

Resources on Education Technology

The forced closing of public schools and the move to “distance learning” through online tools, apps, pre-packaged lesson plans, and tracking devices—known as “edtech”—raises the question: what does the future of education look like?

The unfolding economic crisis’s impact on already resource-strapped public school districts will undoubtedly shape this new future. When schools open again, will more classes and lessons be online? Will homeschooling increase? What is the role of online charter schools vs. brick-and-mortar schools? What’s the best and most equitable way to provide students quality education in the digital age? How can we maintain public oversight and ensure equal education for all when so many private companies will be involved? These are all serious policy issues that must be debated as we move forward.

However, many technology companies see the current crisis—and the economic downturn—as an [opportunity to expand market share and increase profits](#). Digital marketing to schools, parents, and students is already intense. As the superintendent of Highline Public Schools, near Seattle, recently [said](#) about the onslaught of offers from vendors: “To every vendor, solution partner, researcher, education advocate, etc., please stop. Just stop.”

While technology can and will be used creatively to enhance public education, policy decisions must be guided by educators and a commitment to democratic control of universal public education for all. Too often policy debates are fueled by outlandish claims, emotionally charged language, clever marketing, and vague promises.

Developing sound policy should be based on facts and actual oversight and regulatory experience. Use of educational technology has been growing for several years, which has left a track record to learn from.

This list is designed to provide background information and useful policy tools to help grapple with how to fit new digital tools into educational systems. Because there’s a great deal of research on digital learning, this is not a complete listing but rather a sampling of useful studies and articles.

See the following sections below:

- An overview of edtech issues, including tools for parents, educators and policymakers dealing with equity and access (**pg. 2**)
- An overview of privacy issues, including tools for parents, educators, and school boards to evaluate and safely use edtech (**pg. 7**)
- Information about edtech companies (**pg. 10**)

Overview of Edtech Issues

Online learning raises serious policy questions. These three articles grapple with the history of edtech developed and often still controlled by private, for-profit corporations, and how it should be used in public education.

[Personalized Learning and the Digital Privatization of Curriculum and Teaching](#) (2019)

This National Education Policy Center (NEPC) research brief examines the history of personalized learning and the key assumptions made by its proponents; reviews the research evidence; and reflects on the roles and possible impacts of the digital technologies deployed by many programs.

Despite many red flags, the pressure to adopt personalized learning continues to mount. The authors thus recommend that schools and policymakers pause in their efforts to promote and implement personalized learning until rigorous review, oversight, and enforcement mechanisms are established.

[An NPE Report | Online Learning: What Every Parent Should Know](#) (2018)

This Network for Public Education guide presents a frank assessment of the intended and unintended consequences of online learning in K-12 school—both charter and district—and offers questions parents should ask principals if their child’s school adopts computerized programs to deliver instruction, assessment or behavior management.

[“Disaster Capitalism, Online Instruction, and What Covid-19 Is Teaching Us About Public Schools and Teachers”](#) (2020)

In this blog post, education writer Nancy Bailey writes: “Online learning can never adequately replace public schools and teachers. In such a desperate time, closing public schools due to this pandemic is showing Americans how reliant we are upon those schools to fulfill, not just an educational purpose, but the real social and emotional needs of children and families.” Includes a list of shortcomings of online education and all of the critical roles that brick and mortar public schools and teachers play in our democracy.

Equity and Access

The crisis has forced school districts to rapidly move to distance—or online—learning. This has exposed the massive digital divide, in which children from low-income families, children of color, children in rural areas, English language learners, and many special needs children have less access to high-speed internet, computers/tablets, a quiet and safe place to learn, etc. Many fear existing inequalities will be exacerbated. Below are just a few of the stories and studies exploring these issues and policy tools to help educators, parents, and policymakers find ways of addressing these challenges.

[“Digital gap between rural and nonrural America persists”](#) (2019)

A 2019 Pew Center Research study found: “Rural Americans are now 12 percentage points

less likely than Americans overall to have home broadband; in 2007, there was a 16-point gap between rural Americans (35%) and all U.S. adults (51%) on this question....Even though rural areas are more wired today than in the past, other research shows that substantial segments of rural America still lack the infrastructure needed for high-speed internet, and what access these areas do have tends to be slower than that of nonrural areas. “

[“Teachers Without Internet Work in Parking Lots, Empty School Buildings During COVID-19”](#) (2020)

“Educators are now assumed to have devices and internet access and unlimited data to do their job, and [in some cases], they don’t,’ said Cheryl Bost, the president of the Maryland State Education Association. The lack of reliable, high-speed internet can make an already overwhelming job of pivoting to online instruction even more stressful, teachers say.”

[“In rural California, children face isolation, hunger amid coronavirus school closures”](#) (2020)

“The pandemic has widened the gulf between the digital haves and have-nots, said Niu Gao, a researcher for the Public Policy Institute of California. In rural California, some 41% of households with school-age children do not have broadband access at home, much higher than the statewide average of 27%, Gao said.”

[“Digital divide persists even as lower-income Americans make gains in tech adoption”](#) (2019)

A 2019 Pew Center Research study found: “Roughly three-in-ten adults with household incomes below \$30,000 a year (29%) don’t own a smartphone. More than four-in-ten don’t have home broadband services (44%) or a traditional computer (46%). And a majority of lower-income Americans are not tablet owners. The disparity in online access is also apparent in what has been called the ‘homework gap’—the gap between school-age children who have access to high-speed internet at home and those who don’t.”

[“As School Moves Online, Many Students Stay Logged Out”](#) (2020)

This April 2020 *New York Times* article highlights one of the major problems with online learning: ensuring that students are actually attending the online classes.

[“The coronavirus crisis spotlights the inequalities in American education”](#) (2020)

“Many [students] don’t even have access to the internet. Data from the National Telecommunications and Information Administration showed that in 2017, about 7 million school-age children were in households without home Internet service. ‘However this plays out in the sort of immediate effects to people, really all it does is demonstrate the profound inequality that already exists in this society,’ [New Jersey ninth grade teacher David] Sclar says. ‘It needs fundamental change. This should be an opportunity to look and see ... what can and what should be done.’”

Nationwide Examples

California

[“California schools’ response to pandemic varies widely”](#) (2020)

“We have had a digital divide in this state and in this country for many years, and It’s an embarrassment, and we must change that,” Thurmond said.

[“Thousands of California students still without laptops and Wi-Fi for distance learning”](#) (2020)

“About 20 percent of all California students, nearly 1.2 million, can’t access the internet at home, said Linda Darling-Hammond, president of the California State Board of Education, during a press conference with Newsom and Thurmond last Wednesday. The issue is even more acute in rural parts of the state: Only about a third of California households in rural areas are subscribed to internet service.”

[“Poll: California school closures due to coronavirus hit minorities, poor the hardest”](#) (2020)

An early April poll in California of 1,200 parents across the state found that nearly 40% of low-income families lack internet access at home, compared to about 16% of households overall. And about half of low-income families lack devices at home to access distance learning.

[“Remote learning exposes racial and economic divide in LA County, say USC researchers”](#) (2020)

“Galperin and his team examined household availability of two key components of distance learning: a residential internet connection and a desktop or laptop computer. The research showed one in four K-12 households in LA County lacks those resources, according to the statement. The problem worsens among Los Angeles Unified School District students, as one in three live in households without high-speed internet or a computer. Regardless of income, students of color are less likely to have the technology resources for distance learning. “

[“Getting free internet is hard for poor students despite provider promises, survey finds”](#) (2020)

“Despite promises of help, families in the low-income neighborhoods of Watts, Boyle Heights and South Los Angeles have struggled to get online, with at least 16% of students lacking basic internet access, according to a survey of public school families in those communities released Wednesday by the nonprofit Partnership for Los Angeles Schools.”

Philadelphia

[“Citing equity concerns, Philadelphia district will not offer remote instruction during shutdown”](#) (2020)

In March, the Philadelphia School District “announced that it will not offer remote instruction during the coronavirus shutdown because of equity concerns in a city where many students lack computers or high-speed internet at home. The *Associated Press* reports that school districts nationwide have been wrestling with the same issues as they explore ways to keep children engaged as classrooms are shuttered for weeks or longer.”

Chicago

[“1 in 3 Chicago Public Schools students start remote learning without computers”](#) (2020)

Special Needs Students

[“This Is Schooling Now for 200,000 N.Y.C. Children in Special Education”](#) (2020)

“Now, the already-strained special education system must transform how they are educated, which includes crucial services — like speech, occupational and physical therapy — that are extremely difficult and in some cases impossible to translate online. The city has already encountered some stark realities about remote special education in the first weeks of distance learning. Interviews with about two dozen educators and parents showed wide agreement that, even if remote learning were executed perfectly, students with special needs would fall behind academically and socially.”

[“Disability rights groups, school administrators spar over possible changes to special education laws”](#) (2020)

As U.S. Secretary of Education Betsy DeVos is considering waiving the rights of students with disabilities to allow online education, disability rights advocates fear that waivers will become permanent and lead to an erosion of a federal civil rights law that’s been in place for more than 45 years.

[“To Access Online Services, New Jersey Students With Disabilities Must Promise Not To Sue”](#) (2020)

“If the parent refuses to sign it, they will absolutely withhold services.”

[“Four Big Questions About Teaching Kids With Special Needs In The Age Of Coronavirus”](#) (2020)

“For students with disabilities, these are uncertain times. Their parents, teachers and school districts now face daunting questions about how to handle the crisis.”

English Language Learners

[“For NYC students learning English, remote learning can come with steep barriers”](#) (2020)

[Supporting English Learners through Technology: What Districts and Teachers Say about Digital Learning Resources for English Learners](#) (2019)

This comprehensive U.S. Department of Education study highlights barriers for English language learners (see Chapter 4).

[“Imagine Online School in a Language You Don’t Understand”](#) (2020)

Remote schooling poses a special challenge for families who are not fluent in English. About five million American schoolchildren are classified as English-language learners, meaning they lack fluency, and even more come from homes where their parents speak a different language. Nearly a quarter of immigrants and their American-born children live in poverty, and Hispanic immigrants, in particular, are less likely to have access to a computer or home internet service. Even before the coronavirus outbreak, English-language learners were at high risk for chronic absenteeism.

Tools

[Overcoming the Distance: Promising Practices to Center Equity in Implementing Distance Learning](#) (2020)

The Advancement Project: “The best practices and recommendations outlined in this policy brief provide a roadmap for the California Department of Education:...By following this map, we can retool our system to meet this moment of crisis while also building strong, sustainable practices for the future that center equity at the heart of our education system.”

[NEA Policy Statement on Digital Learning](#) (2013)

“The appropriate use of technology in education—as defined by educators rather than entities driven by for-profit motives—will improve student learning, quality of instruction, and education employee effectiveness, and will provide opportunities to eradicate educational inequities.”

[Stop the Pandemic’s School Pushout](#) (2020)

The Dignity in Schools Campaign: “Through Dignity In Schools Campaign California, we dare to imagine and fight for an education system that loves our children the way we do. We demand that districts immediately provide additional resources (including compensatory) to student populations who are most impacted by disparities to remedy gaps in our access to emergency education compared to privileged students. Impacted student populations include: Black, Brown and Indigenous students, students with disabilities, English-language learners, homeless and foster youth and their families, and students in alternative education programs (including continuation schools and schooling received by incarcerated youth).”

Edtech Privacy

One of the biggest challenges is how to protect student and educator privacy—both from the companies providing the services and the tools and from third parties stealing information. Digital privacy is a societal issue, but as educators confront the new reality of more and more digital learning, it is an extremely pressing issue that needs to be confronted. Below are just a few of the stories and studies exploring these major issues to the use of education technology.

[Asleep at the Switch: Schoolhouse Commercialism, Student Privacy, and the Failure of Policy Making](#) (2017)

A 2017 NEPC report warns: “Digital technologies used in schools are increasingly being harnessed to amplify corporate marketing and profit-making and extend the reach of commercializing activities into every aspect of students’ school lives. In addition to the long-

standing goal of providing brand exposure, marketing through education technology now routinely engages students in activities that facilitate the collection of valuable personal data and that socialize students to accept relentless monitoring and surveillance as normal.”

[Education Technologies: Data Collection and Unsecured Systems Could Pose Risks to Students](#) (2018)

This 2018 public service announcement from the Federal Bureau of Investigation (FBI) begins: “The FBI is encouraging public awareness of cyber threat concerns related to K-12 students. The US school systems’ rapid growth of education technologies (EdTech) and widespread collection of student data could have privacy and safety implications if compromised or exploited.’ It goes on to detail examples of massive Ed Tech breaches.”

[Most Ed-Tech Products Don't Meet Minimum Criteria in Their Privacy Policies, Report Finds](#) (2018)

Common Sense found what it called “a widespread lack of transparency, as well as inconsistent privacy and security practices” in its three-year review of how student information is collected, used, and disclosed on some of the most popular applications and services in education technology.

[“New Mexico Sues Google Over Children’s Privacy Violations”](#) (2020)

“The consequences of Google’s tracking cannot be overstated: Children are being monitored by one of the largest data mining companies in the world, at school, at home, on mobile devices, without their knowledge and without the permission of their parents.”

[“Gaggle Knows Everything About Teens And Kids In School”](#) (2019)

“Gaggle monitors the work and communications of almost 5 million students in the US, and schools are paying big money for its services. Hundreds of company documents unveil a sprawling surveillance industrial complex that targets kids who can’t opt out.”

[Spying on Students: School-Issued Devices and Student Privacy](#) (2017)

A 2017 Electronic Frontier Foundation report: “Students are using technology in the classroom at an unprecedented rate. One-third of all K-12 students in U.S. schools use school-issued devices.¹ Google Chromebooks account for about half of those machines.² Across the U.S., more than 30 million students, teachers, and administrators use Google’s G Suite for Education (formerly known as Google Apps For Education), and that number is rapidly growing... However, educational technology services often collect far more information on kids than is necessary and store this information indefinitely. This privacy-implicating information goes beyond personally identifying information (PII) like name and date of birth, and can include browsing history, search terms, location data, contact lists, and behavioral information. Some programs upload this student data to the cloud automatically and by default. All of this often happens without the awareness or consent of students and their families. In short, technology providers are spying

on students—and school districts, which often provide inadequate privacy policies or no privacy policy at all, are unwittingly helping them do it.”

Tools

[Children’s Data Privacy During COVID-19 Closures: 10 Questions to Ask](#) (2020)

This useful NEPC report explains that threats to privacy including identity theft, harassment, and extortion means that effective data security practices are thus essential to prevent crimes that are facilitated by the collection and storage of data from children. The report lists 10 questions parents should be asking about the use of digital technology.

[Educator Toolkit for Teacher and Student Privacy](#) (2018)

“Our new educator toolkit is a comprehensive guide to help teachers understand the increased threats to education-related data made worse by the rapid adoption of education technology. It is designed to support their efforts to become responsible digital citizens by providing strategies and best practices to minimize the disclosure of personal data and protect the privacy of their students as well as their own.”

[Parent Toolkit for Student Privacy](#) (2017)

“We offer clear guidance on what privacy rights your child has in federal law, what to look for in school vendor’s Privacy Policies, and tips on how to advocate for your school or district to adopt best practices in ensuring your child’s sensitive data isn’t breached or abused.”

[“Those ‘Free’ Remote Learning Apps Have a High Cost: Your Student’s Privacy”](#) (2020)

This ACLU post recommends how policymakers can make safe use of edtech tools: “The good news is that Americans and their governments should not—and do not have to—feel trapped into choosing between students’ education and privacy rights. There is a simple, four-part approach governments and school districts can and should take when accepting (or continuing to use) the ‘free’ remote learning platforms EdTech companies like Google and GoGuardian have offered. If these EdTech companies are truly acting in the best interests of students and teachers here, they shouldn’t object at all.”

[A model Google contract that has strong student privacy protections](#) (2020)

Parent Coalition for Student Privacy is recommending this contract from an upstate New York district as a model Google G-suite contract to protect the privacy of students.

[Five Principles to Protect Student Privacy](#)

Principles from the Parent Coalition for Student Privacy.

The Edtech Industry

The edtech industry is a multi-billion dollar, multi-faceted, rapidly changing sector. The COVID-19 pandemic and the rush to distance learning is creating even more opportunities for for-profit companies to sell services and products to school districts, educators, and parents.

However, the purpose of public schools is to provide a well-rounded education and help develop informed and engaged citizens while providing a safe place, meals, emotional support, socialization, and more to all students. The goal of private companies is to maximize profits.

As we move towards more use of private goods and services, how do we effectively maintain democratic, public control over our schools and the educations our kids receive? This is a critical question that we all have to grapple with. Below is just a little background information on some of the edtech industry's funders and big players. Understanding these companies and their histories will help all of us shape the necessary policies to safely use digital technology while preserving our democratic education.

Funding/Investors

[Who's Funding Education Technology?](#)

A list of resources to track edtech funding through 2018: “Who's investing in education technology? What are the relationships between investors and startups? Between the business of education and education politics and policies? What do we know about the relationships among companies, entrepreneurs, investors, institutions, and politicians?”

[Personalized Learning and the Digital Privatization of Curriculum and Teaching](#) (2019)

NEPC looked at the staggering amounts of money in the edtech industry. “In 2017 and 2018, venture capitalists made an average of 16 investments in education technology each month. The median investment was \$5.1 million, and the average size was \$22.4 million, putting the average monthly investment at over \$330 million. Finally, the investment bank Berkery Noyes counted a total of 247 mergers and acquisitions in the K-12 education technology sector in 2015-2017. It reported the majority of these deals resulting from companies moving to strategically integrate their products or gain competitive advantage.”

[Tech for Learners Resources](#)

A listing from an advertising website for edtech companies.

Facebook/Summit

[“Facebook is building free educational software”](#) (2015)

In 2015, Facebook entered the edtech industry by announcing a partnership with a network of charter schools to build educational software to be offered for free to public schools.

[“Silicon Valley Came to Kansas Schools. That Started a Rebellion.”](#) (2019)

The resistance in Kansas is part of mounting nationwide opposition to Summit, which began trials of its system in public schools four years ago and is now in around 380 schools and used by 74,000 students. In Brooklyn, high school students [walked out in November 2018](#) after their school started using Summit’s platform. In Indiana, Pennsylvania, after [a survey by Indiana University of Pennsylvania found](#) 70 percent of students wanted Summit dropped or made optional, the school board scaled it back and then voted in April 2019 month to [terminate it](#). In 2017 in Cheshire, Connecticut, the program was [cut after protests](#).

K-12 Inc.

[K12 Inc.](#)

K12 Inc., one of the largest edtech companies, says on its website: “K12 Inc. (NYSE: LRN) takes a personalized approach to education by removing barriers to learning, reaching students where they are, and providing innovative, high-quality online and blended education solutions, curriculum, and programs to charter schools, public school districts, private schools, and families. In total, this work serves more than 70 public and private schools, more than 2,000 school districts, and students in all 50 states and more than 100 countries.”

[Virtual Public Education in California: A Study of Student Performance, Management Practices and Oversight Mechanisms at California Virtual Academies, a K12 Inc. Managed School System](#) (2015)

This In the Public Interest report examines management practices and student academic performance at California Virtual Academies (CAVA), the largest provider of virtual public education in California. Our research shows that students at CAVA are at risk of low-quality educational outcomes, and some are falling through the cracks entirely, in a poorly resourced and troubled educational environment

[“From Junk Bonds to Junk Schools: Cyber Schools Fleece Taxpayers for Phantom Students and Failing Grades”](#) (2013)

A glimpse into K12 Inc.’s history and business practices.

For more detailed information on K12, Inc.

- [A Virtual Failure](#) (2017)
- Sourcewatch: [K12 Inc.](#)

Pearson/Connections Learning

[Pearson Connections Learning](#)

Pearson’s Connections Learning, one of the biggest edtech companies, says of itself: “In this era of tight budgets and teacher shortages, Connections Learning helps you provide K–12 online academic solutions for your communities by offering a range of programs that can be customized to fit each student’s needs, expand limited school resources, and address your staffing challenges.”

[“Pearson Education Can Run, But It Cannot Hide”](#) (2014)

“Pearson has tried to give it a positive spin, but the reality is that Pearson the for-profit company is closing down its partner not-for-profit Pearson Foundation after having trouble with the law in both New York and California. In 2013, the Pearson Charitable Foundation paid \$7.7 million in fines in New York State to reach an out-of-court settlement after the Office of the State Attorney General found the Foundation had broken state laws by generating business for the for-profit company.”

[“Education company under fire for ‘racist’ nursing textbook](#) (2017)

“Pearson, the world’s biggest education company, has come under fire this week for a page in one of its nursing textbooks—which features racist stereotypes about minorities.”

[“Educators Carefully Watch Pearson as It Moves to Sell K-12 Curriculum Business”](#) (2018)

“The London-based company announced recently it will sell off its K-12 U.S. print and digital curriculum business to focus on assessments and virtual schools.”

Google

While Google is the largest edtech company due to its aggressive marketing practices, it has been plagued with charges (and often admitted) that it has been violating student and educator privacy rights and harvesting data. While not the only company to do this, Google’s pervasiveness in education raises the question of how to have real democratic control over our childrens’ education.

[“How Google Took Over the Classroom”](#) (2017)

“The tech giant is transforming public education with low cost laptops and free apps. But schools may be giving Google more than they are getting.”

[“Google Is Fined \\$170 Million for Violating Children’s Privacy on YouTube”](#) (2019)

“Google agreed ... to pay a record \$170 million fine and make changes to protect children’s privacy on YouTube, as regulators said the video site had knowingly and illegally harvested personal information from children and used it to profit by targeting them with ads.”

[“Gaggle Knows Everything About Teens And Kids In School”](#) (2019)

“Gaggle monitors the work and communications of almost 5 million students in the US, and schools are paying big money for its services. Hundreds of company documents unveil a sprawling surveillance industrial complex that targets kids who can’t opt out.”

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Koch Industries

While Koch Industries has not been a player in the edtech field, multiple Koch-funded advocacy organizations have strongly advocated for [privatizing public education](#). In February 2020, Koch Industries purchased a cloud computing company that advertises its services to school districts.

[“Koch Industries closes nearly \\$13B Infor acquisition”](#) (2020)

Koch Industries announced in February 2020 that it had closed on [the acquisition of Infor](#), a cloud tech computing company. Cloud computing is a new field for Koch Industries. This article from the Infor website might help explain why Koch felt this was a wise investment: [“How Cloud-Based Computing Empowers K-12 School Districts to Succeed.”](#)