



# Future Trends in Technology and Education January 2014

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

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*Editorial note: welcome to the first 2014 issue of FTTE! I hope this trend analysis helps you think and plan for the year ahead.*

*I’ve been presenting on this report to academic and other audiences of late; their feedback has been very useful.*

*Soon I’ll share a short survey requesting your thoughts about future forms of FTTE. If you have any recommendations or ideas, please fire away: [bryan.alexander@gmail.com](mailto:bryan.alexander@gmail.com).*

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## I. Education

**Demographics.** American birthrates continued to decline, suggesting a still smaller child and teen population over the next two decades.<sup>i</sup>

**Changes in international education.** The number of Indians willing to study abroad may have reached a plateau.<sup>ii</sup>

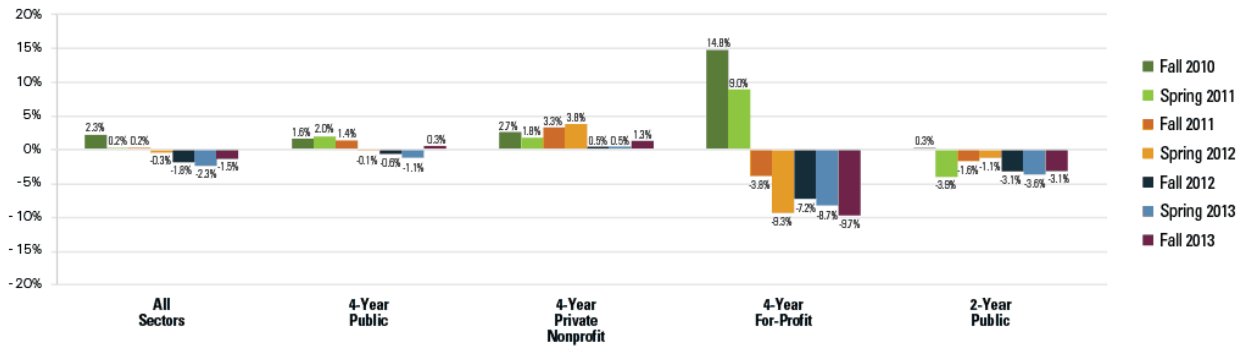
**Alternative certification.** A multi-campus competency-based learning association began.<sup>iii</sup> A University of California Davis program launched a badging program:

*There are seven core competencies... Employers contributed to the identification of those competencies, which include systems thinking, experimentation and inquiry, understanding values, interpersonal communications, strategic management, civic engagement and personal development.<sup>iv</sup>*

**Adjunctification.** A California community college fired a popular adjunct professor in mid-term, eliciting attention to non-tenured faculty’s working conditions.<sup>v</sup> The number of tenure-track history jobs fell dramatically, leading that field’s leading conference to urge candidates to explore government work.<sup>vi</sup>

**Executive compensation controversy.** Senior Rutgers staff sued that institution for age discrimination.<sup>vii</sup> Brandeis faculty and staff criticized recent payments to its recent president and associated administrative staff.

**Enrollment decline continues.** “In fall 2013, overall postsecondary enrollments decreased 1.5% from the previous fall.”



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**Athletic budgets doing well.** Temple University cut seven varsity programs, citing financial pressures. Football, however, remained.<sup>ix</sup>

## II. Technology

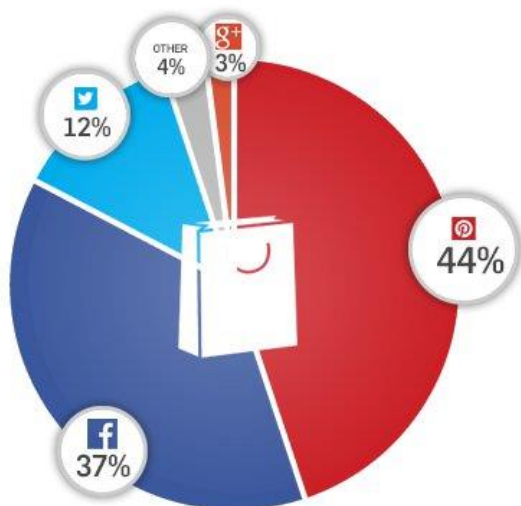
**Shopping continues to migrate online.** While end of year holiday shopping didn't grow overall, online purchases expanded very strongly.<sup>x</sup> Trends to watch: stresses on bricks and mortar stores; increased proportion of human activity occurring online.

**3d printing continues to innovate and grow.** Two Cornell scientists printed a functioning audio speaker.<sup>xi</sup> A medical team announced plans to trial a printed human liver later in 2014.<sup>xii</sup>

**Social media.** Major platforms seem to be settling into established and different functions, as Pinterest users lead the social media world in shared shopping, followed closely by Facebookers, while Twitter and Facebook users lead in information sharing.

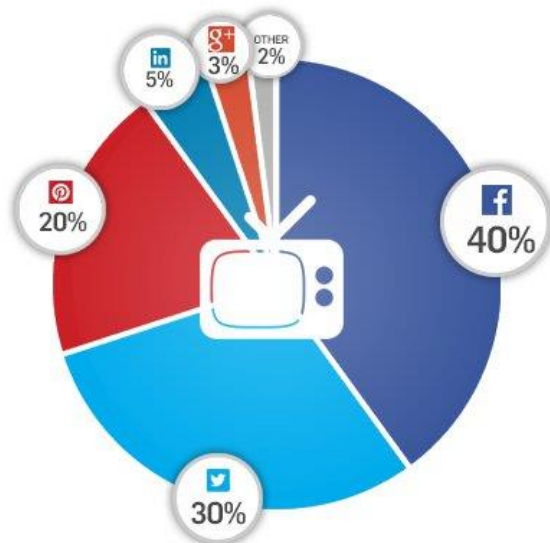
### ECOMMERCE

Pinterest's popularity as a sharing destination was most evident on eCommerce sites and apps, where it continued to lead all social networks in shares. Pinterest recently released APIs that will allow businesses to showcase their most popular pins on their own websites and mobile apps, a new development that could help Pinterest increase its lead in ecommerce sharing in particular.



### MEDIA/PUBLISHING

While Facebook maintained its lead as the top social network for sharing on Media and Publishing web properties, its lead shrank considerably in Q3, while Twitter and Pinterest continued making significant strides.



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**Automation's promise.** Google purchases Massive Dynamics, an attention-getting robotics company.<sup>xiv</sup>

**Device ecosystem keeps growing.**

- The total amount of tablets, laptops, and desktops sold in the United States during 2013 grew by one quarter as compared with 2012.<sup>xv</sup>

- The shift from PCs to mobile devices continues, as tablet ownership and sales grow. Apple's iPad continues to occupy the leading position in this space, with just over one half of the market share.<sup>xvi</sup>
- Chromebook sales grew over 2013, although data is contested.<sup>xvii</sup>
- The app economy continued to grow, as Apple announced \$10 billion in sales through their app store in 2013.<sup>xviii</sup>
- Wearable computing: Google Glass competitor Vuzix aims at the industrial market.<sup>xix</sup>
- The total amount of computing device sales may decline slightly in 2014, as vendors shift prices down to win global, emerging markets.<sup>xx</sup>
- Creative devices keep emerging, like the new Polaroid camera which includes a printer along with social media integration.<sup>xxi</sup>
- Televisions may have reached a plateau for innovation, at least in terms of devices consumers actually buy and watch.<sup>xxii</sup>

**Open source software keeps growing.** The number of open source projects has been increasing, and enterprise reasons for adopting them seem to be maturing.<sup>xxiii</sup>

### III. Education and Technology

**More MOOCs and online learning.** Davidson College is about to roll out four MOOCs via the edX platform.<sup>xxiv</sup> The President's Council of Advisors on Science and Technology issued a call for accrediting agencies and higher education in general to be more supportive of MOOCs, especially in the sciences.<sup>xxv</sup>

Demographics are available for the first class in George Tech's MOOC-based master's degree in computer science, and they reveal a population that's older, more male, whiter, and more likely to be American citizens than Tech's normal face-to-face population.<sup>xxvi</sup>

**Social media in education.** The AAUP issued a draft report calling for the extension of academic freedom into social media.<sup>xxvii</sup> In the opposite direction the state of Kansas Board of Regents issued new social media policies:

*The chief executive officer of a state university has the authority to suspend, dismiss or terminate from employment any faculty or staff member who makes improper use of social media.*<sup>xxviii</sup>

Under criticism, the Board is reviewing that policy.<sup>xxix</sup>

Social media expressions apparently played a key role in one university's decision to not change athletics conferences.<sup>xxx</sup>

The Council for Independent Colleges (CIC) has launched a Twitter account to argue for the benefits of liberal education.<sup>xxxi</sup>

**Maker movement.** Davidson College announced an on-campus makerspace.<sup>xxxii</sup>

**Digital humanities develops.** Digital humanities methods are expanding from graduate schools to undergraduate classrooms, according to a Chronicle of Higher Education series of articles.<sup>xxxiii</sup>

**Faculty criticizing deployment of technology.** Rutgers faculty voted to block any campus engagement with Pearson's online learning business.<sup>xxxiv</sup>

**3d printing across the curriculum.** A British team developed a method for using 3d printing to help students visualize abstract scientific concepts.<sup>xxxv</sup>

**Blended learning.** An American law school received approval to launch a part-online, part-face-to-face juris doctor degree program.<sup>xxxvi</sup>

#### **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:*

- Student debt continues to rise, with one recent report finding that “Seven in 10 college seniors who graduated in 2012 had student loan debt, with an average of \$29,400 for those with loans”.<sup>xxxvii</sup> The British government considered offering a debt-free degree pilot, involving business support.<sup>xxxviii</sup>
- Graduate school problems: the total number of enrolled law students dropped once more.<sup>xxxix</sup> More law schools suffered credit ratings downgrades.<sup>xl</sup> George Mason's law school announced a four-year tuition freeze.<sup>xli</sup> One professor finds that “the large majority of law schools — I estimate between 80% and 85% — are incurring significant operating deficits in the present fiscal year.”<sup>xlii</sup> MBA programs may suffer from downward pressure on recent graduates' salaries.<sup>xliii</sup>
- Purdue University and the Gallup polling organization have partnered to produce a new ratings scheme for higher education, the Gallup-Purdue Index.<sup>xliv</sup>
- Politics, bipartisan: the very Democratic state legislature of Maryland implemented a major college completion strategy, involving public institutions and the K-12 system.<sup>xlv</sup> (See also “More MOOCs and online learning”, above)

**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: shared academic services; challenges to internships; badges progressing; possible intergenerational tensions; library budgets.*

*Technology: new interfaces; crowdfunding growing; copyright battles continuing; cloud computing; ebooks; the durability of Moore's Law; the limits of the Web; onshoring hardware production; augmented reality's steady march; office versus Web office; digital video rising.*

*Education and technology: Open access possibilities; flipped classroom; shared academics; gaming and education; education and entrepreneurship; mobile devices for teaching; rise of the net.generation; gaming in education; campus digital security threats growing; educational entrepreneurship; video and education; big data and data analytics develop; LMSes.*

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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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