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Your February 2022 FTTE report

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Future Trends in Technology and Education February 2022

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 NYSERNet, our subscribers, and supporters on Patreon.



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Editorial notes: greetings from a cold and wet winter, here in northeastern Virginia. Classes are under way; my Georgetown seminar just switched from remote to in-person. And the Future Trends Forum is about to celebrate its sixth anniversary - please join us. ([source](#))

Meanwhile, the COVID-19 pandemic continues to impact society and higher ed, even as the Omicron wave thankfully ebbs in many regions. Japan allowed less than 1% of international students in country in response to rising infections. ([source](#)) In the United States, COVID varies from campus to campus. One quarter of Dartmouth students tested positive. ([source](#)) University of California Los Angeles students protested the return to in-person classes. ([source](#)) Ferris State University suspended a professor for posting a video where he criticized campus COVID policies. ([source](#)) The University of Louisville warns that it will consider disciplining

faculty who move classes online. ([source](#)) Some major Chicago museums started requiring vaccination proof from visitors. ([source](#)) Virginia's public universities rescinded staff vaccine requirements in response to the stance of that state's newly installed governor. ([source](#)) A federal judge criticized the state of Florida for trying to restrict university faculty members' pandemic-related speech. ([source](#))

Here on the FTTE report, we're adding a new trend category: gender identity. This captures a broad range of changes to received notions of gender, including the creation of new genders, rising numbers and acceptance of transpeople, non-binary identities, and more.

In the meantime, I'd like to express my thanks to Todd Bryant, Bonnie Dede, Mathieu Plourde, Christopher Rice, and Shel Sax 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.

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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

Student debt
Campus mergers and closures
Graduate school shrinkage
Partisan and bipartisan political pressure

EDUCATION AND CONTEXTS	EDUCATION AND TECHNOLOGY	TECHNOLOGY
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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
	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 European Commission proposed a set of flagship collaborations. ([source](#)) Turkey's Higher Education Council fired three Boğaziçi University deans, raising concerns about political intervention in higher education. ([source](#))

Holland's Vrije Universiteit Amsterdam will return Chinese funding after several Chinese academics stated their government was not oppressing its Uighur population. ([source](#)) China gave more scholarships to Latin American students than did the United States. ([source](#)) The United States relaunched the Homeland Security Academic Advisory Council (HSAAC), a committee "to provide advice and

recommendations to the Secretary and DHS senior leadership on matters related to homeland security and the academic community.” ([source](#)) Federal prosecutors recommended dropping charges of Chinese collusion against an MIT professor. ([source](#))

(See also “Copyright battles continue” below)

Racial inequality in/and education. The National Science Board called on American education to improve enrollment of underrepresented minorities in STEM fields, in part to improve the nation’s scientific capacity on the world stage. ([source](#))

Bomb threats targeted at least a dozen historically black colleges and universities (HBCUs) at the start of Black History Month. ([source](#)) The University of Memphis launched a professional development fund to encourage faculty to redesign classes to be more antiracist, eliciting criticism from local and national politicians. ([source](#)) A law professor sued the University of Illinois-Chicago, charging free speech restrictions over his use of a racial epithet in an exam. ([source](#))

Dartmouth University students petitioned that institution to launch an Asian-American studies program. ([source](#)) The University of Pennsylvania’s law school commenced a process with possible sanctions against a tenured professor who had criticized Asian immigrants. ([source](#))

The California State University system added caste to its list of harmful prejudicial categories; 80 faculty members signed a letter criticizing the move. ([source](#)) ([source](#))

Local police investigated antisemitic graffiti at Curry College. ([source](#)) Six CUNY professors sued their faculty union, alleging antisemitism. ([source](#))

Gender identity. University of Oregon faculty advocated for gender neutral forms of “professor emeritus/a.” ([source](#)) A University of Pennsylvania student athlete transwoman has elicited support and criticism for her swimming success. ([source](#))

Campuses and sexual assault controversy. The University of Michigan agreed to pay nearly \$500 million to victims of an athletics doctor employed there for forty years. ([source](#)) Michigan also fired its president for conducting a relationship with another UM employee. Florida International University’s president resigned after charges of causing an FIU employee “emotional... discomfort.” ([source](#)) Syracuse University disciplined a student for asking another if he was a registered sex offender, citing “mental harm”; legal action resulted. ([source](#)) Harvard University placed a tenured professor on unpaid leave, following findings he had verbally harassed students sexually. ([source](#))

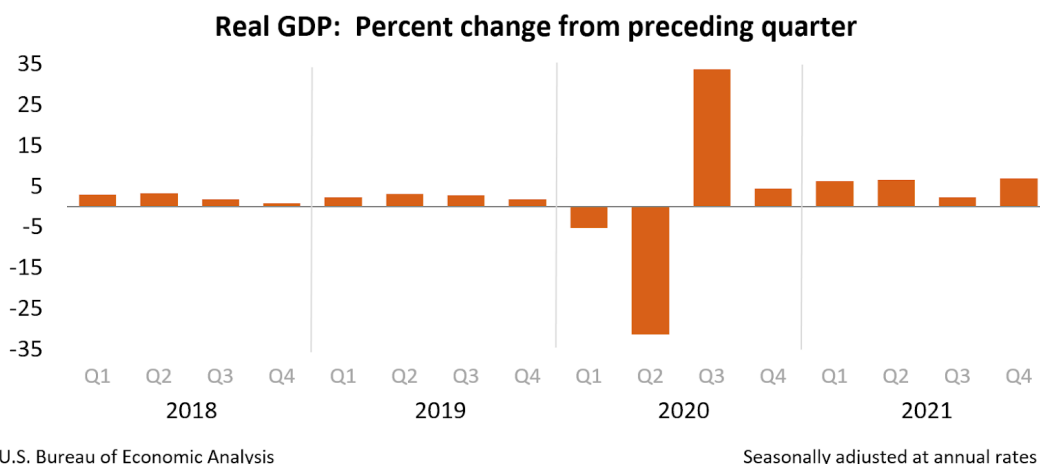
Athletic budgets doing well. An investor offered one million dollars to tempt a University of Oklahoma star football player to move to Eastern Michigan University.

([source](#)) An appeals court ruled that the University of Arizona was not liable for off-campus acts of sexual violence committed by a student athlete. ([source](#))

K-12 and higher education. A Davidson College professor launched an online class to teach Spiegelman's *Maus* for students in a Tennessee county which just banned the book from its school system. ([source](#)) The California State University system moved towards an SAT/ACT optional admissions policy. ([source](#))

Macroeconomic indicators. The International Money Fund (IMF) cut its 2022 economic growth forecast from 4.9% to 4.4%. ([source](#))

America's gross domestic product (GDP) rose 2.3% in 2021's third quarter and by 6.9% in the fourth, according to new data:



([source](#)) American unemployment ticked down to 3.9% in December, according to federal statistics. ([source](#)) United States inflation rose 9.1% in 2021. ([source](#))

Library changes. A report described changes to library services as a result of COVID. ([source](#))

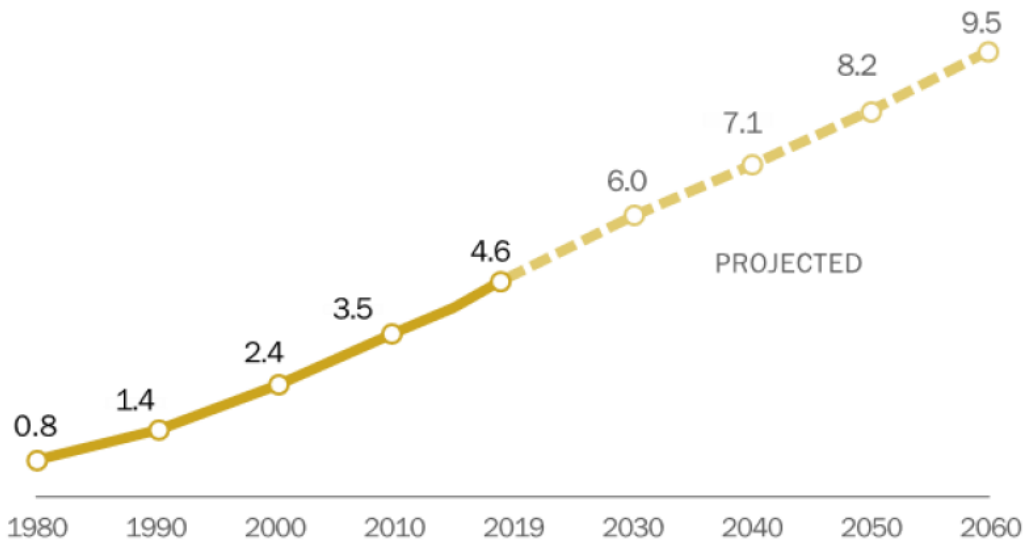
(See also "Ebooks" below)

Campuses and sustainability. California's governor proposed paying students who use their academic experience to work on climate change \$10,000 each. ([source](#))

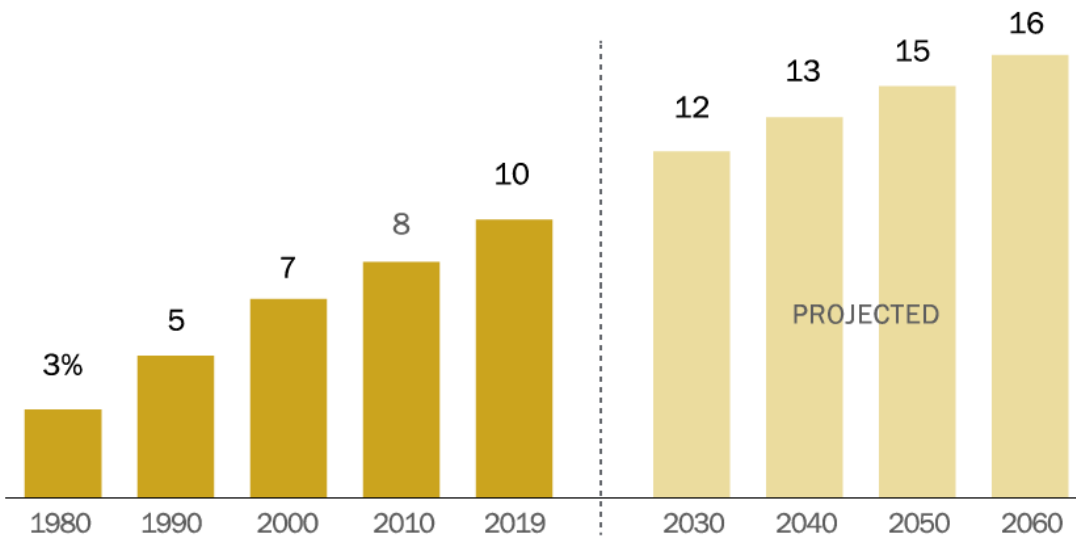
Demographics. China's population growth dropped to nearly zero, the lowest on record. ([source](#)) In the United States, the immigrant proportion of the black population has been increasing steadily, and appears likely to keep growing.

Black immigrant population climbs to 4.6 million and is projected to reach 9.5 million by 2060

Total U.S. Black foreign-born population, in millions



% of U.S. Black population who are foreign born



Note: For data from 2000 to 2019, “U.S. Black foreign born population” refers to all people who self-identify as Black, inclusive of single-race Black, multiracial Black and Black Hispanic people and were born outside of the U.S. to non-U.S. citizen parents. Data from 1980, 1990, 2030 and later only includes data for single-race Black foreign-born population.

Source: Pew Research Center analysis of decennial census data from 1980, 1990 and 2000 and American Community Survey data from 2010 and 2019. Census Bureau 2017 population projections for 2020-2060.

“One-in-Ten Black People Living in the U.S. Are Immigrants”

PEW RESEARCH CENTER

[\(source\)](#)

Enrollment changes. More men than women dropped out of college during the pandemic because men were overrepresented in fields where hands-on work is essential, according to a new study. ([source](#))

Academic responses to the Trump administration. Virginia's new attorney general fired two professors who were working on the January 6 investigation. ([source](#)) A federal judge ruled that a former law professor, who had worked with the then-outgoing Trump administration and played some role in January 6 events, would have to turn over documents to a federal investigation. ([source](#))

II: Technology

3d printing continues to innovate and grow. Most Earth orbit satellites have at least some 3d printed parts now. ([source](#)) A group of scientists reported good effects from printing meat with cocoa butter. ([source](#))

Ebooks. The state of Maryland promulgated a new law requiring publishers to sell ebooks to license the content to public libraries 'on reasonable terms.'" ([source](#))

Digital security threats expanding. Houston authorities warned of bad actors putting up QR codes which appeared legitimate, but actually directed users to other sites. ([source](#)) Someone hacked Ukrainian websites as the Russian invasion threat rose; at the same time a hacktivist group claimed to have successfully attacked Byelorussian railroad lines which Russian troops were using. ([source](#)) ([source](#))

Digitization shifts from physical media to streaming.

Countervailing trend: several high-profile musicians quit Spotify over its hosting Joe Rogan and his anti-vaccine statements, driving down the streaming music service's stock value. ([source](#))

Device ecosystem keeps growing.

- Wearable computing: Magic Leap announced medical partners for the next version of its mixed reality headset. ([source](#))
- Virtual reality headsets: Walmart filed metaverse-themed trademarks. ([source](#))
- Countervailing trend: airlines lobbied the Biden administration to block 5G signals in airports, claiming those might interfere with vital aircraft instruments. ([source](#))

Social media. Facebook continued to expand its African presence. ([source](#)) Twitter announced a function for users to turn their profiles into non-fungible tokens (NFTs). ([source](#)).

Countervailing trends: Facebook lost \$232 billion in its stock value, due in part to its first report of losing users, possibly the largest single drop in stock market history. ([source](#)) The Washington Post and ProPublica charged Facebook with not doing enough to stymie people sharing pro-Trump messages, including ones calling for violence, between the 2020 presidential election and the January 6th riot. ([source](#))

Big data and analytics

Countervailing trend: revelations that a suicide/self-harm prevention nonprofit had shared personal data with a for-profit firm elicited controversy. ([source](#))

Copyright battles continue. A retired economics professor won a copyright case against the China National Knowledge Infrastructure, charging CNKI with illegally uploading copies of his papers. ([source](#))

Fragmented internet. The Kazakhstan government shut down internet access to its residents during political unrest. ([source](#))

Automation's promise. British scientists developed an autonomous robot powered by algae. ([source](#)) A Swedish drone helped save a man's life by flying in a defibrillator. ([source](#))

Countervailing trend: IBM sold off parts of its Watson health care unit. ([source](#))

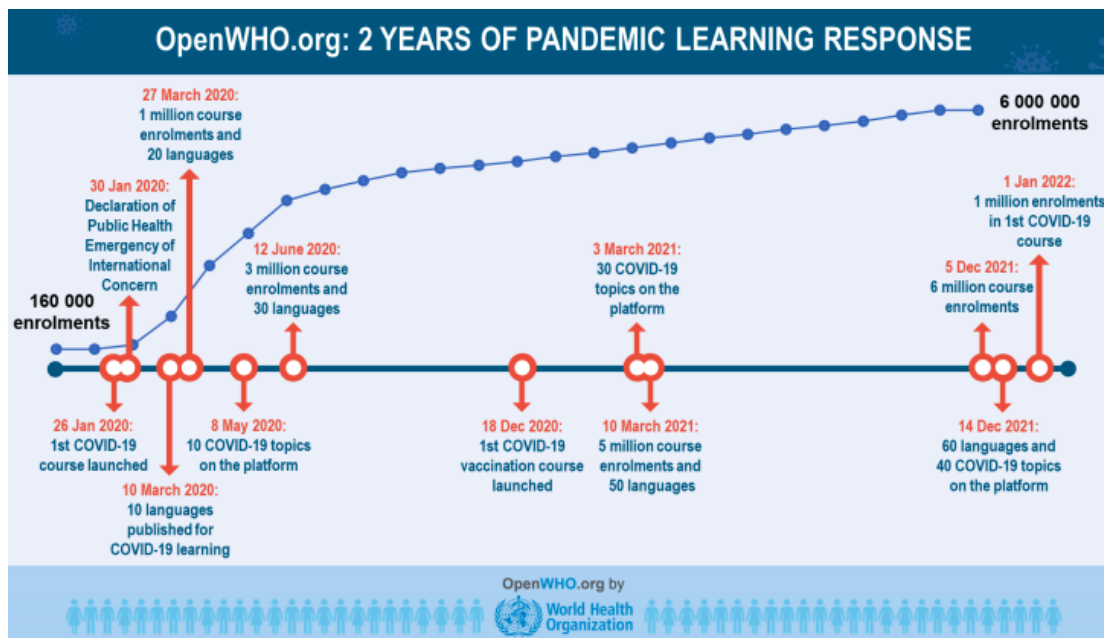
Blockchain. Some Afghans have taken to using bitcoin as a currency, as financial strictures make traditional finance less accessible. ([source](#)) Wal-mart filed trademarks indicating it was working on blockchain services. ([source](#)) Several Hollywood celebrities publicly supported buying and selling NFTs. ([source](#))

Countervailing trends: in January bitcoin prices fell steeply. ([source](#)) Mozilla reversed course on a crypto service. ([source](#)) Rumors swirled that Meta (formerly Facebook) was considering telling off its own bitcoin offering. ([source](#))

Quantum computing. A University of New South Wales project claimed a major improvement in quantum computing accuracy. ([source](#)) A team from China's University of Science and Technology published progress in developing a quantum-powered approach to code-breaking. ([source](#))

III: Education and Technology

More MOOCs and online learning. OpenWHO launched more COVID-related online classes and updated others. ([source](#)) OpenWHO also claimed to have enrolled 6 million learners over the past two years:



([source](#))

The College Board announced it would offer PSAT and SAT tests online starting in 2023-2024. ([source](#)) Majorities of community college students preferred more online learning options and more technology within in-person classes, according to a new poll. ([source](#))

Countervailing trends: three United States Senators sent an information request to leading OPM providers, hoping to reduce tuition increases. ([source](#)) Substantial numbers of students, especially women, reported mental stresses while taking online classes during the pandemic. ([source](#))

(See also “K-12 and higher education” above)

Social media in education.

Countervailing trends: a visiting math professor sued St. Joseph’s University for terminating his contract over anonymous tweets. ([source](#)) A Georgetown University law professor’s tweets drew criticism for their characterization of potential Supreme Court nominees. ([source](#))

Gaming in education. A University of Ottawa project received funding from Lego to spread game-based learning. ([source](#))

Automation in education. Oregon State University researchers used robots to monitor an endangered Antarctic glacier. ([source](#))

Educational entrepreneurship. Class recording company ECHO360 merged with hybrid learning provider Turning. ([source](#)) LinkedIn competitor Handshake raised \$200 million and began partnering with educational institutions. ([source](#)) Pearson

bought certification company Credly for \$200 million. ([source](#)) Teachmint purchased ERP provider MyClassCampus. ([source](#))

Countervailing trends: Chinese tutoring companies. ([source](#))

Virtual reality in education. The Illinois Holocaust Museum launched a VR exhibit. ([source](#))

Blockchain in education. Duke University class gave graduates taking a series of classes through Coursera NFTs as part of their program completion materials. ([source](#)) Russia's Hermitage Museum announced it would display NFTs. ([source](#))

IV. The higher education bubble, continued.

"I asked Wharton students what they thought the average American worker makes per year and 25% of them thought it was over six figures. One of them thought it was \$800k. Really not sure what to make of this (The real number is \$45k)"

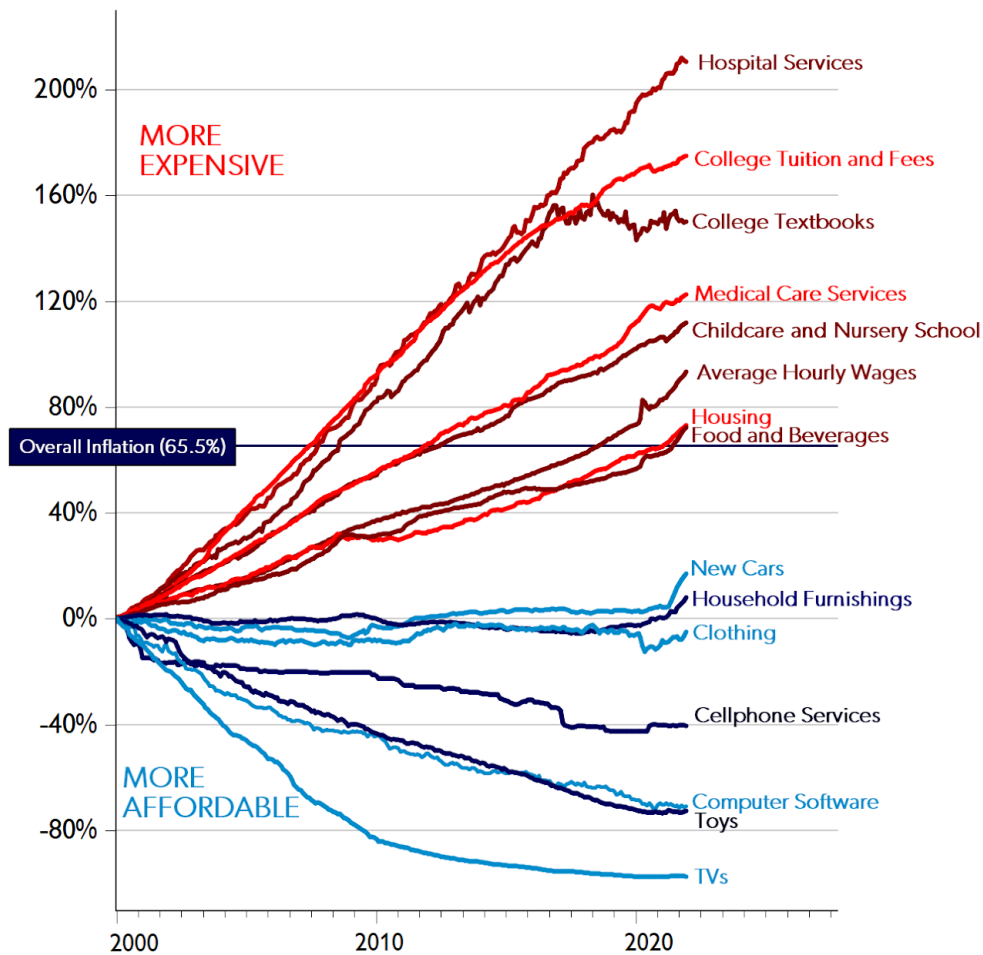
-Nina Strohming, professor of Legal Studies and Business Ethics at the Wharton School of the University of Pennsylvania ([source](#))

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. The University of San Francisco opened talks to acquire the nearby San Francisco Art Institute. ([source](#)) The Boston College-Pine Manor College merger yielded a new college. ([source](#))
- A long-running prices chart received an update, showing published tuition continuing to rise steeply:

Price Changes: January 2000 to December 2021

Selected US Consumer Goods and Services, Wages



Source: Bureau of Labor Statistics

Carpe Diem 

([source](#))

- Former students sued sixteen American colleges and universities, alleging price-fixing in financial aid arrangements. ([source](#))
- Oklahoma City University closed two K-12 teacher education programs, citing low enrollment. ([source](#)) The City College of San Francisco laid off 50 full time faculty members, citing the need to establish financial sustainability for accreditation. ([source](#))
- California's community college system broke off a credit transfer agreement with a leading for-profit institution. ([source](#))
- Politics, partisan: two Democratic legislators proposed a bill to end legacy admissions. ([source](#)) Black legislators and activists called on the Biden administration to cancel student debt. ([source](#)) The Biden administration

announced new spending of \$178 million to support community and rural colleges. ([source](#))

Countervailing trends:

- The California State University system is considering a basic minimum income pilot for students. ([source](#)) California's legislature also approached funds to turn one campus into a polytechnic. ([source](#))
- The state of Georgia announced free technical college tuition for people aiming for careers in law enforcement. ([source](#))
- Emory University announced it would replace need-based loans with scholarships. ([source](#))
- Total state spending on higher education rose 8.5% between 2020 and 2021. ([source](#))
- American college completion rates rose by 1.2%. ([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: alternative degrees; shared academic services; remedial classes; challenges to internships; adjunctification; executive compensation controversy; alternative certification; possible intergenerational tension.

Technology: 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; new interfaces; Internet of things; new forms of creativity.

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; open education possibilities; video and education; crowdfunding in academia; Ebooks in higher education; shared

academics; 3d printing across the curriculum; crowdsourcing in academia; digital humanities develops; faculty criticizing deployment of technology; Maker movement.

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>.

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