Future Trends in Technology and Education
April 2020
COVID-19 edition

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

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   About FTTE – endnotes

This FTTE report is generously sponsored by TurnItIn, NYSERNet, our subscribers, and supporters on Patreon.
This is a special COVID-19 edition of the FTTE report, focused on the pandemic’s impact on the future of education.

It’s published openly as a community service during this extraordinary crisis. Please share it as you like. I hope it’s useful. We can continue producing these open, special editions as long as they serve the general community.

If FTTE is useful to you and others, please consider supporting it with a subscription. Head to http://ftte.us for options.

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Editorial notes: I started last month’s FTTE report by drawing attention to the emerging coronavirus pandemic. The report shared about ten stories where COVID-19 was starting to have an impact. I pointed to some resourced I’d helped create or aggregate, and also mentioned an upcoming California trip, and invited readers to meet up.

Such a change in one month.

Now a good number of campuses worldwide, and nearly all of American higher ed, have suspended face-to-face instruction and migrated online. This is part of a transnational effort to slow the viral spread through social distancing and lockdowns. Societies have been thrust into crisis mode and national economies have collapsed. Geopolitical tensions have risen.

This FTTE report is, unsurprisingly, very concerned with the pandemic. I’m actually publishing a free version with just COVID-19 content.

I’m also holding a series of live video conference events on how the coronavirus is impacting higher education, both with the Future Trends Forum and with the Chronicle of Higher Education. I invite readers to join those sessions.

In the meantime, I’d like to express my thanks to Gwynneth Alexander, Todd Bryant, Jason Green, Phil Katz, Steven Kaye, Bill Meador, Tammy Snyder, and Camille Vincent for sharing stories for this month’s report. I acknowledge each contributor in endnotes, but wanted to make sure they were thanked more visibly.

Speaking of gratitude, I appreciate everyone who supports this work on Patreon, and invite you all to contribute what you can at https://www.patreon.com/bryanalexander. As an independent futurist, I can’t do the work without your help.
Please spread the word of FTTE. The number of subscriptions continues to rise.

In conclusion, thank you all for your feedback and recommendations. As ever, contact me with more thoughts at bryan.alexander@gmail.com.
I. Education and contexts

**Changes in international education.** Britain is considering controlling how its universities compete for enrollment, in order to protect universities that lose numbers.
International study may suffer a serious hit from the coronavirus pandemic. Many international exams have been canceled. The United States Centers for Disease Control (CDC) urged campuses to “consider postponing or canceling upcoming student foreign exchange programs” and to “consider asking students participating in study abroad programs to return to the United States.” The Council on International Educational Exchange laid off most of its staff.

Federal officials charged a University of Tennessee professor with taking federal funding while not revealing his connections to the Chinese government.

**Campuses and sexual assault controversy.** The coronavirus pandemic has prompted some campuses to consider delaying Title IX proceedings, due to perceived challenges in taking testimony and holding hearings over live video.

**Athletic budgets doing well.**
Countervailing trend: NCAA payments to Division-I universities were massively cut, due to games canceled by the coronavirus pandemic.

**Macroeconomic indicators.** After COVID-19 became a global threat, the global economy sunk. Recession threatened nearly all of the G20. Supply chains have been disrupted and gross domestic product thrown into negative territory, according to the latest estimates. American unemployment surged, with roughly 10 million claims in late March:

![Seasonally Adjusted Initial Claims](image)

Low-wage jobs are especially vulnerable to layoffs now:
**Campuses and sustainability.** New York University prepared for the possibility that their residence halls could be repurposed as coronavirus treatment areas. The University of Washington is rolling out COVID-19 testing.

**Enrollment changes.** Southern New Hampshire University launched a free online course teaching students how to operate drive-through coronavirus testing centers. The University of California system authorized its members to relax admissions requirements for SAT exams and letter grades, due to the pandemic.

**Alternative certification.** Some campuses are considering alternative grades for classes under pandemic, including pass/fail and an A/A- pairing.

**II. Technology**

**3d printing continues to innovate and grow.** An Italian hospital printed replacement valves for badly need intensive care unit machinery. Another European project also 3d printed ventilator valves. A major Boston hospital asked the community to supply replacement medical parts, including via 3d printing.

(See also “Copyright battles continue” below)
**Digital security threats expanding.** The rapid expansion of digital service and device use may increase their security risks.23

**Device ecosystem keeps growing.**
- Mobile computing sales may be hit by COVID-19.24

**Social media.** Microsoft announced a doubling in usage of their Teams enterprise social service, driven by increased remote work during the pandemic.25 Twitter announced it would moderate “misleading information around COVID-19... manually.”26 That service deleted a tweet from Rudi Giuliani that apparently contained coronavirus misinformation.27 Some medical professionals use social media to develop their pandemic knowledge.28

**Open source.** Mozilla launched a fund to support open source work addressing the pandemic.29

**Data and analytics.** The coronavirus pandemic provoked calls for greater surveillance.30

**Digital video rising.** Internet traffic rose by some metrics, driven in part by increase use of video and videoconferencing.

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31 Google made premium features of its Hangout video service free for a limited time, to help people afflicted by the coronavirus.32

Countervailing trend: videoconferencing technology Zoom is vulnerable to abuse, has problems with privacy claims, and may have security holes.33 34

**Shopping continues to migrate online.** Amazon announced it would place a higher priority on shipping certain goods during the COVID-19 crisis, including “household staples, medical
supplies, and other high demand products. Publisher O’Reilly closed down its face-to-face event business because of the pandemic and focused entirely on digital and print publication. Cambridge University Press suspended print journal publications, due to pandemic pressure on their supply chain.

**Copyright battles continue.** A group 3d printing valve replacements for a ventilator were legally threatened by the machine’s maker, allegedly.

**Automation’s promise.** Narrative Science used AI to produce several articles on the COVID-19 pandemic.

### III. Education and Technology

**More MOOCs and online learning.** In a few weeks colleges and universities in area afflicted by COVID-19 suspended in-person classes and shifted operations online.

The World Health Organization’s director claimed that more than 300,000 people had taken a WHO online class about COVID-19. WHO also launched an online course to help train border staff in detecting people with the coronavirus. Coursera opened its catalog to nations suffering from the pandemic. Yale opened one of its classes to the world.

(see also “Enrollment changes” above)

**Social media in education.** Students used Google Docs and other tools to coordinate mutual aid in sharing resources.

**Gaming in education.** The Fold-It biological science game launched coronavirus games to crowdsource thoughts on generating a vaccine for that disease. A Japanese elementary school’s students created online graduation ceremony for themselves, also in Minecraft.

**Automation in education.** Six universities partnered with Microsoft and an AI firm to research AI, with a focus on fighting the coronavirus.

**Open education possibilities.** Various publishers released some of their content in open form as a response to the coronavirus crisis, including McGraw-Hill and Cengage. Duke University Press opened up a selected group of publications as a “pandemic syllabus.” The Allen AI Institute opened up tens of thousands of scholarly documents to aid in the global fight against COVID-19. The Internet Archive expanded user check-out access for eBooks in their collection.

**Video and education.** Many campuses rapidly expanded their use of videoconferencing to continue instruction during the coronavirus pandemic.

Countervailing trends: the United States FBI warned educators and the population in general about abuse of Zoom. See also “Campuses and sexual assault controversy” above.
Virtual reality in education. Purdue University offered community members the option of a VR graduation.\textsuperscript{55}

3d printing across the curriculum. Some faculty, staff, and students 3d print materials to help address the COVID-19 crisis.\textsuperscript{56}

Maker movement. A Rice University team built a breathing assistance tool for under $300.\textsuperscript{57} A University of Vermont group build an alternative ventilator.\textsuperscript{58}

Crowdsourcing in academia. Italian scientists stuck at home launched a national effort to measure light pollution.\textsuperscript{59}

IV. The higher education bubble, continued.

[I]magine a future academy after a major pandemic has struck the world, perhaps along the lines of the early twentieth century’s Great Influenza. To envision the institution under such pressure, we would have to think through multiple disciplines and domains. We would have to consider, first, how such a thing would occur. This could involve delving into the history of disease, a look into graph theory for models of contagion, and a reflection on contemporary public health. We would then apply that learning to colleges and universities, a process that can ramify extensively depending on our awareness of the sector. Would distance learning grow rapidly as people fear face-to-face learning because of perceived contagion risk?

\textit{--Academia Next (2020), page 23.}\textsuperscript{60}

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:

- COVID-19’s impact: a petition asked University of California San Diego to reduce student fees, as instruction had moved online.\textsuperscript{61} The American Council on Education urged Congress to provide nearly $60 billion plus loans to support students and institutions as they cope with rapid transitions, extra work, and cash flow issues.\textsuperscript{62} San Francisco Art Institute announced it would close, MacMurray College declared it would close, Central Washington University declared financial exigency, Notre Dame de Namur University announced it would stop admitting new students, each decision motivated in part by the pandemic.\textsuperscript{63} Moody’s downgraded its higher education outlook to negative as a result of the virus.\textsuperscript{64}
- College and university endowments took a massive hit with the late March economic catastrophe.\textsuperscript{65}
- Some campuses considered or announced cuts as a result of COVID-19 pressures on top of long-running problems. The University of Arkansas-Little Rock stated plans to
consolidate academic units and reduce staff.\textsuperscript{66} Temple University’s leadership called for a 5% budget cut across the board.\textsuperscript{67}

- Grad school woes: large minorities of admitted MBA students wanted refunds and considered not attending if their program started fall term online.\textsuperscript{68}

Countervailing trends:
- The federal Coronavirus Aid, Relief, and Economic Security Act (CARES) act contained $15 billion to assist public colleges and universities.\textsuperscript{69}
- Ohio University suspended massive cuts and layoffs due to COVID-19.\textsuperscript{70}

V. 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 and contexts: K-12 and higher education; library changes; alternative degrees; shared academic services; remedial classes; challenges to internships; demographics; executive compensation controversy; possible intergenerational tension; academic responses to the Trump administration.

Technology: eBooks; digitization shifts from physical media to streaming; the limits of the Web; cloud computing; a shift in Moore’s Law? Crowdfunding growing; onshoring hardware production; Office versus Web office; new interfaces; fragmented internet; internet of things; new forms of creativity; blockchain; quantum computing.

Education and technology: the LMS world; mobile devices in education; rise of the net generation; big data and data analytics; badges; flipped classroom/blended learning; campus digital security threats growing; crowdfunding in academia; eBooks in higher education; shared academics; digital humanities develops; faculty criticizing deployment of technology; blockchain in 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 available to individuals for $5 US per month or for $60 per year. Institutional subscriptions are available for $600/year. Individuals may also support us on Patreon for $10/month, https://www.patreon.com/bryanalexander.

For more information, see http://ftte.us.

Endnotes


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