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

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

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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.
Editorial notes: in my May editorial note I wrote “COVID-19 continues to attack higher education and reshape its next stage. Many of these following trends will show the pandemic’s influence.” Now it’s June and not only is COVID-19 still hammering academia, but police
atrocities against black people and protestors have caused nationwide political unrest. The impact of both of these developments is visible in the report that follows.

Overall, the pressures on higher education that FTTE has chronicled for years have escalated in 2020, as have the stresses on the societies within which colleges and universities are embedded.

A virtual note: over the years I’ve mentioned upcoming travel, so that FTTE readers could meet up with me. COVID-19 means I’m still not traveling, but I can share some live video events I’m presenting or participating in this month:

- June 10 – a DT&L Talk about *Academia Next* and COVID-10, for the University of Wisconsin-Madison. 2:30 pm EDT.¹
- June 21-25 – the 6th International Conference of the Immersive Learning Research Network (iLRN 2020).²
- June 25 – Tech and Trek conference at Hiram College. 10 am EDT.³

In the meantime, I’d like to express my thanks to Randy Bass, Todd Bryant, Bernard Bull, Steven Kaye, Stephen Landry, Phil Long, Robert McGuire, Mark Rush, Shel Sax, and Peter Shea 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](https://www.patreon.com/bryanalexander). As an independent futurist, I can’t do the work without your help.

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¹ [https://dtlconference.wisc.edu/dtl-talks/](https://dtlconference.wisc.edu/dtl-talks/).
² [https://immersivelrn.org/ilrn2020/](https://immersivelrn.org/ilrn2020/).
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.
Future Trends in Technology and Education

THE HIGHER EDUCATION CRISIS

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EDUCATION AND CONTEXTS

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Video and education
Virtual reality in education

Automation’s promise
Blockchain
Digital security threats
Crowdfunding
E-books
Device ecosystem
Social media
3D printing
Digital video
Virtual reality

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I. Education and contexts

Changes in international education. The Canadian government relaxed rules limiting how many hours international students could work, which should increase their participation in
pandemic-related fields, notably health care.¹ A group of Australian universities struck a deal with a large union to forestall layoffs from the pandemic; staff compensation cuts are involved.² 75% of Australian senior administrators are taking pay cuts as pandemic-driven enrollment drops hit that nation’s universities.³

American academia may suffer serious financial losses as the pandemic shuts down so much international study, according to a new report:

U.S. higher education overall has potentially lost nearly $1 billion due to shortened or canceled study abroad programs and spent approximately $638 million in financial support for international students, scholars, faculty, and staff who remained on campus when courses moved online. Responses further estimate that U.S. higher education will lose at least $3 billion due to anticipated international student enrollment declines for fall 2020.⁴

The Chinese government investigated or jailed several academic critics of its pandemic policies.⁵

(See also “More MOOCs and online learning” below)

**Racial inequality in/and education.** Two universities cut ties to local police in the wake of the George Floyd killing, while populations at others clamored for similar moves.⁶ Native American students may shift attendance to tribal institutions.⁷ During nationwide protests following the death of an unarmed black man in Minneapolis, six Atlanta police officers faced criminal charges for arresting, mistreating, and tasering two college students.⁸

**Athletic budgets doing well.**
Countervailing trends: some campuses cut some fall sports for pandemic reasons, including Brown and Appalachian State Universities.⁹ ¹⁰

(See also “Social media in education” below)

**Macroeconomic indicators.** Pandemic-driven unemployment soared through May, with one government agency giving a rate above 14%, while most estimates of total American unemployed settle around 40-41 million people.¹¹ Gross domestic product decreased 5% in 2020’s first quarter, according to revised federal data.¹² GDP in the second quarter may fall as far as 52.8%, according to one regional Federal Reserve bank:
Library changes. Several library organizations partnered to create a COVID-19 information distribution project, REALM. Academic libraries made the pandemic switch to remote, online service swiftly and effectively, according to a new study.

Enrollment changes. Total enrollment in American higher education declined once more in spring 2020 – before the COVID-19 pandemic hit, continuing a multi-year downward trend:
Some community colleges anticipate rising enrollment this fall, as people seek to upskill during the pandemic and recession.\(^\text{17}\)

**Alternative certification.** The University of California system will phase out the SAT and ACT over the next five years, replacing them with new, locally designed exams.\(^\text{18}\)

### II. Technology

**Digital security threats expanding.** Ransomware attacks have risen dramatically since the global pandemic began, according to one source.\(^\text{19}\)

**Device ecosystem keeps growing.**
- A video clip recorded by mobile device inspired late May anti-racism protests and unrests.\(^\text{20}\)

**Open source.** A Finnish research team is developing an open source COVID-19 vaccine.\(^\text{21}\)

**Data and analytics.** Some cities and companies plan for coronavirus response by using “digital twins,” large data models representing urban areas.\(^\text{22}\)

**Digital video rising.** A majority of Americans, especially those currently employed, are using videoconference tools, according to a new poll.\(^\text{23}\)
Automation’s promise. The MSN network replaced some human news editors with software.\textsuperscript{24} A group of science publishers formed a group to combat AI-faked digital imagery.\textsuperscript{25}

III. Education and Technology

More MOOCs and online learning. Johns Hopkins University launched a MOOC teaching contact tracing skills.\textsuperscript{26} The World Health Organization (WHO) announced three more COVID-19-related MOOCs.\textsuperscript{27}

Cambridge University declared all lectures will be online until 2021.\textsuperscript{28} The California State University system announced fall classes will be “primarily being delivered virtually.”\textsuperscript{29} Many community colleges have stated their intention to offer most classes online in fall 2020.\textsuperscript{30} Simmons University announced its fall semester would be online, supported by the OPM 2U.\textsuperscript{31} Several universities announced online fall terms – after an in-person term, which will end by the Thanksgiving holiday.\textsuperscript{32}

Meanwhile, a majority of campus IT leaders surveyed by EDUCAUSE described planning on some kind of multimodal fall computing environment:

Champlain College announced it would host a virtual gap year program.\textsuperscript{34}
Countervailing trends: more campuses announced plans to return to in-person education this fall, including Northeastern University, Hampshire College, Notre Dame University, the University of California San Diego, the University of Texas Austin, and the SUNY system.35 36 37

Social media in education. Oprah Winfrey gave a virtual commencement address hosted by Facebook.38 Social media played a role in the NCAA’s decision to allow student-athletes some forms of compensation.39

Gaming in education. The University of Oklahoma will host an e-sports in education virtual conference.40 A grad student shared his use of game authoring engine Twine to create concept maps as study aids.41

Rise of the net.generation. A majority of college students surveyed in a recent poll expressed support for the First Amendment; at the same time, similar majorities favored protected spaces on campuses as well as administrative controls on racial insults.42

Automation in education. An Allegheny College professor used an underwater robot to conduct water quality testing.43 More campuses are using Duolingo’s adaptive learning English language test.44

Open education possibilities. The proportion of scholarly articles published through various forms of open access increased incrementally last year, according to one analysis.

Blockchain in education. A group including Central New Mexico Community College, IBM, IQ4, the National Student Clearinghouse, the United States Department of Commerce's American Workforce Policy Advisory Board, and Western Governors University launched a pilot for a blockchain-backed interoperable learner record (ILR).46
IV. The higher education bubble, continued.

*If you'd planned on going away for college, getting dropped off at campus in the fall — that's no longer a given.*

—former president Obama, virtual high school commencement address

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:

- Institutional discount rates rose through 2019, continuing a trend, according to a new NACUBO report:

  **FIGURE 1: AVERAGE INSTITUTIONAL TUITION DISCOUNT RATE, BY STUDENT CATEGORY**

  ![Graph showing average institutional tuition discount rate by student category](image)

  *Source: NACUBO Tuition Discounting Study, 2010 to 2019; data are as of the fall of each academic year. |
  *Note: Preliminary estimates.*

- A growing number of institutions, especially ones in the northeast and Midwest, are considering mergers. Boston College will merge with Pine Manor College. Connecticut community colleges designated new leadership in a structure inclined towards merging that system.

- Nearly twice as many campuses are accepting first-year student applications after May 1st as did last year. FAFSA renewal rates dropped in comparison to 2019.

- Some faculty have been laid off in response to the pandemic. Western Michigan University laid off 240 staff. The University of Wisconsin system’s leader called for member campuses to plan on cuts to programs, staff, and faculty. Smith College announced impending cuts to address a significant budget shortfall. Kent State University called for a 20% budget cut, which “will require layoffs and job abolishments...
Kutztown University started a process for laying off faculty. Northwestern University furloughed staff, suspended retirement contributions, and openly considered increasing its endowment draw. Penn State announced furloughs and additional cuts. Kean State University announced it would cut four programs and their faculty members. Overall academic employment dropped more steeply than at any time since 1990, according to a Chronicle of Higher Education account:

**Employment Plummet**

Each year’s February-to-March change in the number of workers employed by colleges.

- Closures: a Wisconsin college announced plans to shut down due to enrollment declines worsened by the pandemic.
- Students: a student filed a class action lawsuit against Northeastern University for charging in-person tuition for online education. 31% of currently enrolled students said they would prefer online learning to in-person, given the choice in a recent poll. One third of high school students would skip college if they had to attend online, according to another poll. The number of students returning FAFSA forms is down from last year’s number at this time.
- Student loan debt: president Trump blocked a Congressional measure that would have relieved some student debt burdens.
A group of state governors called for students to be wary of low quality for-profit institutions.\textsuperscript{69}

While state higher education funding has recovered somewhat from the 2008 financial crash, a new report found that

[n]ationally, education appropriations remained 8.7 percent below pre-recession levels in 2008, and states have only recovered about two-thirds (63.5 percent) of the total decline seen during the Great Recession...\textsuperscript{70}

Politics, partisan: members of the United States Senate Committee on Health, Education, Labor, and Pensions split along party lines, with its leading Republican stating he would support immunizing colleges and universities from COVID-19-related lawsuits, while the ranking Democrat opposed such protection.\textsuperscript{71}

Countervailing trends:

- Federal funding greatly helped Colorado universities recover from massive state cuts.\textsuperscript{72}
- Arizona State University saw record summer enrollments this year.\textsuperscript{73}

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; alternative degrees; shared academic services; remedial classes; challenges to internships; adjunctification; campuses and sustainability; executive compensation controversy; possible intergenerational tension; academic responses to the Trump administration; campuses and sexual assault controversy; demographics.

Technology: 3d printing continues to innovate and grow; eBooks; digitization shifts from physical media to streaming; augmented reality’s steady march; the limits of the Web; cloud computing; a shift in Moore’s Law? Crowdfunding growing; onshoring hardware production; Office versus Web office; shopping continues to migrate online; copyright battles continue; new interfaces; fragmented internet; internet of things; new forms of creativity; blockchain; quantum computing; social media.

Education and technology: The LMS world; mobile devices in education; big data and data analytics; badges; flipped classroom/blended learning; campus digital security threats growing; video and education; crowdfunding in academia; virtual reality in education; shared academics; 3d printing across the curriculum; crowdsourcing in academia; faculty criticizing deployment of technology; Maker movement; educational entrepreneurship; eBooks in higher education; digital humanities develops.
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


7 Steven Blackburn, “How could COVID-19 affect Native American student enrollment in higher ed?” University Business, May 22, 2020, accessed June 3, 2020,


https://openwho.org/courses.


Lilah Burke, “Fall to Be Online After Thanksgiving at Several Institutions,” Inside Higher Ed, May 19, 2020, accessed June 4, 2020, https://www.insidehighered.com/quicktakes/2020/05/19/fall-be-online-after-thanksgiving-several-institutions.


Northwestern University furloughs staff, cuts executive pay and taps endowment as it eyes ‘significant shortfall’ due to coronavirus pandemic, thanks to Peter Shea for identifying this one.

Penn State cuts budgets, announces furloughs amid financial losses caused by COVID-19, thanks to Robert McGuire for sharing this.


Kutztown University Makes First Move to Lay Off Faculty, accessed June 5, 2020.


Kutztown University Makes First Move to Lay Off Faculty, accessed May 10, 2020.


Northwestern University furloughs staff, cuts executive pay and taps endowment as it eyes ‘significant shortfall’ due to coronavirus pandemic, thanks to Peter Shea for identifying this one.

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“Live Updates.”


