Future Trends in Technology and Education March 2014

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

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Editorial note: I'd like to share two new FTTE features starting with this issue.

First, I'm expanding endnote credits given to helpful sources. This is intended as an expression of gratitude to the many readers and collaborators who help grow these reports. Check the endnote pages for names.

Second, and speaking of endnotes, you may notice that endnote superscripts are now active hyperlinks. This means you can click on the raised number and be taken directly to Web content, if appropriate. Let me know what you think. Many thanks to Rebecca Davis, Mike Roy, and Scott Robison for helping me with this new feature.

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I. Education

Demographics.   Declining teen populations in the American Midwest and northeast have started shaping applicant pools and first-year classes.[i] One sign of this comes from Harvard, which saw more than 5% fewer students apply from those regions.[ii]

Traditional-age undergraduates (in their early/mid-20s) are delaying first-time home purchases long enough to impact the economy, according to some analysts.[iii]

Changes in international education. American institutions continue to develop branch campuses abroad.[iv]

Alternative certification. Pearson threw its weight behind the badges movement, launching a supporting service called Acclaim.[v]

Possible intergenerational tension. Americans are more comfortable with the social and economic status of seniors than are most other nations.[vi]

Adjunctification. Two unions are now seeking to organize Philadelphia adjuncts.[vii]

Executive compensation controversy. St. Mary's College (Maryland) considered a proposal to "limit the president's salary to no more than 10 times the salary of the lowest-paid full-time staffer."[viii]

Enrollment decline continues. Applications to Harvard's first-year class declined by 2.1%.[ix]

Open education. A major anthropology journal moved to open access.[x]

II. Technology

3d printing continues to innovate and grow. A new project prints metal pieces "in thin air", without a containment chamber.[xi]
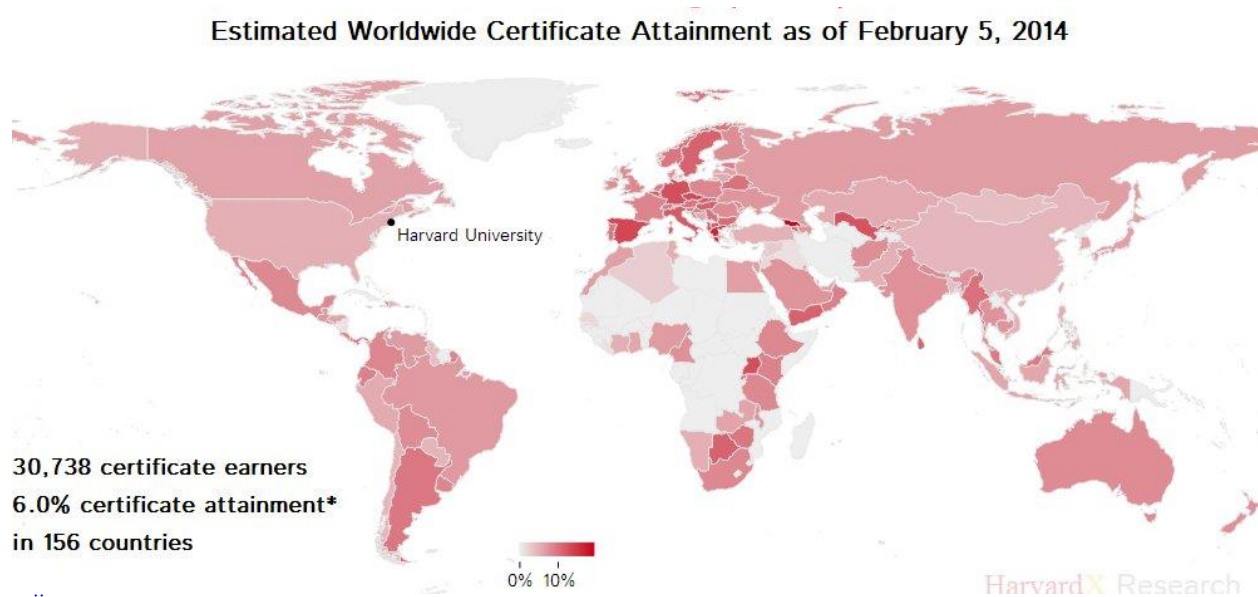
Device ecosystem keeps growing.

- The Android operating system runs on just more than one half of smartphones, followed by iOS.[xii] Android also won a majority of tablets, according to new data.[xiii]
- The Barnes and Noble Nook's decline hit another milestone with the layoff of its hardware development staff.[xiv]
- Wearable computing: New York city police are testing Google Glass.[xv] A new glasses-based augmented reality product appeared from atheer labs.[xvi]
- Creative devices keep emerging. Google announced a new smartphone ecosystem, Project Tango, designed to map human spaces in three dimensions.[xvii]

New forms of creativity. The New York Times continues to develop data-based storytelling projects.[xviii]

III. Education and Technology

More MOOCs and online learning. The total number of American students taking online classes is somewhere between 5 and 7 million, according to two recent studies.[xix]

Several climate change MOOCs appeared.[xx] Harvard will offer MOOCs for its alumni.[xxi] edX released data for classes offered by Harvard and MIT, like the following example:

Estimated Worldwide Certificate Attainment as of February 5, 2014

30,738 certificate earners
6.0% certificate attainment*
in 156 countries

[xxii]

An Arabic-language MOOC commenced.[xxiii]

The University of the People, a free, entirely online enterprise, received accreditation from a leading distance learning organization.[xxiv]

Open education possibilities. Leading open-access journal PLoS (Public Library of Science) announced a policy requiring authors to share all of their research data, eliciting both support and criticism from scholars.[xxv]
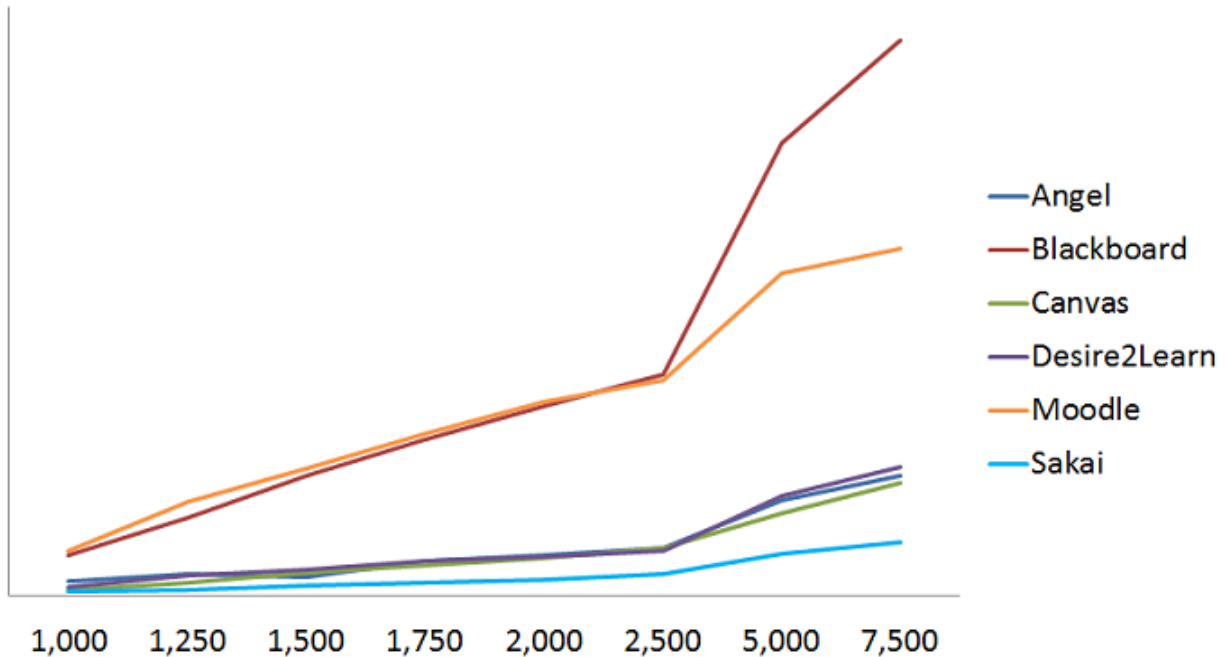
Rise of the net.generation. 2/3rds of children aged 2-13 read electronic texts, according to a new survey.[xxvi] (See also "Demographics", above)

Ebooks in higher education. A consortium of academic libraries formed to support ebook inter-library loan (ILL).[xxvii]

Mobile devices in education. Yale libraries made Google Glass available for students and faculty to borrow.[xxviii] More examples of using Glass to aid in teaching surgery, forensics, and emergency services have appeared.[xxix] [xxx] [xxxi]

Badges. (see "Alternative certification", above)

The LMS world. Moodle is now the most popular learning management system for small institutions, while Blackboard dominates large ones, according to new data:

[xxxii]

Educational entrepreneurship. 2U announced a forthcoming public stock offering.[xxxiii]

IV. The higher education bubble, continued.

> *In an effort to plan for their newborn daughter's future, local parents Jonathan and Kate Bradbury have shrewdly begun investing in a college fund that will pay for an estimated 12 weeks of their child's education…*

> -The Onion[xxxiv]

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:

- New York State private colleges and universities are facing declining revenues.[xxxv]

- Three state governments proposed making community college tuition free for all state residents, citing concerns about access and student debt.[xxxvi]
- Harvard saw a decline in undergraduate applications.[xxxvii] Dartmouth College saw applications decline by 14%. [xxxviii]
- Student debt continued to rise, reaching $1.08 trillion with 11.8% delinquent.[xxxix]
- Politics, bipartisan: president Obama singled out art history as an inappropriate college major for job prospects, recalling Republican statements, and triggering criticism.
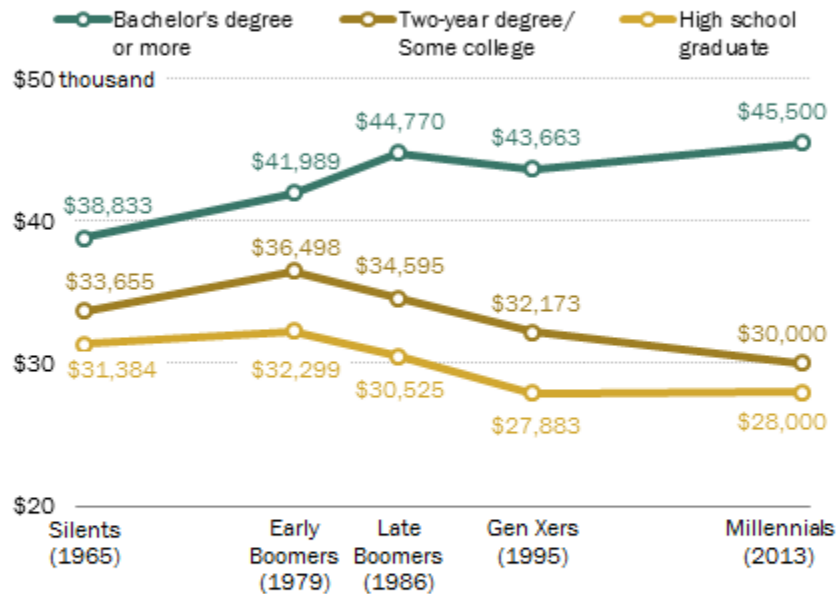
  > *I promise you, folks can make a lot more, potentially, with skilled manufacturing or the trades than they might with an art history degree. Now, nothing wrong with an art history degree -- I love art history. (Laughter.) So I don't want to get a bunch of emails from everybody. (Laughter.) I'm just saying you can make a really good living and have a great career without getting a four-year college education as long as you get the skills and the training that you need.(Applause.)* [xl]

Countervailing trends:

- Campus donations increased powerfully over the past year:
  Donors gave about $34 billion to North American colleges in 2013…That's more than $3 billion more than the year before, and the most ever raised in a single year -- topping the $31.6 billion from pre-recession 2008, not adjusted for inflation…[xli]
- A larger number of states than last year increased funding to public institutions.[xlii]
- The college premium continues to hold, according to recent analysis:

Rising Earnings Disparity Between Young Adults with And Without a College Degree

Median annual earnings among full-time workers ages 25 to 32, in 2012 dollars

Legend: Bachelor's degree or more | Two-year degree/ Some college | High school graduate

$50 thousand

Bachelor's degree or more:
- Silents (1965): $38,833
- Early Boomers (1979): $41,989
- Late Boomers (1986): $44,770
- Gen Xers (1995): $43,663
- Millennials (2013): $45,500

Two-year degree/Some college:
- Silents (1965): $33,655
- Early Boomers (1979): $36,498
- Late Boomers (1986): $34,595
- Gen Xers (1995): $32,173
- Millennials (2013): $30,000

High school graduate:
- Silents (1965): $31,384
- Early Boomers (1979): $32,299
- Late Boomers (1986): $30,525
- Gen Xers (1995): $27,883
- Millennials (2013): $28,000

$40

$30

$20

X-axis: Silents (1965) | Early Boomers (1979) | Late Boomers (1986) | Gen Xers (1995) | Millennials (2013)

Notes: Median annual earnings are based on earnings and work status during the calendar year prior to interview and limited to 25- to 32-year-olds who worked full time during the previous calendar year and reported positive earnings. "Full time" refers to those who usually worked at least 35 hours a week last year.

Source: Pew Research Center tabulations of the 2013, 1995, 1986, 1979 and 1965 March Current Population Survey (CPS) Integrated Public Use Micro Samples

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[xliii]

- One multi-campus merger deal fell through, apparently in the face of "opposition by… alumni, students and faculty."[xliv]

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; possible intergenerational tensions; library budgets; athletic budgets doing well.

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; hopping continues to migrate online; social media; automation's promise; open source software keeps growing.

Education and technology: 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; social media in education; maker movement; digital humanities develops; faculty criticizing deployment of technology; 3d printing across the curriculum; blended learning; crowdsourcing research; open education.

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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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