



# Future Trends in Technology and Education March 2023

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

## Table of Contents:

- I. Education and contexts  
Changes in international education - Racial inequality in/and education - Campuses and sexual assault controversy - Macroeconomic indicators - Library changes - Alternative degrees - Adjunctification - Campuses and sustainability - Demographics - Enrollment changes.
- II. Technology  
3d printing continues to innovate and grow - Digital security threats expanding - Device ecosystem keeps growing - Social media - Data and analytics- Automation's promise - Blockchain.
- III. Education and technology  
More MOOCs and online learning - Rise of the net.generation -Automation in education - Open education possibilities - Video and education - Virtual reality in education - Shared academics.
- IV. The higher education bubble
- V. Other trends  
About FTTE – endnotes

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



 **BECOME A PATRON**

Editorial notes: greetings from the tail end of winter, at least in the Virginia area. We're enjoying glimpses of spring, alternating with blasts of windy cold.

Assembling this FTTE issue I realized I'd started responding to COVID three years ago, which gave me an opportunity to reflect on the pandemic. ([source](#)) Yet few do this, or discuss the public health crisis at all, it seems. Most people in and out of academia appear to see themselves as past the virus. Meanwhile, COVID-19 continues to spread. We are living with it, as we accept other health dangers.

Elsewhere in the polycrisis, Russia's war in Ukraine continues, as do the academic effects. Research collaborations concerning the Arctic have broken down. ([source](#)) The Russian state designated one American college as an "undesirable" organization, one that "threatens the constitutional order and security of Russia." ([source](#)) Germany's Academic Exchange Service called for reconstructing Ukrainian higher education. ([source](#)) Meanwhile, the terrible Turkish earthquake has elicited humanitarian aid from universities around the world. ([source](#))

In the United States, many Michigan State University students are in shock after a gunman shot and killed several students. ([source](#))

In the meantime, I'd like to express my thanks to Aakansha Chacko, William Choi, Bonnie Dede, Maya Georgieva, Steven Kaye, and Christopher Rice for sharing stories for this month's report.

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.

<p>Joanna Richardson John Clarke Christopher Sessums Catherine Wehlburg Belinda Brown Rebecca Theresa Travis Sarah Sangregorio Corey Snow Ilene Frank Paul Czarapata Clifford Lynch John Hollenbeck Richard Sebastian Trent Batson Ronald S Friedman</p>	<p>David Scobey Shirley Dugdale Steve Ehrmann Edward Hilton Laura Gibbs Paul Henley Mike Richichi Jeffrey W. McClurken Lisa Stephens Phillip Long Chris Johnson Melissa Woo Laura Armer Hudson Baird Kate Montgomery David Attis</p>	<p>Nancy Gibson Kristen Eshleman Matthew Trainum Jeannie Kim-Han Tom Haymes Karen Mateer Hugh Blackmer Lisa Pritchard Cori S William O'Shea Seth Goodman Todd Bryant Fritz Vandover Michael Haggans Karen Cangialosi John O'Brien</p>
<p>Observatorio de Innovación Educativa del Tecnológico de Monterrey</p>		

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

\*\*\*\*\*

## I: Education and contexts

**Changes in international education.** The United Nations Global Convention on the Recognition of Qualifications Concerning Higher Education took effect on March 5. ([source](#))

The Iranian government is removing some outspoken faculty from their positions, as part of a strategy of containing national protests. ([source](#))

Chinese research outpaces the rest of the world in 37 out of 44 emerging technologies, according to an Australian study backed by the United States government. ([source](#))

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

**Racial inequality in/and education.** Nearly two-thirds of Americans opposed considering race in college admissions, according to a new poll. ([source](#)) A leadership crisis followed Connecticut College’s president’s decision to fundraise at an institution associated with racism and antisemitism. ([source](#)) 77 Stanford University faculty petitioned their administration to examine free speech problems with a bias reporting system. ([source](#))

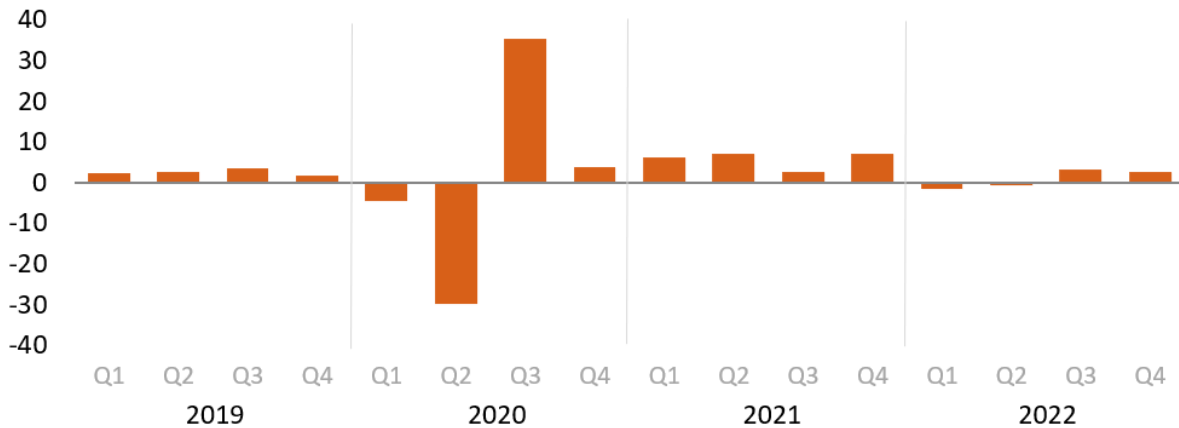
The state of South Carolina requested diversity, equity, and inclusion (DEI) spending data from its universities, following several other states. ([source](#)) The state of Texas suspended DEI work in its public universities. ([source](#)) The University of North Carolina governing board prohibited its campuses from requiring DEI statements of job applicants. ([source](#)) The new board of Florida’s New College ended its DEI office. ([source](#)) Florida’s Valencia State University’s board removed equity language from key statements. ([source](#)) The College Board criticized Florida’s state government for its critique of their black studies Advanced Placement exam; at least four other states announced they were reconsidering that test. ([source](#)) ([source](#)) A University of Texas-Austin professor sued that institution, charging it with retaliating against him for criticizing its DEI work. ([source](#)) A Palm Beach University professor claimed that he was punished for teaching a racial justice unit. ([source](#))

Controversy over Islamic art occurred at a second Minneapolis campus, this time at Macalester College and involving art hosted at the institution’s museum. ([source](#))

**Campuses and sexual assault controversy.** A Congressional requirement for the Department of Education to survey campus attitudes towards sexual abuse lacked funding. ([source](#)) The family of a California State University Maritime Academy student who killed himself over sexual assault allegations is suing that institution. ([source](#))

**Macroeconomic indicators.** American gross domestic product (GDP) rose 2.7% in 2022’s fourth quarter, according to revised data.

### Real GDP: Percent change from preceding quarter



U.S. Bureau of Economic Analysis

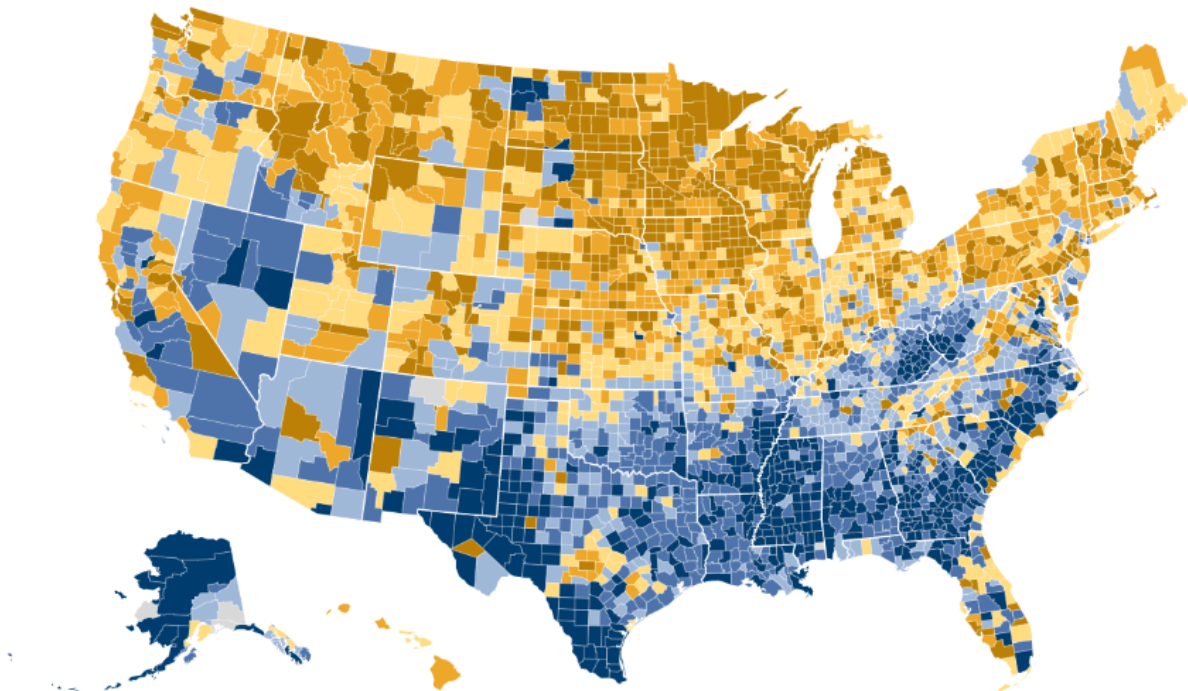
Seasonally adjusted annual rates

([source](#)) The Federal Reserve Bank of Atlanta estimates GDP will rise by 2.6% in 2023's first quarter. ([source](#)) Inflation rose 0.6% from December 2022 to January 2023, while prices rose 5.4% over the past year, according to the Commerce Department. ([source](#))

Southern Americans have significantly worse credit scores than do people in the rest of the country, due largely to medical bills and state Medicare policies, according to new research:

#### Average credit score

■ 687.2-726.0 ■ 726.0-733.7 ■ 733.7-740.3 ■ 740.3-745.8 ■ 745.8-750.9 ■ 750.9-774.3



Note: FICO averages for individuals with credit cards by county as of 2019

([source](#))

**Library changes.** Vermont State University plans to shutter all five member libraries, distributing their physical collections. ([source](#))

**Alternative degrees.** Employers want more input in the design of academic microcredentials, while many STEM students know little about those certifications, according to two new studies. ([source](#))

**Adjunctification.** Harvard adjuncts and others launched a unionization drive. ([source](#))

**Campuses and sustainability.** Universities and colleges are showing more interest in the United Nations' Sustainable Development Goals, according to a new study. ([source](#)) A new study showed two dozen American universities receiving millions of dollars from fossil fuel companies during 2010-2020. ([source](#))

**Demographics.** Japan's birthrate sank to its lowest recorded level, as that nation's total population continued to shrink. ([source](#))

**Enrollment changes.** Subharan African students are likely to study abroad in rising numbers, according to a new study. ([source](#)) A City University of New York (CUNY) mentoring high school students increased their likelihood to apply to college. ([source](#))

## II: Technology

**3d printing continues to innovate and grow.** A Spanish hospital is launching the first European trial of a 3d printed drug. ([source](#))

**Digital security threats expanding.** GoDaddy announced hackers had penetrated its defenses from 2020 through 2022. ([source](#))

**Device ecosystem keeps growing.**

- Countervailing trend: a group of companies laid off staff from VR teams, while a major Chinese firm ended headset development. ([source](#))

**Social media.** A Congressional bill would prohibit social media access to minors. ([source](#)) TikTok announced new features to discourage younger users from extended viewing. ([source](#))

After a December spike of 2.5 million active users, Mastodon declined to roughly 1.4 million, which is still a larger population than a year ago. ([source](#))

**Data and analytics.**

Countervailing trend: the United States Federal Trade Commission fined BetterHelp for revealing too much customer data, and banned the company from sharing such data for advertising revenue. ([source](#))

**Automation's promise.** Scientists used an underwater robot to gather more data about the Thwaites glacier in Antarctica. ([source](#)) Japan revised traffic laws to allow a new generation of delivery robots to proceed. ([source](#)) Ford Motor Company applied for a patent covering self-repossessing cars. ([source](#))

Google announced it was developing its own chat AI, Bard. ([source](#)) Microsoft announced it would infuse generative AI across more of its businesses. ([source](#)) Meta announced an AI app which uses far less power than others, along with its own large language application. ([source](#)) ([source](#)) After OpenAI launched an API for its ChatGPT service, a series of applications appeared which use it, including one from Snapchat and another for legal writing. ([source](#)) ([source](#)) NVidia demonstrated an AI application which adjusts a person's eyes on video, to portray them as focusing on a camera. ([source](#)) Samsung announced a voice cloner for phone messages. ([source](#))

An AI-driven study found serious problems with psychological research's replication. ([source](#))

Countervailing trends: Getty Images sued Stability AI for intellectual property theft. ([source](#)) Google and Microsoft apparently pay significantly more to provision AI chatbox search queries than their other search services. ([source](#)) A science fiction magazine shut down online submissions after receiving too many generated by chatbots to deal with. ([source](#))

### **Blockchain.**

Countervailing trend: the United States Securities and Exchange Commission cracked down on several cryptocurrency operations, as did multiple state litigators. ([source](#))

## III: Education and Technology

**More MOOCs and online learning.** Some Afghan women, recently barred from higher education, are taking classes online. ([source](#)) The Chinese government banned international online education for credit. ([source](#))

Countervailing trends: the United States Department of Education launched a policy revision process which might encompass nearly all educational technology, possibly adding regulatory burdens to many providers. ([source](#)) The University of California system banned students from putting together entirely online degrees. ([source](#))

**Rise of the net.generation.** Teen girls suffer rising rates of threats, violence, and rape, according to a new CDC study. ([source](#)) One half of public K-12 school students started this academic year behind, according to new research. ([source](#))

**Automation in education.** OpenAI launched a tool to determine if a given text was generated by their ChatGPT3 service. ([source](#)) Turnitin announced it would launch a ChatGPT-generated content detector in April. ([source](#)) Quizlet launched an online tutor using ChatGPT. ([source](#))



Countervailing trends: several scholarly publishers stated that they would not accept ChatGPT or other AIs as published co-authors. ([source](#)) ([source](#)) ([source](#)) A Louisiana State University athlete/influencer posted a TikTok video urging people to use an AI service to write essays; LSU issued a statement condemning the idea. ([source](#)) Vanderbilt University apologized for sending out an email consoling the community after a school shooting, but identifying it as partially written by ChatGPT. ([source](#))

**Open education possibilities.** The African Library and Information Associations and Institutions launched new open access support. ([source](#)) Cambridge University Press announced that more than 50% of its articles appeared in open access forms. ([source](#))

A Michigan community college realized \$10 million in student textbook cost savings since 2017 through its open education resources program. ([source](#))

**Video and education.** The well-known Green brothers partnered with Arizona State University to produce videos for optional credit. ([source](#))

**Virtual reality in education.** The University of Michigan launched three extended reality classes. ([source](#))

**Shared academics.** A European Erasmus+ shared degree project began. ([source](#))

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

*“The reason I think we can [reauthorize the Higher Education Act] this year is because higher ed has never been held in such low esteem as it is now... In the past, we had members who were a little shy about doing it, because their presidents of their universities would come to them and say, ‘No, no, no, you can’t bother us,’ and they would be intimidated by them. But I don’t think that’s going to be the case this year.”*  
-North Carolina representative Virginia Foxx  
([source](#))

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 growing number of institutions, especially ones in the northeast and Midwest, are considering mergers. B. H. Carroll Theological Institute will merge with East Texas Baptist University. ([source](#))
- Endowments dropped overall during the most recent fiscal year. ([source](#))
- Majorities of students and faculty reported classroom engagement problems growing in a new survey. ([source](#))

- St. Leo's university announced cuts to programs and faculty. ([source](#)) A small Michigan college announced it would close. ([source](#)) Marymount University announced a series of cuts to academic programs. ([source](#))
- Birmingham-Southern College pursues a dual strategy of trying to win public funding while planning on closing if that fails; state officials expressed skepticism. ([source](#)) ([source](#))
- Another for-profit institution shut down. ([source](#))
- Politics, partisan: the Democratic governor of Massachusetts announced her decision to push for free community college tuition. ([source](#)) The Republican-led University of North Carolina at Chapel Hill's Board of Trustees mandated the creation of a School of Civic Life and Leadership; the regional accreditor criticized the move. ([source](#)) ([source](#)) Florida's Republican governor floated the idea of blocking Advanced Placement exams from that state, after blocking a black studies AP exam, and also sought to gain data about campus trans care. ([source](#)) Governor DeSantis asked public universities to share data about trans student care. ([source](#)) A Florida bill would expand college and university trustees' control over faculty tenure, while also abolishing certain academic departments. ([source](#))

Countervailing trends:

- Charitable giving to higher education rose significantly in the most recent fiscal year. ([source](#)) A donor gave \$110 million to set up a center for software innovation at Ohio State University. ([source](#))

## 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: gender identity; shared academic services; remedial classes; challenges to internships; executive compensation controversy; alternative certification; possible intergenerational tension; academic responses to the Trump administration.

Technology: 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? Open source; crowdfunding growing; onshoring hardware production; Office versus Web office; digital video rising; shopping continues to migrate online; copyright battles continue; new interfaces; fragmented internet; Internet of things; new forms of creativity; quantum computing.

Education and technology: the LMS world; social media in education; mobile devices in education; gaming in education; big data and data analytics; badges; flipped classroom/blended learning; campus digital security threats growing; educational entrepreneurship; crowdfunding in academia; Ebooks in higher education; 3d printing across the curriculum; crowdsourcing in academia; digital humanities develops; faculty criticizing deployment of technology; Maker movement; blockchain in education.

\*\*\*\*\*

### 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://fte.us/>.