



# Future Trends in Technology and Education October 2014

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

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Editorial notes: what should FTTE look like in 2015? I'm running a survey, and would love to hear your thoughts. Please take a couple of minutes to share your vision of what FTTE should become: <https://www.surveymonkey.com/s/FTTE2015> . You can also email me directly, as ever, as [bryan.alexander@gmail.com](mailto:bryan.alexander@gmail.com).

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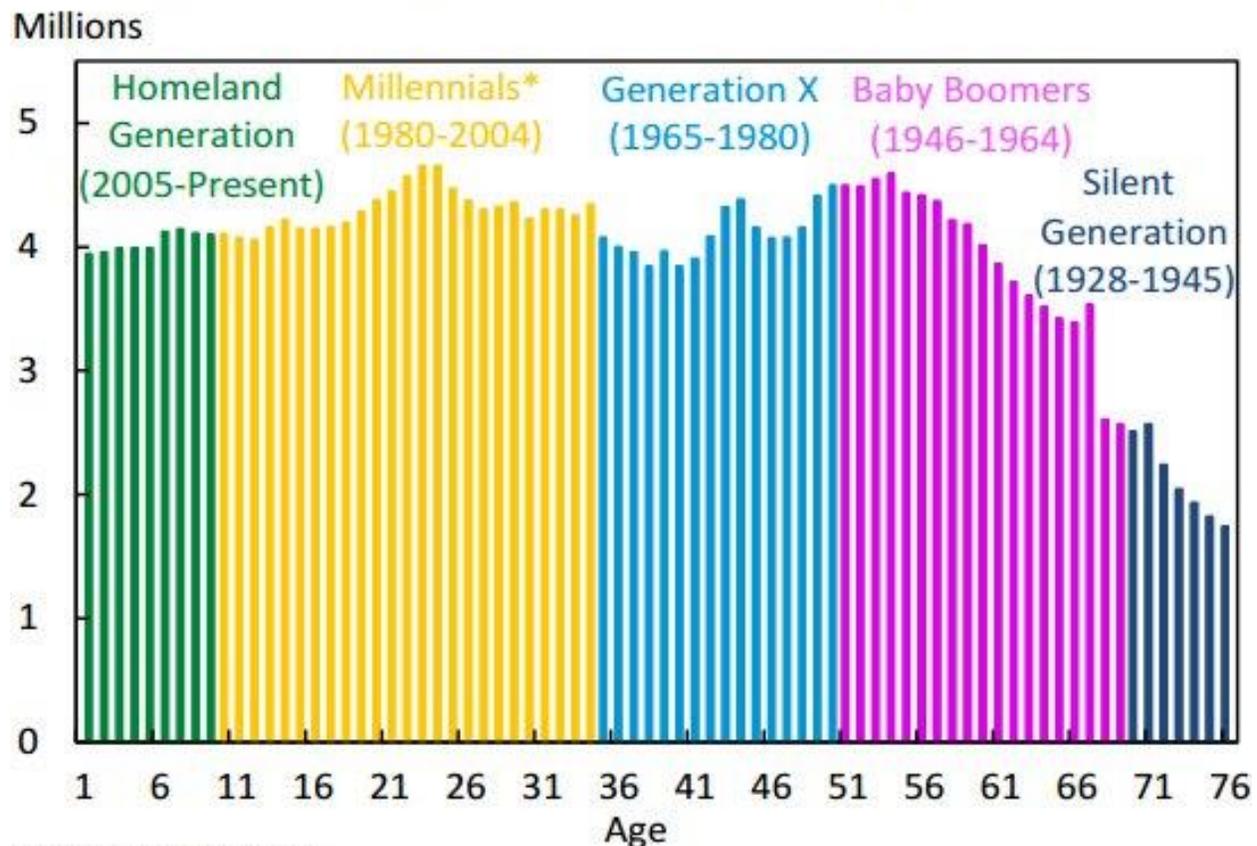
- I. Education and contexts

**Changes in international education.** Germany announced free tuition for all international students.<sup>i</sup>

**Alternative certification.** The University of Michigan received regional accreditor approval to launch a competency-based master's program.<sup>ii</sup> (See also Kaplan note in "More MOOCs and online learning", below)

**Demographics.** The Millennial generation, born 1980-2004, is now the largest and most diverse population in the United States.

**Figure 1: US Population Distribution by Age, 2013**



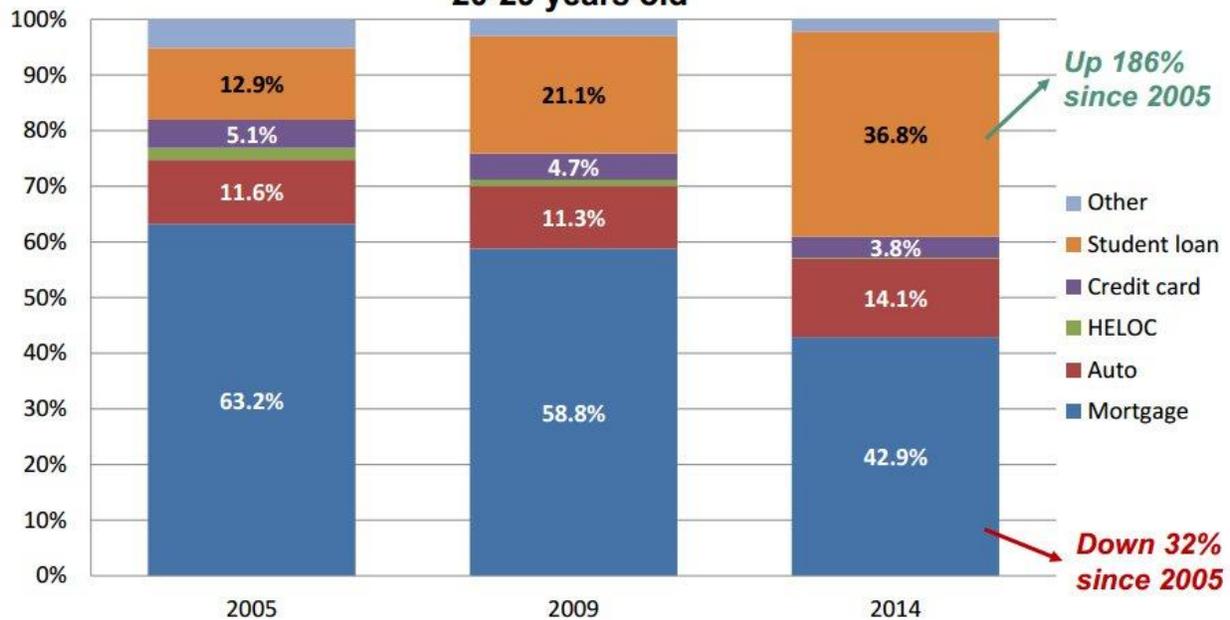
Source: Census Bureau.<sup>iii</sup>

**Adjunctification** Adjuncts at two Vermont colleges launched a unionization drive.<sup>iv</sup> Some adjuncts are organizing a National Adjunct Walkout Day for February 25, 2015, using the social media hashtag #NAWD.<sup>v</sup>

A federal court ruled that the First Amendment protects adjuncts who publicly criticize their working conditions.<sup>vi</sup>

**Macroeconomic indicators** For people in their 20s, student loans have expanded as a portion of their overall debt, while mortgages have shrunk, suggesting this cohort will buy either smaller houses, or start home ownership later in life.

**Total loan balance composition (%) by product type –  
20-29 years old**



Source: TransUnion consumer credit database.



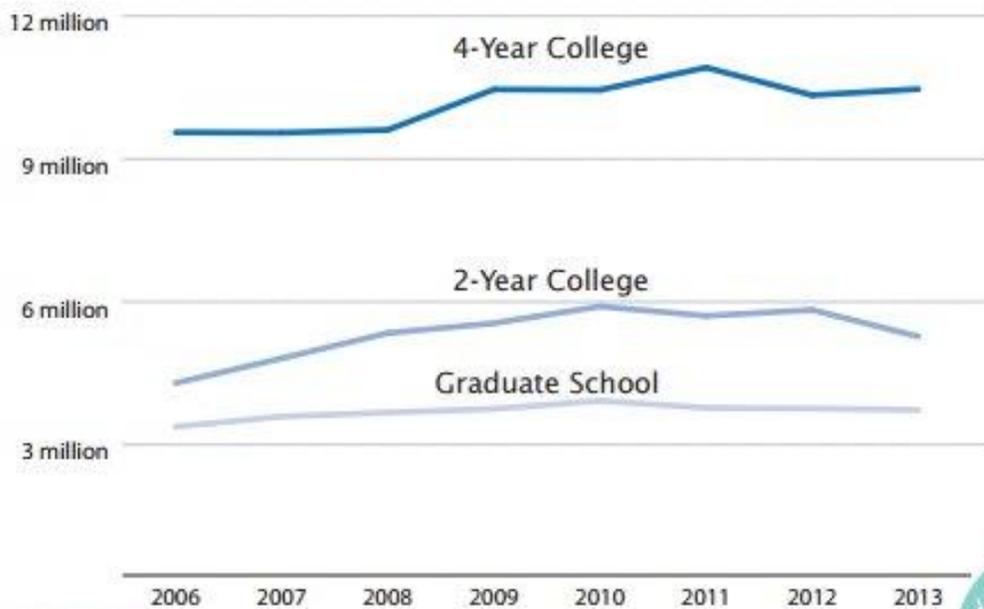
**K-12 and higher education** Davison College won a \$2 million grant to develop online materials for challenging Advanced Placement classes. [viii](#)

**Enrollment decline continues** The total number of people enrolled in American higher education declined from 2012-2013, according to Census Bureau data. Grad schools and especially community colleges took the brunt:



# Higher Education

Number of students enrolled in different levels of college



United States™  
**Census**  
Bureau

U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU  
[census.gov](http://census.gov)

Source: October School Enrollment Supplement to the  
2013 Current Population Survey.

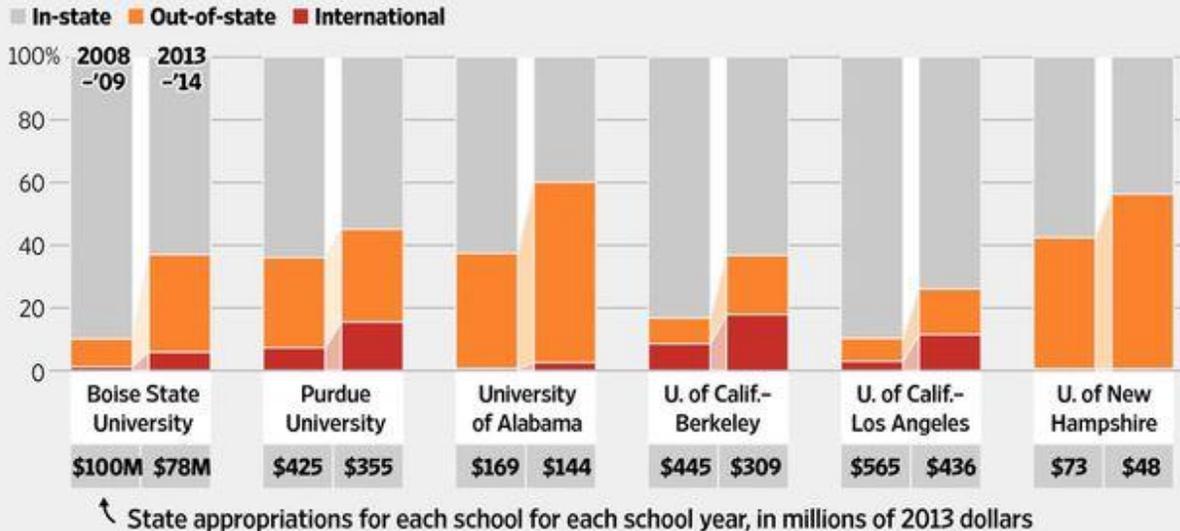
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Some public colleges and universities are increasing their recruitment of out-of-state students, in order to take advantage of higher tuition rates:

## Wider Nets

To make up for funding shortfalls, some public colleges have stepped up their search for out-of-state and international students, who typically pay higher tuition rates.

Estimated composition of the incoming freshman class for select schools



Sources: Common Data Set Initiative; the schools (appropriations); Labor Department (inflation)

The Wall Street Journal

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## II. Technology

**3d printing continues to innovate and grow.** One hundred United States UPS stores will offer 3d printing services.<sup>x</sup>

**Internet of things.** New York City's government removed Bluetooth beacons from phone booths, after the devices pinged passersbys' tablets and phones.<sup>xii</sup>

**Social media.** YouTube is the most popular internet destination for internet tv viewers, ahead of Netflix, Hulu, and Amazon Prime, according to a recent survey.<sup>xiii</sup>

**Augmented reality's steady march** The U.S. military is creating augmented reality battle planning environments.<sup>xiv</sup>

**Cloud computing** Internet2 announced cloud services for academic researchers.<sup>xv</sup>

**Ebooks** Adobe started collecting data on how readers use ebooks, raising privacy concerns.<sup>xvi</sup>

**Copyright battles continue** A court ruled in favor of textbook publishers and against Georgia State University in an ongoing e-reserves case.<sup>xvii</sup>

**Digitization shifts from physical media to streaming** Two major television businesses, CBS and HBO, announced streaming-only services.<sup>xviii</sup>

**Digital video rising** (See “Social media” above)

### III. Education and Technology

**More MOOCs and online learning.** MOOC provider edX entered the professional training world, following Udacity.<sup>xix</sup> Kaplan announced a new online university.<sup>xx</sup>

Coursera expanded its for-pay certification program.<sup>xxi</sup>

**Open education possibilities.** The White House announced new initiatives to support and expand open education, conducted by offices including the State Department, Department of Education, the Office of Science and Technology and the Department of Labor.<sup>xxii</sup>

Several academic institutions and publishers have launched open content efforts in response to the Ebola crisis.<sup>xxiii</sup>

**The LMS world.** Blackboard remains the leading course management system in the United States and in the world, although competitors (namely Moodle and Canvas) have eaten into its market share. Smaller institutions are more likely to use Moodle.<sup>xxiv</sup> Canvas launched a learning objects repository, working with the Unizin group.<sup>xxv</sup>

**Educational entrepreneurship.** Investors gave educational technology efforts \$108.2 million in September.<sup>xxvi</sup>

**Social media in education** (see “Adjunctification” above)

**Copyright battles continue** A court overturned an earlier ruling against a group of academic publishers and for George State University in a protracted lawsuit over e-reserves.<sup>xxvii</sup>

**Mobile devices in education** A new app, PhotoMath, attempts to solve math problems on paper through a phone camera and software.<sup>xxviii</sup>

**Big data and data analytics develop** The National Institutes for Health awarded more than \$31 million in grants to support universities developing big data initiatives, including centers of excellence, a data consortium, training, and MOOCs.<sup>xxix</sup> Another group of universities won \$5 million from the National Science Foundation to collect and analyze data generated by students using a variety of digital learning tools.<sup>xxx</sup>

A group of companies signed a pledge to not violate student data and privacy.<sup>xxxi</sup>

**Automation in education.** Turnitin purchased a company which makes essay-assessment software.<sup>xxxii</sup>

#### IV. The higher education bubble, continued.

*Higher education has been and remains a potent source of economic opportunity in America, but I fear the large and growing burden of paying for it may make it harder for many young people to take advantage of the opportunity higher education offers.*

- Janet L. Yellen, Chair of the Board of Governors of the Federal Reserve System<sup>xxxiii</sup>

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:

- Grad school crisis: one law school offered 30% of its faculty voluntary early retirement packages.<sup>xxxiv</sup>
- One recently-established Illinois undergraduate program will close.<sup>xxxv</sup>
- Several women's colleges, facing low enrollment, have started admitting men.<sup>xxxvi</sup>

Countervailing trends:

- A growing proportion of wealthier students and/or graduates heading into the most remunerative fields now hold student debt, according to a recent study. “[T]hose owing super-sized student loans tend to be higher paid.”<sup>xxxvii</sup>

**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: campuses and sexual assault controversy; open education; possible intergenerational tension; executive compensation controversy; library changes; athletic budgets doing well; shared academic services; challenges to internships.

Technology: device ecosystem keeps growing; digitization; automation's promise; new forms of creativity; a fragmented internet? digital security threats expanding; a shift in Moore's Law? open source; new interfaces; crowdfunding growing; the limits of the Web; onshoring hardware production; Office versus Web office; shopping continues to migrate online.

Education and technology: Flipped classroom/blended learning; Crowdsourcing in academia; rise of the net.generation; ebooks in higher education; badges; gaming in education; maker movement; shared academics; campus digital security threats growing;

video and education; digital humanities develops; faculty criticizing deployment of technology; 3d printing across the curriculum.

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### 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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### Endnotes

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