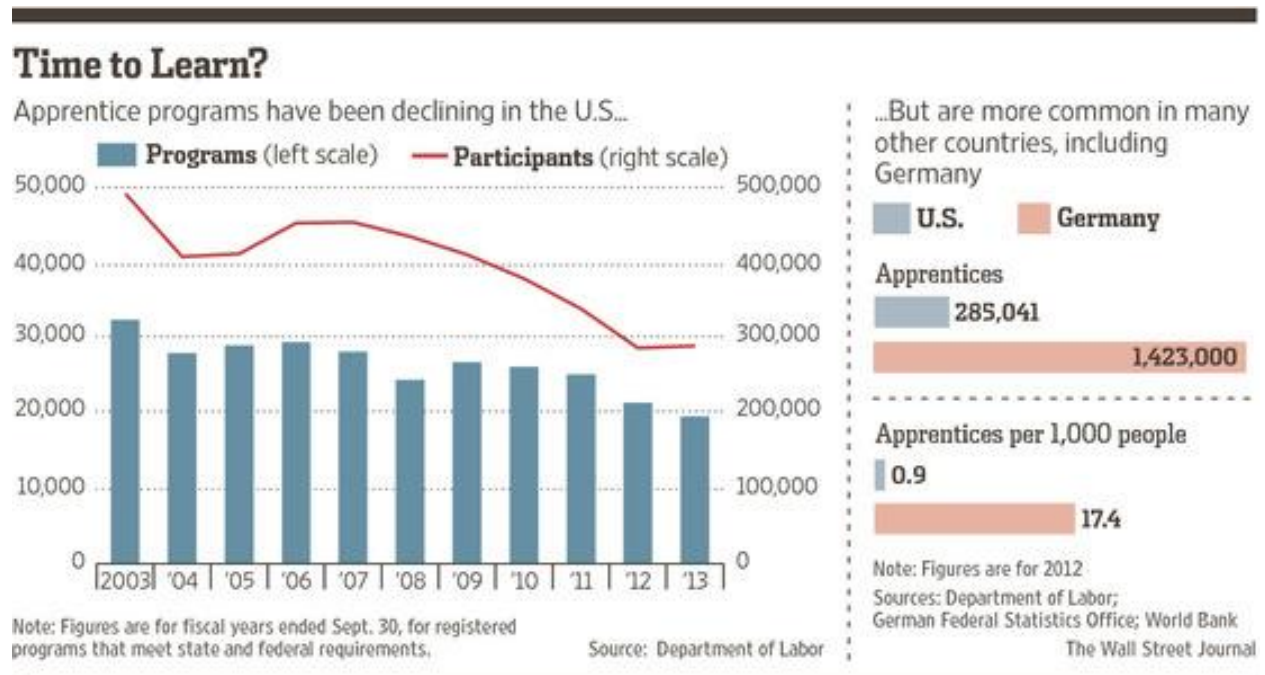
I. Education and contexts

Global economic status. The world economy is improving in recovery from the 2008 financial crisis, according to the IMF. For the United States, "growth is expected to advance at an above-potential rate for the rest of this year."ⁱ

Changes in international education. The number of international students applying to American grad schools increased, with a growing proportion of students coming from India.ⁱⁱ

As American campuses expand abroad, European and Japanese universities have started offering their own, competing programs.ⁱⁱⁱ A Maine university opened a Moroccan campus.^{iv}

Alternative certification. Vice President Biden announced a partnership between businesses and community colleges aimed at winning academic credit for work experience.^v However, the number of apprenticeships offered by American businesses has been declining for some time.

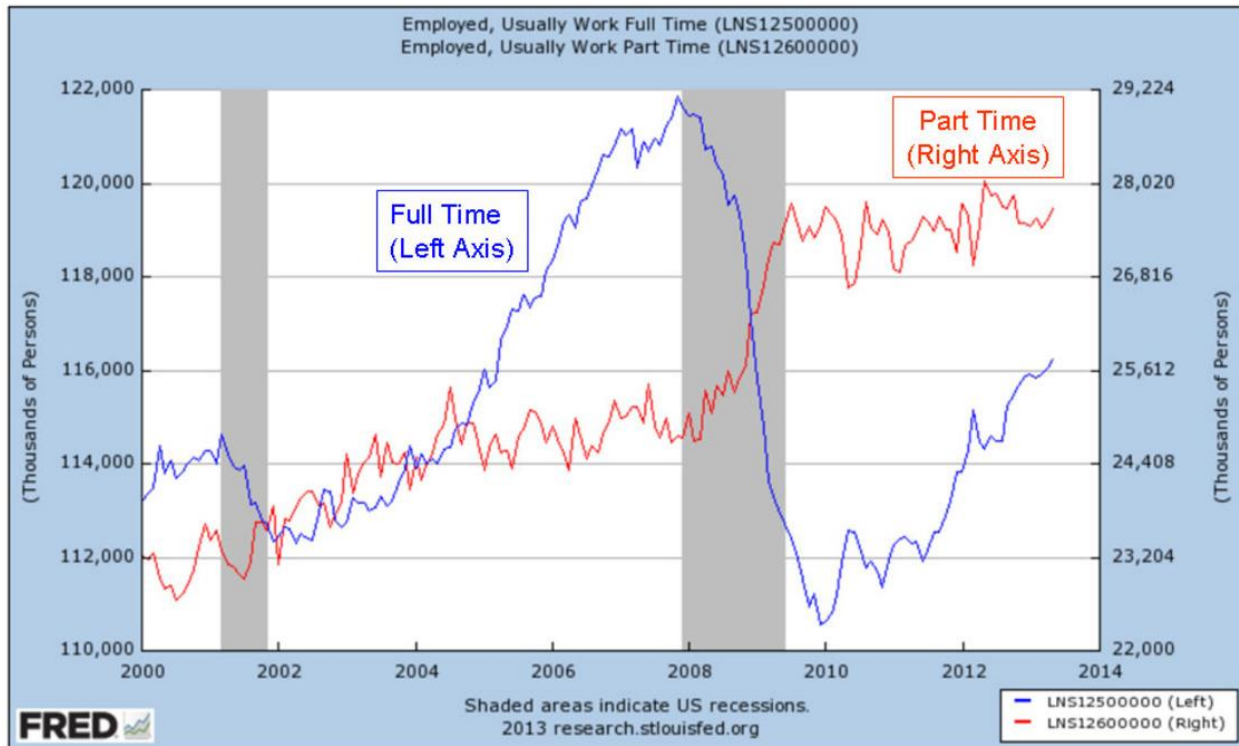


^{vi}

Adjunctification. New data shows that adjuncts teach the majority of community college classes and students. Adjuncts are also more likely to teach remedial classes than their tenure-track colleagues.^{vii}

Part-time instructors at several for-profit English language schools unionized.^{viii}

Academia's growing reliance on part-time work is echoed by trends in the larger workforce, where part-time job growth has outpaced full-time:



[ix](#)

Executive compensation controversy. A group of University of Michigan staff and faculty criticized the institution for overpaying leading administrators.^{[x](#)}

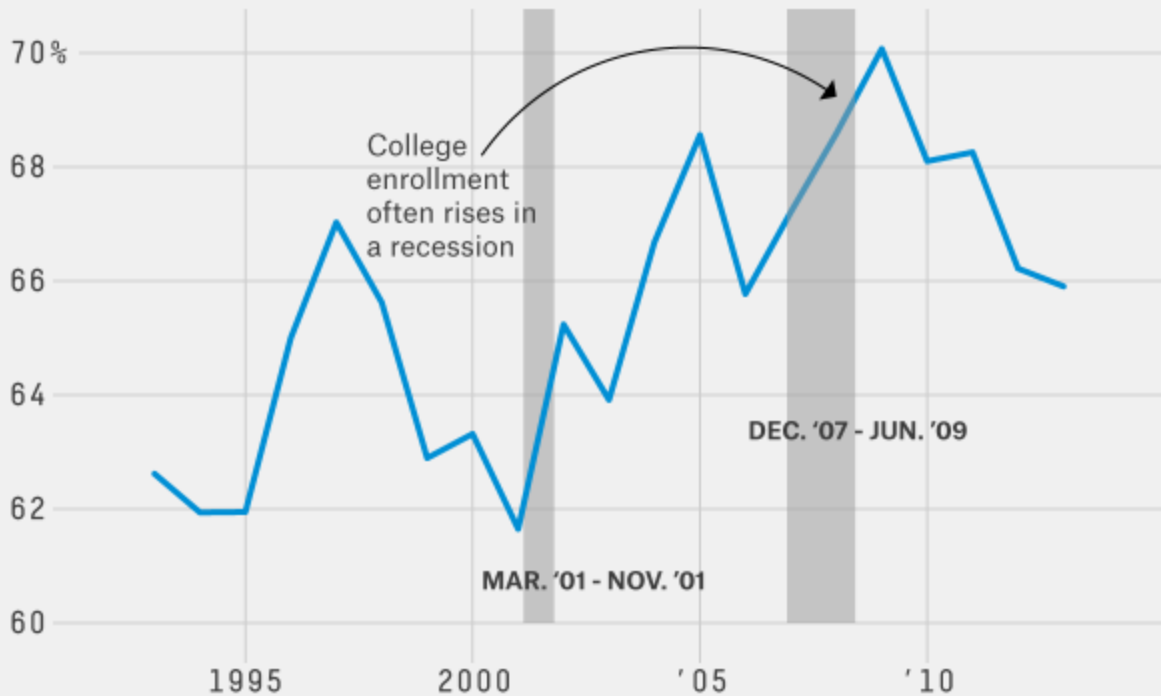
Open education. Two major US funding agencies have started sanctioning scholars who fail to provide open access data for funded publication.^{[xi](#)} A new startup aims to make texts available in open access forms by partnering with libraries and publishers.^{[xii](#)}

Campuses and sexual assault controversy. Twenty-three students sued Columbia University and Barnard College under Title IX, Title II, and the Clery Act for allegedly failing to take adequate measures to protect students against rape, and to punish rapists.^{[xiii](#)}

Enrollment decline continues. The proportion of American high school graduates going on to college dropped: “Just under 66 percent of the class of 2013 was enrolled in college last fall, the lowest share of new graduates since 2006 and the third decline in the past four years...”

High School Graduates Enrolled in College

Share enrolled in the October following graduation



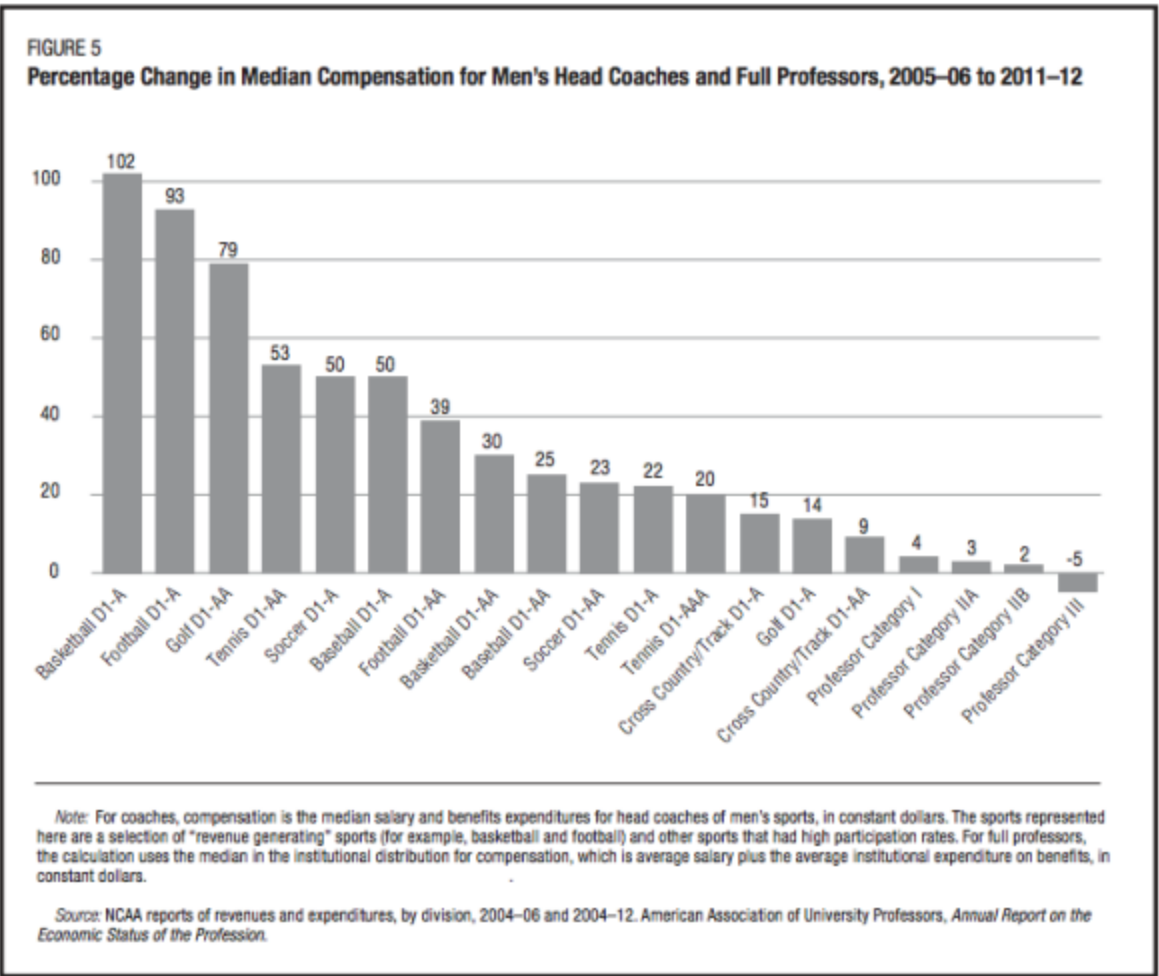
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SOURCE: BUREAU OF LABOR STATISTICS

[xiv](#)

Library changes The total number of working librarians in America declined 9% from 2001 to 2013.^{[xv](#)}

Athletic budgets doing well. Colleges and universities continued to increase spending on student athletics, usually beyond faculty compensation raises, according to the AAUP.^{[xvi](#)}



[xvii](#)

A drop in the number of female coaches raises the possibility of boosting salaries even higher, in order to attract more women for those positions. [xviii](#)

II. Technology

3d printing continues to innovate and grow. One Kickstarter project lets users print goggles to hold cell phones in order to more easily view augmented and virtual reality content. [xix](#)

Device ecosystem keeps growing.

- American iOS device users tend to be wealthier than those using the Android operating system, according to recent data. [xx](#)
- Wearable computing: Google Glass now lets users stream live video content that they capture with the device. [xxi](#) However, many Americans remain skeptical of wearable computing's ability to deliver continuous content to users. [xxii](#) A new product, Ring, which allows users to input data by making finger and hand gestures, is about to ship. [xxiii](#)

- Creative devices keep emerging from the mobile world. Amazon announced a new device, the Dash, a wand which lets users scan and order goods for delivery.^{[xxiv](#)}

Augmented reality's steady march. (See "3d printing" above)

Cloud computing. Google and Amazon engaged in a price war for cloud services, a field which Amazon currently dominates.^{[xxv](#)}

Social media. LinkedIn claimed a milestone of 300 million registered users.^{[xxvi](#)}

Automation's promise. Microsoft announced a digital assistant for its Windows 8.1 platform, along the lines of Apple's Siri.^{[xxvii](#)}

Digital security threats expanding. A massive security bug code-named "Heartbleed" threatened up to one third of the Web.^{[xxviii](#)}

III. Education and Technology

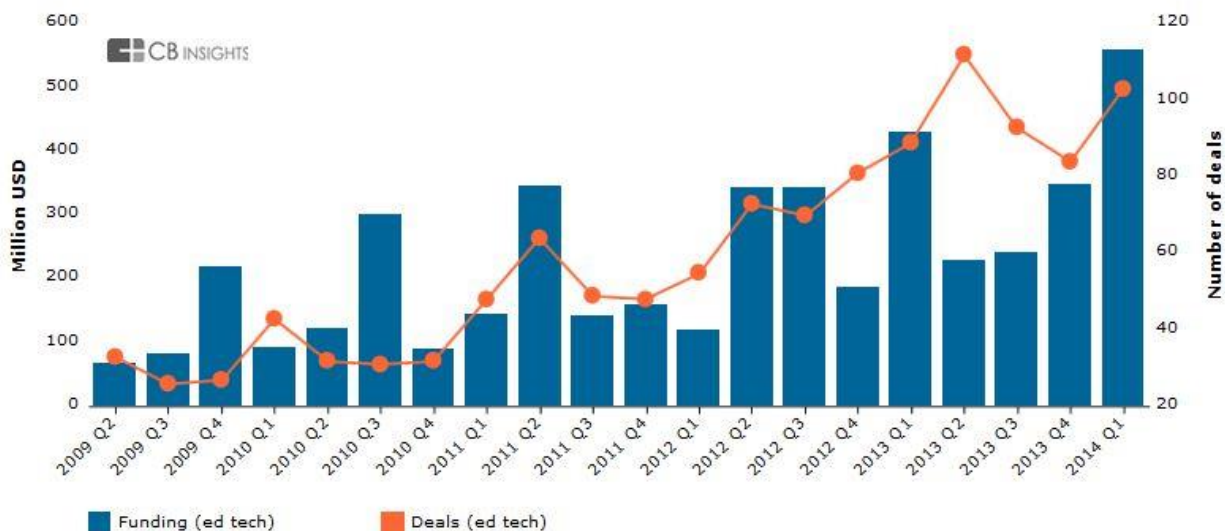
More MOOCs and online learning. A New York Times article suggested that campus faculty have started revising teaching styles in response to online competition.^{[xxix](#)} One of the leading MOOC providers, Udacity, announced it was ending free course completion certificates in favor of paid ones.^{[xxx](#)} This is a significant potential revenue flow for online learning.

The state of Maryland asked many American online education providers to register and pay fees if teaching residents of that state.^{[xxxi](#)}

Rise of the net.generation. Applications such as WhatsApp are appearing which promise relative anonymity to users, and are especially attractive to young people.^{[xxxii](#)} From the other end of the demographic spectrum, an increasing number of seniors now go online, but that population lags the rest in terms of technology adoption.^{[xxxiii](#)}

Ebooks in higher education. Several professors created a Chinese language learning app for the iPad, adding non-textbook features like data collection and finger writing functions.^{[xxxiv](#)}

Educational entrepreneurship. Global investments in educational technology hit an all-time record in 2013, with 2014 on pace to grow even further.^{[xxxv](#)}



The National Institutes of Health launched a program to encourage researchers in creating startups. [xxxvi](#)

Gaming in education. The University of Texas (Austin) launched a one-year postbaccalaureate graduate certificate program led by a famous game developer. [xxxvii](#)

Big data and data analytics develop A major data analytics startup closed after widespread concerns about student privacy. [xxxviii](#)

Social media in education Faculty across Kansas public institutions sent that state’s board of regents a social media policy as a counter to the board’s controversial proposal. [xxxix](#) Another professor got in trouble because of social media activity, this time for an allegedly threatening photograph posted to Google+. [xl](#) Bryant University banned graduating students from taking selfies during ceremonies. [xli](#)

Maker movement. An inter-institutional maker movement collaborative launched. [xlii](#)

IV. The higher education bubble, continued.

This concept, which we began to track in early 2012, continues to build across multiple fronts. It holds that colleges are overpriced, that student demand is questionable, and both could drop together:

- A growing number of states are exploring \$10,000 undergraduate degrees. [xliv](#)
- The number of students enrolled in public higher education declined in 2012 and 2013. [xlv](#)
- A Kentucky liberal arts university laid off its entire staff in preparation for closing. [xlvi](#)
- Grad school crisis: unemployment among recent law school graduates increased from 2012 to 2013. [xlvii](#) Lawyer hiring is in “almost a freeze”. [xlviii](#)

- The limits to research: due to the law school crisis, the amount of legal scholarship may decline.^{xlviii} A group of researchers argued that biomedical research is being constrained by demographic and financial pressures.^{xlix}
- The debt problem: the greatest economic concern of Americans aged 18-49 is paying for college, according to a new Gallup poll.

Top Financial Problems Facing Family, by Age

April 3-6, 2014

	18 to 29 years	30 to 49 years	50 to 64 years	65 and older
1.	College expenses/ loans 21%	College expenses/ loans 14%	Healthcare 15%	Healthcare 15%
2.	Lack of money/low wages 15%	Lack of money/low wages 14%	Bills/Credit cards/Debt 14%	Lack of money/low wages 13%
3.	Housing 14%	Healthcare 13%	Lack of money/low wages 12%	Cost of living/ Inflation 12%
4.	Bills/Credit cards/Debt 10%	Bills/Credit cards/Debt 10%	Cost of living/ Inflation 12%	Bills/Credit cards/Debt 7%
5.	Lack of work or job 8%	Cost of living/ Inflation 10%	Retirement savings 11%	Retirement savings 7%
6.	Gas/Transportation costs 6%	Lack of work or job 8%	Lack of work or job 10%	Housing 6%
7.	Cost of living/ Inflation 5%	Housing 6%	Housing 9%	Lack of work or job 3%
8.	Healthcare 4%	Taxes 5%	College expenses/ loans 7%	Taxes 3%
9.	Retirement savings 2%	Retirement savings 4%	Gas/Transportation costs 3%	College expenses/ loans 1%
10.	Taxes 1%	Gas/Transportation costs 3%	Taxes 2%	Gas/Transportation costs 1%

GALLUP'

¹

- Some universities are starting to respond to food insecurity among students, especially those from low-income families.^{li}
- New cases of aggressive cost-cutting appeared. One private college cut costs by slashing its administrative budget.^{lii} Another announced a strategy of reducing its student body, along with reducing the number of faculty.^{liii} Cooper Union saw a decline in applications, after it decided to charge tuition for the first time.^{liv}
- Politics, bipartisan: the White House announced plans to tie federal aid for teacher training programs to how graduates perform on the job market.^{lv}

Other trends. We have been tracking the following additional trends since early 2012, but found no new developments during this month. Possible explanations: one or more are fading as future trends; some may be building slowly over time; some stories were underreported.

Those trends include:

Education: demographics; possible intergenerational tension; shared academic services; challenges to internships; possible intergenerational tensions.

Technology: internet of things; new forms of creativity; new interfaces; crowdfunding growing; copyright battles continuing; ebooks; the durability of Moore's Law; the limits of the Web; onshoring hardware production; office versus Web office; digital video rising; hopping continues to migrate online.

Education and technology: open education possibilities; mobile devices in education; badges; the LMS world; flipped classroom; shared academics; gaming and education; education and entrepreneurship; mobile devices for teaching; campus digital security threats growing; educational entrepreneurship; video and education; digital humanities develops; faculty criticizing deployment of technology; 3d printing across the curriculum; blended learning; crowdsourcing research.

About Future Trends in Technology and Education

Future Trends in Technology and Education (FTTE) is a monthly report. It surveys recent developments in how education is changing, primarily under the impact of digital technologies. Its purpose is to help educators, policy-makers, and the public think about the future of teaching, learning, research, and institutions.

Every month FTTE aggregates recent developments, checking them against previously-identified trend lines. As certain trends build in support and significance, the report recommends watching them for future impact. FTTE also notes trends which appear to be declining in significance. Every single item is backed up by footnoted research, often accessible through the open Web. Trends are also aired for feedback and development via the author's Twitter (<https://twitter.com/bryanalexander>) and blog (<http://bryanalexander.org/>).

Subscriptions are free, and open to any interested person or institution.

For more information, see <http://bryanalexander.org/future-trends-in-technology-and-education/> or <http://bryanalexanderconsulting.com/ftte-report/>.

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