



# **Future Trends in Technology and Education**

## **May 2020 COVID-19 edition**

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

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About FTTE – endnotes

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://fite.us> for options.

[Future Trends Forum, 2020 May COVID-19 edition](#) by [Bryan](#)

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This FTTE report is generously sponsored by TurnItIn, NYSERNet, our subscribers, and supporters on Patreon.



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Editorial notes: greetings from pandemic lockdown for the second or third month. Before I write anything more let me say I hope you are all safe and sound during this extraordinary time.

COVID-19 continues to attack higher education and reshape its next stage. Many of these following trends will show the pandemic's influence.

An additional note: Johns Hopkins University Press generously granted a contract for my next book. *Universities on Fire* will explore the impact of climate change on the next two generations of higher education. I will continue blogging about the topic as the book progresses.

\*

In the meantime, I'd like to express my thanks to Anel P. Albertao, Michael Berman, Todd Bryant Thomas Burkdall, Elena Clark, Terri Dautcher, John Ittelson, Steven Kaye, Ruben Puentedura, Shel Sax, and Dahn Shaulis 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.



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\* For more information, see <https://bryanalexander.org/writing-2/my-new-book-project-begins-universities-on-fire/>.

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](mailto:bryan.alexander@gmail.com).

## Future Trends in Technology and Education

THE HIGHER EDUCATION CRISIS		
Student debt Campus mergers and closures Graduate school shrinkage Partisan and bipartisan political pressure		
EDUCATION AND CONTEXTS	EDUCATION AND TECHNOLOGY	TECHNOLOGY
International education Racial inequality Sexual assault Athletics K-12 and higher education Macroeconomic indicators Library changes Alternative degrees Shared academic services Remedial classes Challenges to internships Adjunctification Green sustainability Demographics Executive compensation Enrollment changes Alternative certification Inter-generational tension Responses to Trump	The LMS world More MOOCs and online learning Gaming in education Badges Flipped classroom/blended learning Educational entrepreneurship Open education possibilities Crowdsourcing in academia Digital humanities develops Faculty criticizing deployment of technology Big data and data analytics Maker movement Shared academics Rise of the net generation	Internet of Things New forms of creativity Digitization The limits of the web Cloud computing Moore's Law Open source Office vs. web office Shopping online Copyright battles New interfaces Fragmented internet Onshoring hardware
	Automation in education Blockchain in education Campus digital threats Crowdfunding in academia E-books in higher education Mobile devices in education Social media in education 3D printing in curricula 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.** German academics are divided on how to schedule university work over summer, based on different expectations of how faculty and students respond to COVID-19.<sup>1</sup> The German government solicited a paper on the pandemic, authored largely by humanists.<sup>2</sup> British universities are preparing to lose up to 80% of international students, while a University and College Union report estimated a £2.5 billion financial hit next year “in tuition fees alone, along with the loss of 30,000 university jobs.”<sup>3 4</sup> Australian universities face budgetary stresses as foreign students avoid enrolling.<sup>5</sup> Kenyan universities struggle with revenue cuts while shifting instruction online.<sup>6</sup> COVID-19 forces some African universities to suspend education entirely, as they lacked sufficient infrastructure.<sup>7</sup>

President Trump’s decision to suspend all immigration into the United States could further depress international interest in American higher education.<sup>8</sup> The United States Department of Education announced an investigation into the University of Texas-Austin for potential ties with China’s Wuhan Institute of Virology.<sup>9</sup>

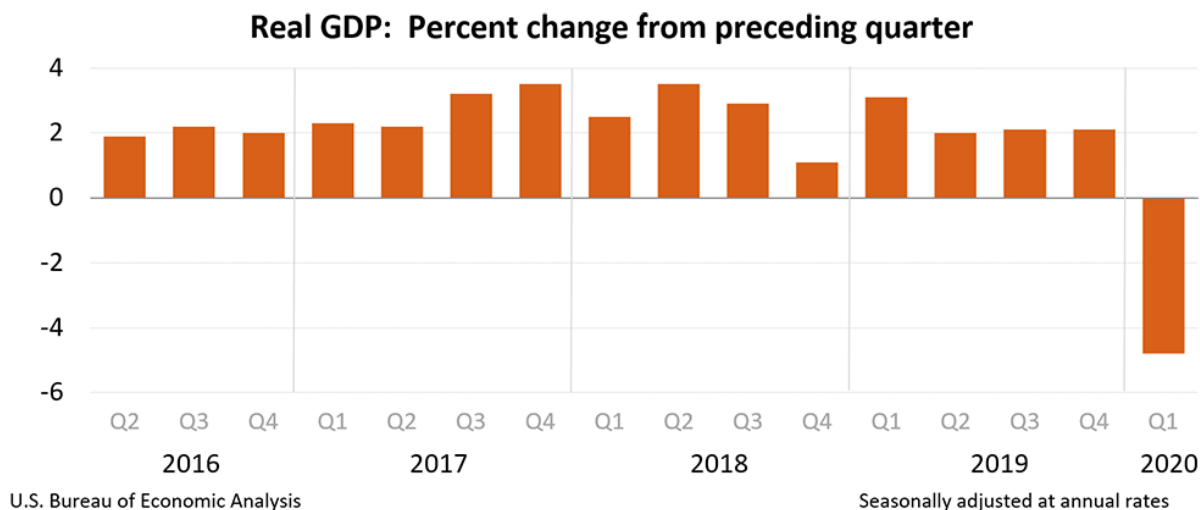
**Racial inequality in/and education.** Latinx and especially black Americans are suffering higher rates of COVID-19 infection and death than other populations.<sup>10</sup>

### **Athletic budgets doing well.**

Countervailing trend: college and university athletic leaders expressed anxiety about the pandemic’s impact on their field.<sup>11</sup> A series of colleges and universities are suspending or considering ending various sports.<sup>12</sup> The University of Cincinnati ended men’s soccer.<sup>13</sup> Old Dominion University ended men’s wrestling.<sup>14</sup>

**Macroeconomic indicators.** Chinese officials announced their economy contracted 6.8% in 2020’s first quarter, thanks to the coronavirus.<sup>15</sup> French economists estimated that 35% of the nation’s economy shut down because of COVID-19 measures.<sup>16</sup>

The United States economy suffered from the pandemic, contracting 4.8% in 2020’s first quarter:



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Unemployment rose, although published statistics are controversial, given at 12.7 or 14.7%, depending on government agency, timeline, and what counts as “unemployed.”<sup>18 19</sup> Personal income dropped 2% or \$382.1 billion in March.<sup>20</sup> One investment firm estimated that American GDP would contract by 40% in 2020’s second quarter.<sup>21</sup>

About one third of college students saw upcoming jobs placements cut, while about that number had theirs postponed or shifted online.<sup>22</sup>

**Library changes.** Many librarians and observers expect significant uncertainty about and cuts to library budgets in 2020-2021.<sup>23 24</sup>

**Adjunctification.** A group of high profile professors launched an online petition calling on colleges and universities to treat non-tenure-track faculty more fairly during the crisis.<sup>25</sup>

**Demographics.** Young and middle-aged Americans living in the southeast are unusually vulnerable to COVID-19, largely because that population has higher rates of comorbidities: hypertension, obesity, diabetes, and lung conditions.<sup>26</sup>

**Enrollment changes.** In a recent poll 17% of high school seniors expressed doubt about attending a four year institution this fall.<sup>27</sup> Another survey showed 20% of high school seniors deciding not to go to college because of the pandemic.<sup>28</sup> Several medical schools are graduating the class of 2020 early, so that members can enter the field against COVID-19.<sup>29</sup> The California State University system announced it would make entrance exams optional in order to ease would-be student access.<sup>30</sup>

## II. Technology

**Device ecosystem keeps growing:**

- Countervailing trends: skepticism greeting plans to use mobile devices for pandemic infection tracing.<sup>31</sup>

**Social media.** YouTube announced it would reduce promotion of videos describing conspiracies lining COVID-19 and the 5G wireless standard.<sup>32</sup> Facebook deleted anti-lockdown planning posts.<sup>33</sup> Nextdoor usage rose 80% in March, in response to demand from people spending more time at home.<sup>34</sup>

**Open source.** An open source AI program lets Zoom and Skype users create deepfaked video feeds of themselves.<sup>35</sup>

**Data and analytics.** Google published COVID-19 tracking models based on data gathered from users of its services.<sup>36</sup>

**Digital video rising.** Some federal prosecutors warned Zoom-bombers that their actions could be charged with state or federal crimes.<sup>37</sup>

Countervailing trends: Zoom was criticized for being vulnerable to Chinese governmental exploitation, for bad privacy practices, and security problems.<sup>38 39</sup>

(see also “Open source” above)

**Automation’s promise.** Californian police are deploying drones to warn homeless people about coronavirus dangers and protocols.<sup>40</sup> Medical institutions are using robotics in pandemic treatment.<sup>41</sup>

(see also “Open source” above)

### III. Education and Technology

**More MOOCs and online learning.** The World Health Organization (WHO) launched three new, open, online classes: Severe Acute Respiratory Infection (SARI) Treatment Facility Design; Introduction to Go.Data; How to put on and remove PPE.<sup>42</sup>

Several campuses announced their intention of holding fall classes online.<sup>43</sup> An international team called for nation-level organization of STEM university classes online.<sup>44</sup> Debates have occurred over the merits and appropriateness of synchronous and asynchronous teaching during lockdown.<sup>45</sup>

Colleges and universities are developing plans for online teaching during the 2020-2021 academic year, such as Durham University.<sup>46</sup> Cal State Fullerton’s provost announced that they would begin fall term online, and toggle to face to face as conditions permit.<sup>47</sup> There is more interest in the legal world for offering and accepting wholly online law degrees.<sup>48</sup> Various

colleges and universities announced virtual commencements.<sup>49</sup> Others shifted campus tours entirely online.<sup>50</sup>

Countervailing trend: several campuses announced they would provide face-to-face fall semesters, including Baylor and the University of Vermont.<sup>51</sup>

**Gaming in education.** A group of students is planning to hold a mass commencement exercise on May 22<sup>nd</sup> – in Minecraft.<sup>52</sup> The Getty Museum grants the Animal Cross game rights to display 70,000 images from its collection.<sup>53</sup>

**Automation in education.** Tokyo's Business Breakthrough University held a graduation ceremony using telepresence robots.<sup>54</sup> A University of Southern California project developed a semi-autonomous robot to clean surfaces.<sup>55</sup> MIT researchers used AI software to analyze and compare different national responses to the pandemic.<sup>56</sup>

**Open education possibilities.** IEEE “is providing free, direct access to a collection of various COVID-19 related research articles and standards.”<sup>57</sup>

**Video and education.** In early April Arizona State University passed a milestone of 100,000 separate videoconference sessions.<sup>58</sup>

**Crowdfunding in academia.** Wesleyan University students launched a GoFundMe for displaced fellow students.<sup>59</sup>

**Crowdsourcing in academia.** Stanford University launched a project to collaboratively collect coronavirus data for the purpose of building predictive models.<sup>60</sup>

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

Six students in the class, or about 25%, have had COVID-19 cases confirmed by test or doctoral diagnosis thus far. Sixteen students, over 60% of the class, have reported more than 30 total family members testing positive or falling ill with COVID-19. Six students are mourning the loss of family members or close family friends due to COVID-19.

- Michael Yarbrough, assistant professor  
John Jay College of Criminal Justice<sup>61</sup>

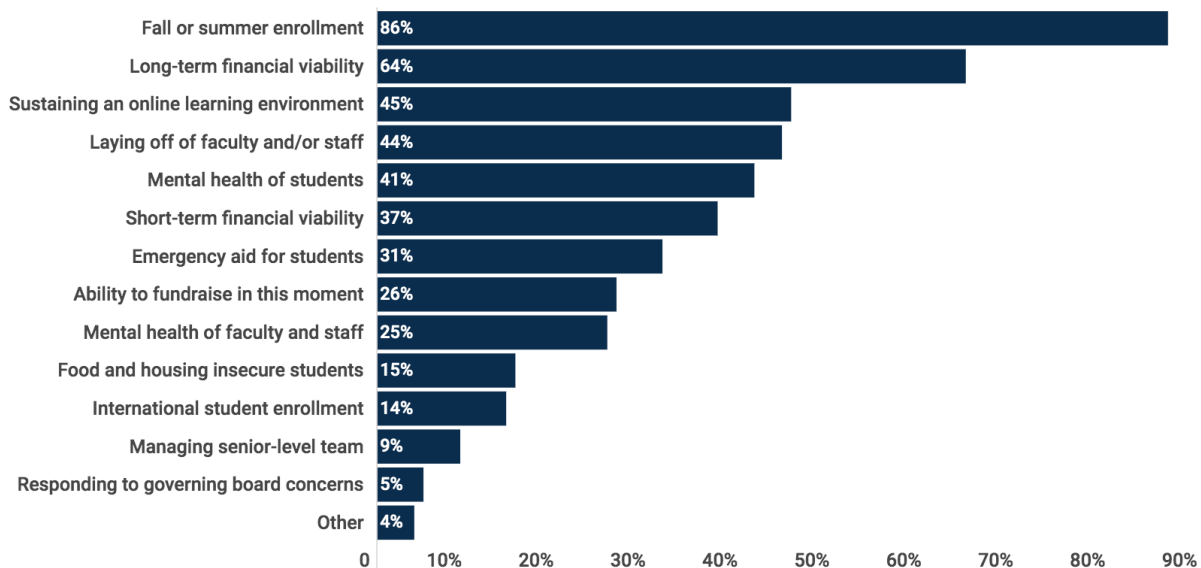
This concept, which we began to track in early 2012, continues to build across multiple fronts. It holds that colleges are overpriced, that student demand is questionable, and both could drop together:

- A survey of college and university presidents revealed their leading pandemic concerns:



**Figure 1. Most Pressing Issues Facing Presidents Due to COVID-19**

### Most Pressing Issues Facing Presidents Due to COVID-19

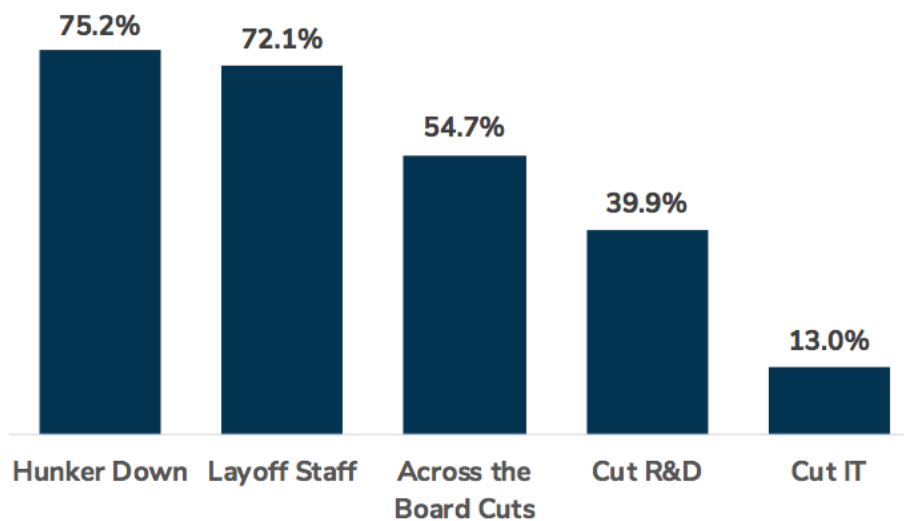


Pulse Point Survey of College and University Presidents on COVID-19: April 2020, American Council on Education, 2020.

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- COVID-19 impacts continue to be felt across higher education. The University of Alaska announced degree program cuts, partly driven by the pandemic.<sup>63</sup> The University of Maine system proclaimed that the shift online during spring cost them nearly 4% of their budget in room and board refunds.<sup>64</sup> The University of Arizona announced furloughs and compensation cuts, as did the University of Virginia.<sup>65</sup> <sup>66</sup> Even Harvard University announced cuts and hiring freezes, as did dozens, even hundreds of others.<sup>67</sup> <sup>68</sup> A survey of college presidents saw a majority contemplating staff and across the board cuts:

## Future Considerations in Dealing With COVID-19



Source: ABC Insights & rpk GROUP Survey of AACU Presidents' Trust; April 1, 2020; n=142

Proprietary and Confidential

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- Several campuses announced tuition cuts for summer or fall classes, including Southern New Hampshire University, Western Kentucky University, and Thomas Edison.<sup>70 71 72</sup> At the same time students are suing some campuses for reduced tuition.<sup>73</sup>
- Grad school woes: bar exams may be delayed, frustrating would-be lawyers aiming to take that essential test.<sup>74</sup>
- The majority of American campus presidents foresee fall enrollments declining, while one-third expect classes to be online, according to a mid-March survey.<sup>75</sup>
- Students and would-be students responded to the pandemic in various ways. Some are campaigning or filing suit for tuition reductions, arguing that the online experience is not what they paid for.<sup>76 77</sup> In several recent polls a statistical minority of high school seniors expressed doubts about attending college this fall, while others changed their choice of campus, due to COVID-19.<sup>78 79 80</sup>
- Politics, partisan: several Republican senators introduced a bill blocking the wealthiest universities (“if they have an endowment larger than \$10 billion”) from receiving federal funds unless they spent down at least part of their endowments.<sup>81</sup>

### Countervailing trends:

- A majority of philanthropists said they would donate as much as they recently did, or give more, despite the pandemic.<sup>82</sup>
- Michigan’s governor called for a kind of GI Bill to fund higher education for essential workers in that state.<sup>83</sup>

- The United States Congress sent relief funds to minority-serving institutions including tribal and historically black colleges and universities.<sup>84</sup>
- For profits: some for-profit colleges currently being charged with fraud by former students are well positioned to receive federal CARES funding, according to a new report.<sup>85</sup>

## 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: Campuses and sexual assault controversy; K-12 and higher education; alternative degrees; shared academic services; remedial classes; campuses and sustainability; executive compensation controversy; alternative certification; possible intergenerational tension; academic responses to the Trump administration.

Technology: 3d printing continues to innovate and grow; eBooks; digital security threats expanding; 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; new interfaces; internet of things.; new forms of creativity; blockchain; quantum computing.

Education and technology: the LMS world; social media in education.; mobile devices in education; rise of the net.generation; big data and data analytics; badges; flipped classroom/blended learning; campus digital security threats growing; educational entrepreneurship; virtual reality in education; eBooks in higher education; shared academics; 3d printing across the curriculum; digital humanities develops; faculty criticizing deployment of technology; Maker movement; 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://fite.us/>.

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