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# tools for educators



screens in schools  
**action kit**



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\*For your convenience, each document in this Action Kit has only been listed once. However, these documents also fall under Tools for Educators. For a printable version of each full section, go to [commercialfreechildhood.org/print-action-kit](http://commercialfreechildhood.org/print-action-kit).

## Introduction to Educator Resources

This section of the Screens in Schools Action Kit was created with the goal of helping guide teachers toward taking a more active role in questioning their district leaderships' overreliance on digital devices and computer-based instruction. This is often difficult for teachers to do, as raising questions can brand one as a “malcontent” or “foot-dragger.” (Even with union protections, many teachers fear being singled out for exercising their basic right of free speech.) So, for now, parents are leading the way in trying to slow down the edtech juggernaut. Teachers can support them through joint presentations at PTA meetings and the like. We can also stand behind those parents who are requesting reductions in our school's screen use or are seeking to opt their children out entirely.

There are signs, however, that teachers are beginning to weigh in more forcefully on the issue. For example, in August 2019, *NEA Today* published an excellent [article](#) challenging the personalized learning trend. Some NEA state affiliates, such as the Massachusetts Teachers Association, have taken steps to bring edtech concerns to its membership, and, in some cases, into collective bargaining. Also, AFT president Randi Weingarten has [spoken out strongly](#) about the de-professionalization of teaching, criticizing the incessant, computer-based testing teachers are now required to administer.

### Background

Teachers know that the “reform the curriculum” pendulum swings back and forth many times over the course of a teaching career – driven by fads, fears of falling behind the neighbors in standardized tests, and the marketing drive of the education industry, among other factors. Teachers also know that durable gains in students' learning come not through curriculum innovations, but rather through the positive influences of dedicated, caring teachers who are able to make a personal connection to a child and spark their love of learning.

Enabled by sharply lower prices for hardware, and improvements in AI, Wi-Fi, and cloud computing technology, no trend has overtaken schools as rapidly and thoroughly as the push for education technology (edtech) in our K-12 schools, and the associated trend toward computer-based instruction – dubbed, misleadingly, “personalized learning.” More importantly, these trends have also been fueled by the enormous marketing power of the largest corporations in the world including Google, Apple, Facebook, and Amazon, which see K-12 education as a multibillion dollar profit-making opportunity.

### Problems Associated with Excessive Screen Time in Schools

The edtech companies' main pitch is that schools need to prepare students for 21st century jobs; and this is a hard pitch for both administrators and parents to question. But schools *need* to be encouraging questions, for the following reasons:

### Student Learning:

While the marketers come armed with self-produced studies proclaiming their products' effectiveness, long-term controlled studies have shown that the quantity and quality of student learning is similar, if not lower, in classrooms that rely heavily on computer technology. And students' future success will depend anyway on having gained "soft" skills such as critical thinking, written and oral communication, and group work.

### Student Health:

Schools have a duty of care for students while they are at school. They are legally obligated to provide a safe learning environment, and that must include the safe use of digital devices, which have been shown to cause eye and musculoskeletal problems. Yet most schools have done little to provide the equipment and training to students and teachers about safe use.

### Student Psychological and Social-Emotional Wellbeing:

The use of digital technology in classrooms cannot be addressed in isolation from students' home use, which, in many cases, is already excessive. By assigning homework online, teachers can – unwittingly – undermine parents or guardians who wish to monitor and control children's home use as a way to protect them from negative health effects, gaming addiction, and screen-related anxiety and depression.

### (De-)Personalized Learning:

Computer-based "personalized" learning promises to teach children at their own pace, thus meeting learners exactly where they are. Students are constantly assessed, usually through multiple choice questions, and fed new lessons and assessments once mastery has been demonstrated. This is anything but "personal," as it reduces students' interaction with teachers and peers, leaving some students staring at computer screens for hours per day.

### Student and Teacher Privacy and Misuse of Data:

The growing use of technology by schools, accelerated by the recent expansion of Cloud computing, creates serious concerns about children's privacy and the commercialization of the data collected by edtech platforms and apps. Many technology companies collect far more information on children than is necessary and store the data indefinitely.

### De-professionalization and Loss of Teaching Jobs:

As schools increasingly rely on computers to instruct students, they can employ fewer teachers, and/or replace them with paraprofessionals, whose main role is to ensure that students remain on (screen-based) task. This is especially worrisome in the fiscal austerity setting in which most districts currently operate.

### Distractions Caused by Device Use in Class:

Many teachers must now contend with the distractions created by students' use of digital devices for non-academic purposes. Studies show that the off-task use of digital devices distracts not only that student, but also all those within sight of the device.

**Problems with Classroom Management:**

Managing the classroom, many teachers contend, is becoming harder and harder. One factor contributing to children's apparent increased impatience and decreased focus is the stimulating effects that excessive screen time has on children's brain chemistry. Both excessive screen use and associated sleep deprivation can mimic and exacerbate conditions such as ADHD.

**Commercialization and Privatization:**

Robust curriculum, guided by and delivered with teachers' professional judgment, is replaced by predetermined computer algorithms and incessant testing, effectively turning over decisions about pedagogy and content to commercial interests.

## Educator Commentaries

*While parents are at the forefront of the battle against edtech overuse, many teachers are equally concerned about how edtech can harm students' health and learning, as well as edtech's impact upon the teaching profession itself. These recent commentaries and blog posts provide insight into their perspectives.*

### [What Does "Personalized Learning" Even Mean?](#)

*Curdmudgucation Blog*

August 10, 2019

**Reasons to read:** In this blog, Peter Greene, a former middle and high school English teacher, critically assesses the term “personalized learning,” which marketers usually claim is the goal of educational technology. In fact, as Greene points out, the term has many meanings, and technology introduction often results in the *de-personalization* of learning as students spend less time interacting with peers and teachers.

### [Top 7 Ways Technology Stifles Student Learning in My Classroom](#)

*Gadfly on the Wall Blog*

July 31, 2019

**Reasons to read:** Steven Singer, a middle school language arts teacher from Pennsylvania, outlines the ways that edtech undermines public education.

### [EdTech Utopia is Over](#)

*EducationNext*

April 24, 2019

**Reasons to read:** This is a thorough, hard-hitting critique of the edtech industry by a former teacher and charter school administrator Steven F. Wilson.

### [Give Us Personalized Learning without the Algorithm](#)

*Renegade Teacher Blog*

April 21, 2019

**Reasons to read:** This insightful blog by a Detroit-area high school social studies teacher puts edtech in the context of other education reform initiatives, predicting it will be used to promote standardized testing and replace teachers with tech. He contrasts the technology-first approach pushed by the Chan-Zuckerberg Initiative to the methods employed in Zuckerberg's own schooling at Phillips Exeter Academy.

### [Lies You Have Been Told About Educational Technology](#)

*Wait Until 8th Blog*

March 6, 2019

**Reasons to read:** Matt Miles and Joe Clement, award-winning high school teachers in Virginia and co-authors of the book, *Screen Schooled*, summarize the myths that have allowed the edtech industry to gain a foothold in K-12 education.

[Tech Companies Are Buying Their Own Education Research. That's a Problem](#)

*Edweek*

February 6, 2019

**Reasons to read:** Matt Miles focuses on the health and social-emotional consequences of the drive to promote edtech, despite the lack of evidence that it actually improves learning outcomes. Miles highlights how much of the hype behind edtech is based on industry-sponsored studies of dubious value.

[Personalized \(Online\) Learning Fails at Classroom Dynamics and Socialization](#)

*Nancy Bailey's Education Website*

November 24, 2018

**Reasons to read:** Nancy Bailey, a former middle and high school special educator, writes about the high socialization costs of moving education online.

[I gave my students iPads — then wished I could take them back](#)

*The Washington Post*

December 2, 2015

**Reasons to Read:** In this excellent op-ed, Launa Hall, a DC-area third grade teacher, reflects on how a new 1:1 iPad program had her students isolated on screens rather than connecting with each other. She, like many teachers, appreciates the power of technology but worries that it has too much power over young children, and is concerned about the loss of communication skills that often accompanies screen overuse.

## Selected Articles about Edtech and Teaching

### ***A Union Perspective:***

[Has the Personalized Learning Hype Worn Off?](#)

Tim Walker, *neaToday*. August 19, 2019

### ***Loss of Teaching Jobs and Professionalism:***

[Forty Percent of Elementary School Teachers' Work Could Be Automated By 2030, McKinsey Global Institute Predicts](#)

Benjamin Herold, *Education Week*, June 4, 2019

[How Google's Former China Chief Thinks AI Will Reshape Teaching](#)

Betsy Corcoran, *EdSurge*, December 11, 2018

[5 Risks Posed by the Increasing Misuse of Technology in Schools](#)

Diane Ravitch, *EdSurge*, December 29, 2017



***Online Homework Issues:***

[How I lost the screen-time battle with my kids](#)

Joe Mathews, *SF Chronicle*, May 5, 2019

[Online Homework Conflicts with Parental Limits on Kids' Screen Time](#)

Cait Etherington, *ELearning* newsletter, January 9, 2019

Andover Education Association

## Educational Technology Report: A Critical Analysis of Ed Tech in the Classroom 2018/2019

### Executive Summary:

Over the past decade the proliferation of technology in Andover's classrooms has rapidly changed the dynamics of the learning environment. A veritable deluge of electronic toys, tablets, laptops, books, e-readers, interactive games, and applications has become inextricable from students' daily lives. Much of this technology is specifically marketed to young people, and much of it serves to harvest user data for private sector marketing and research purposes. The considerable effects of this technological eruption, and its intersection with the accumulation of data and individual information, is changing the experience of education before our eyes. Additionally, what seems clear from the research is that the ubiquity of these technologies in our learning environments poses serious health and safety implications for both students and educators in schools.

The Andover Education Association charged the Technology Study Committee with researching how Andover Public Schools utilizes technology, how AEA members experience technology, what research exists on the use of various technologies on student learning, and on the physical and psychological impact of technologies on students and educators.

We first solicited general feedback from faculty regarding three essential questions:

1. **What concerns do you have about the current technology initiatives and how they impact teaching and learning?**
2. **What concerns do you have regarding the roll-out and implementation of technology in the district?**
3. **What do you see as the strengths of technology in instruction and student learning?**

After reviewing this feedback, we crafted a survey that categorized and pinpointed issues that emerged across the district. We received a statistically significant sample (about 100 respondents/approximately 15-18% of our membership) representing every level of instruction. Thirty percent of respondents were Educational Support Personnel. Among other data, the survey reveals particular concern regarding how student wellness is impacted by technology in the classroom. The complete survey data can be found in the Appendix of this report. Some highlights:

- 72.8% of respondents "agree" or "strongly agree" with the following statement: **"I am concerned about the amount of screen time students are exposed to at school."**
- 81.5% of respondents "agree" or "strongly agree" with the following statement: **"I am concerned about the effect screen time has on the social/emotional health of students."**
- 70.6% of respondents "disagree" or "strongly disagree" with the following statement: **"I am satisfied that adequate safeguards are in place to protect students' social and emotional health as technology use increases."**

**Included in the committee’s report are the following findings:**

- Excessive screen time is linked to an increase in visual problems, anxiety, and depression among children and adolescents.
- Extensive use of a touch-screen tablet has a negative effect on the fine motor development of children age 5 and under.
- The academic effectiveness of online and blended learning programs on K-12 students is negligible.
- Cloud file-sharing programs provided through APS enables Google to mine data from students and faculty members without due compensation for their intellectual property.

We hope the following analyses and recommendations open a broader and deeper dialogue between the faculty, management, and the community-at-large regarding the understudied, but nevertheless ubiquitous, impacts of educational technology in the classroom.

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## Student Wellness and Learning

As technology has rapidly expanded into almost every conceivable facet of our day-to-day lives, the same holds true for many K-12 classrooms in the United States. While the debate about smartphones and screen time in schools rages both in the U.S. and abroad – one notable European legislature overwhelmingly supported banning students’ access to smartphones during the school day<sup>1</sup> – Andover Public Schools has opted to increase student exposure across-the-board despite evidence indicating the alarming risks of technology to both student health and achievement. In particular, our Bring Your Own Devices (BYOD) initiative has continued to bulldoze ahead with little to no consideration of the potentially harmful effects of ever-increasing student exposure to screen time both at school and at home. In light of an abundance of research that indicates serious cause for concern regarding technology use by young people, it would behoove the Andover Public Schools to conduct a thorough, multilateral, and meaningful review of its technology initiatives.

Andover’s BYOD initiative has been supported under the auspices of “aim[ing] to enhance student learning by creating a personalized, student centered learning environment where every student has a laptop to use in school and at home. Students will leverage these tools in the classroom to learn how to collaborate, analyze data, and be effective members of a team.”<sup>2</sup> In fact, if one were to peruse the *iAndover BYOD Pilot Report* from 2015, the only noted concerns were related to troubleshooting potential network connectivity issues and the financial burden placed on families. Nowhere in this document is there any reference to student health and well-being outside of a passing comment on student complaints re: the weight of their devices. There is, however, an abundance of anecdotal commentary about the purported educational benefits of an increased technology presence at the middle and high school levels. This seems rather odd when one considers that 95% of school administrators across the country feel that students spend too much time on screens at home.<sup>3</sup>

A cursory exploration of recent research indicates that an over-exposure to technology in both academic and social contexts can actually do more harm than good. A 2014 study of 450 undergraduates conducted at West Point indicated a statistically significant decrease in students’ performance on exams in classrooms where laptops were allowed<sup>4</sup> compared with classes that did not allow laptops. A more recent undergraduate study from 2017 indicated that an over-reliance on devices/screens as a method of reading leads to poorer student comprehension, particularly with specific textual details.<sup>5</sup>

The impact of technology on students’ social and emotional development is considerably more concerning than its effects in an academic context. A 2014 study of college students who had to go without using their phones found that the heaviest phone users experienced the greatest spike in self-reported levels of anxiety.<sup>6</sup> Another 2014 study conducted by the University of California, Los Angeles

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<sup>1</sup> Alissa J. Rubin and Elian Peltier, “France Bans Smartphones in Schools Through 9th Grade. Will It Help Students?” *The New York Times*. Sept. 20, 2018. <https://www.nytimes.com/2018/09/20/world/europe/france-smartphones-schools.html>

<sup>2</sup> [https://www.aps1.net/DocumentCenter/View/6491/iAndover1to1-Learning-Initiative\\_Final-06-11-15?bidId=](https://www.aps1.net/DocumentCenter/View/6491/iAndover1to1-Learning-Initiative_Final-06-11-15?bidId=)

<sup>3</sup> Christina A. Samuels, “School Principals Overwhelmingly Concerned About Children’s Screen Time,” *Education Week*. April 17, 2018. <https://www.edweek.org/ew/articles/2018/04/18/school-principals-overwhelmingly-concerned-about-childrens-screen.html>

<sup>4</sup> Susan Payne Carter, Kyle Greenberg, and Michael Walker, “The Impact of Computer Usage on Academic Performance: Evidence from a Randomized Trial at the United States Military Academy” SEII Discussion Paper #2016.02, May 2016. <https://seii.mit.edu/research/study/the-impact-of-computer-usage-on-academic-performance-evidence-from-a-randomized-trial-at-the-united-states-military-academy/>

<sup>5</sup> <https://www.tandfonline.com/doi/abs/10.1080/00220973.2016.1143794?journalCode=vjxe20>

<sup>6</sup> <https://www.psychologytoday.com/us/blog/rewired-the-psychology-technology/201706/the-anxiety-epidemic>

found that young people were spending more time than ever before in front of screens, and that it may be limiting their ability to recognize emotions.<sup>7</sup> Young people today are also less socially active in person than previous generations, and shockingly, 12th graders in 2015 spent even less in-person time with their friends than 8th graders in 2009.<sup>8</sup> A study from The National Institute on Drug Abuse found that, “Teens who spend more time than average on screen activities are more likely to be unhappy, and those who spend more time than average on non-screen activities are more likely to be happy.... Eighth-graders who spend 10 or more hours a week on social media are 56 percent more likely to say they’re unhappy than those who devote less time to social media... those who spend six to nine hours a week on social media are still 47 percent more likely to say they are unhappy than those who use social media even less.”<sup>9</sup> A 2017 study from Florida State University found “compelling evidence that the more time teenagers spend on smartphones and other electronic screens, the more likely they are to feel depressed and think about, or attempt, suicide.”<sup>10</sup> When viewed comprehensively, these studies and findings at the very least indicate a need for a much more in-depth examination of the district’s technology policies and procedures, as well as the short- and long-term effects of technology use on student and faculty social/emotional and physical health.

### **Recommendations**

- 1. Screen time guidelines and limits for the school day should be established at all levels:** These should be grounded in sound academic and medical research, and clearly communicated to all stakeholders.
- 2. APS technology initiatives must be thoroughly vetted by a multilateral committee of stakeholders that includes parents, students, teachers, and administrators before they are implemented.**
- 3. APS technology initiatives should support our stated mission of “providing creative and quality instruction that educates the whole child so that they are prepared for success in college, career & life.”**
- 4. APS technology initiatives should be regularly reviewed to assess:** A) The effects on student academic achievement, and B) the effects on students’ social and emotional health, as well as compatibility with the district’s educational mission statement.
- 5. APS technology initiatives should be supported by sound academic and medical research, as well as demonstrate a measurable benefit to both student academic achievement and student/faculty social and emotional health.**

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<sup>7</sup> <https://www.sciencedirect.com/science/article/pii/S0747563214003227>

<sup>8</sup> <https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/>

<sup>9</sup> Ibid.

<sup>10</sup> <https://www.sciencedaily.com/releases/2017/11/171130170212.htm>

# **Resolutions on Edtech**

## **2019 Annual Meeting**

### **Massachusetts Teachers Association (MTA)**

*The Massachusetts Teachers Association (MTA) and other associations have begun to speak out and educate their members about some of the negative impacts of educational technology.*

*The MTA passed the following resolutions in relation to edtech at its Annual Meeting in May 2019. (Additions to existing resolutions are underlined.)*

#### **Revised B-30**

##### **B-30 TECHNOLOGY IN EDUCATION**

The Massachusetts Teachers Association recognizes that access to new technology is essential to the expansion of knowledge and the development of new skills. Therefore, the MTA supports the appropriate use of technology in education and urges school committees and governing boards of higher education to bargain with local associations and chapters to develop policies regarding the use of such technology. The MTA believes that educators and students should be given the opportunity to explore and use the potential of emerging technologies under conditions that ensure their health and safety. Filtering of Internet websites must maintain a balance between the protection of students and the open flow of information.

The MTA also believes that every student should have the opportunity to experience technology education and that all educational professionals should have the opportunity for training in their schools in utilizing educational technology in their classrooms. Furthermore, the MTA believes that instructional technology should be used to support, but not to supplant, the classroom teacher educator.

The MTA believes that the use of digital technology in classrooms cannot be addressed in isolation from students' home use. The MTA encourages a holistic approach in which educators and administrators work with parents or guardians wishing to protect children from the dangers of excessive screen use, including health effects, gaming addiction and screen-related anxiety and depression.

The MTA encourages districts to enact policies that result in limiting the distractions caused by smartphones and other digital devices, including school-issued devices, in schools.

The MTA also encourages schools to moderate the use of online homework and online textbooks in order to help students avoid excessive screen exposure.

#### **Revised C-12**

##### **C-12 DIGITAL TECHNOLOGY COMPUTER SAFETY**

The Massachusetts Teachers Association strongly urges that school committee, boards of trustees and the governing boards of higher education governing bodies throughout Massachusetts take appropriate steps to ensure the health and safety of students and school personnel in using computers in classrooms and offices.

The MTA believes that measures should be taken to avoid the potential of harmful effects of computer usage such as using digital technology, including radiation, eye strain, muscular and neurological disorders, as well as social, emotional and psychological impacts.

Whenever public school or higher education systems require substantial use of electronic screen devices, such requirements should be widely publicized and debated by educators, school health officials, parents or guardians, and education governing bodies.

**Rationale provided by Education Policy Committee:**

*Growing children are not just small adults; they are developing in specific stages and at different rates, without a full set of adult physical or psychological capabilities. As such, children are more vulnerable to the hazards posed by digital devices. Students will suffer more serious damage due to those vulnerabilities, because the related health risks are cumulative and the schools are demanding use of devices at ever-earlier ages.*

*Because the schools are requiring daily device use from students, starting at a very young age, and continuing throughout these developmentally critical stages, extreme caution should be applied when demanding the use of school equipment – equipment that has been regulated for adults by OSHA since the 1990s.*

*New technologies poised for classroom use – including virtual reality tools and computer-based learning applications – will bring even higher levels of risk to Massachusetts students. It is within this context of increased digital exposures that policy makers must make responsible, well-informed, regulatory and purchase decisions to protect students from known – and future – classroom hazards.*

**Revised C-15**

**C-15 ADVERTISING IN THE SCHOOL**

The Massachusetts Teachers Association believes that schools provide an educational setting that should not be influenced by outside commercial interests. Therefore, the MTA is strongly opposed to providing access to public school facilities for commercial gain.

The MTA believes that any introduction of technology must be undertaken in ways that limit commercial access to students and their data wherever and whenever possible.

# MORE SCREEN TIME?

From the folks  
who brought  
you...

Charter schools!

High-stakes  
testing!

Teacher  
evaluations!

State takeovers!

Empowerment  
zones!



**It's New. It's Hot. It's backed by Bill Gates, Mark Zuckerberg, and all those other supercool champions of the working people.**

**It's *personalized* learning!**

**Who knew? Sitting kids down in front of a computer and having them follow the orders of its algorithm is (in corporate-reform-speak) “personalized.”**

The former head of Google China has put forward his vision:

*“In a new form that we are investing in, in China, which is a 1-to-1,000 student-teacher ratio. ... In the 1-to-1,000 classroom, we also have teaching assistants. ... The local teachers can be trained to be teaching assistants, so a job that’s much easier for each teacher to learn to do. ... So that kind of combination should replace the current type of lectures that people get.*

*If you think about the job of a teacher today, we just took away the lecture part and turned it into an assistant job. Teachers also have to take attendance. AI [artificial intelligence] can recognize students and the way in which they participate, and it can certainly save time from taking attendance. Now, some parents will start to worry, say, ‘Wait a minute, I don’t want my kids captured on video all the time.’ But the benefit is that the system will know the comprehension level of the students, not just by how they do on exam.”<sup>1</sup>*

The high-flyers in the tech industry want this for the kids you teach.

But they don’t want it for their kids: “Bill Gates banned cellphones until his children were teenagers, and Melinda Gates wrote that she wished they had waited even longer.”

The former editor of *Wired* explained: “On the scale between candy and crack cocaine, it’s closer to crack cocaine. ... We thought we could control it. And this is beyond our power to control. This is going straight to the pleasure centers of the developing brain.”<sup>2</sup>

End-of-year high-stakes tests will be replaced by testing and monitoring of students every day. The data from all those daily tests will belong to the commercial enterprise that provides the computer setup and software programs. But if they sell the data from your third-grader it will only be for the most noble of learning purposes, such as developing better software and making available helpful products. They promise.<sup>3</sup>

This doesn’t even mention the health effects, mental and physical, of kids spending hours and hours staring at a screen. Or the lack of human group interaction and development of social skills.

It sounds crazy and stupid beyond belief. But the ed “reformers” see it as the next big thing and insist on calling screen time “personalized.”

As educators, we have a responsibility to address these issues, and many parents want to work with us in doing so — they are worried about how much time their kids spend on screens and don’t want the schools pushing more of that. (Or helping big tech companies collect data on their children.)

As a union, the MTA is taking up these issues. The MTA Education Policy and Practice Committee is developing resources to help educators and locals tackle the issue of screen time.



**We can help your local organize a forum for educators, parents and the community to talk about the issue of excessive screen time for students.**

**If your local thinks it might be interested in organizing such a discussion, either just for educators or for the broader community, please get in touch with the Education Policy and Practice Committee. We are eager to have conversations with people about their thoughts and experiences, as parents or as educators. Please stop by our table and chat.**

**— send us an email —  
*EPP@massteacher.org***

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**1** Betsy Corcoran, “How Google’s Former China Chief Thinks AI Will Reshape Teaching,” *EdSurge*, December 11, 2018.  
**2** Nellie Bowles, “A Dark Consensus About Screens and Kids Begins to Emerge in Silicon Valley.” *The New York Times*, October 26, 2018. Ask for references to additional articles in *Business Insider*, *The Washington Post*, NBC News, etc.  
**3** Dipayan Ghosh and Jim Steyer, “Kids Shouldn’t Have to Sacrifice Privacy for Education.” *The New York Times*, December 13, 2018. See <https://www.nytimes.com/2018/12/13/opinion/children-privacy-online.html>. “The Summit ‘personalized learning’ educational tool — a platform for online lessons and assessments that was developed by a charter school network with the help of Facebook engineers and is backed by the Chan Zuckerberg Initiative — has been criticized for asking parents to consent to sharing their children’s personal data, including their names, internet activity and grades.”

## Additional Resources

### [Educator Toolkit for Teacher and Student Privacy: A Practical Guide for Protecting Personal Data](#)

*Parent Coalition for Student Privacy, in partnership with the Badass Teachers Association*  
October 2018

**From the introduction:** “This toolkit complements the [Parent Toolkit for Student Privacy](#), released in 2017 with the Campaign for a Commercial-Free Childhood. The 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.”

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

*Faith Boninger, Alex Molnar, and Christopher Saldana, National Education Policy Center*  
April 30, 2019

**From the introduction:** “Personalized learning programs are proliferating in schools across the United States, fueled by philanthropic dollars, tech industry lobbying, marketing by third-party vendors, and a policy environment that provides little guidance and few constraints. In this research brief, the authors consider how we got to this point. Beginning with an examination of the history of personalized learning and the key assumptions made by its proponents, they review the research evidence and reflect on the roles and possible impacts of the digital technologies deployed by many programs.”

### [Outsourcing the Classroom to Ed Tech and Machine-Learning: Why parents and teachers should resist,](#)

*Leonie Haimson of the Parent Coalition for Student Privacy*  
October 2018

**Overview:** This PowerPoint provides a comprehensive overview of edtech that can be used in teacher and/or parent/teacher presentations.

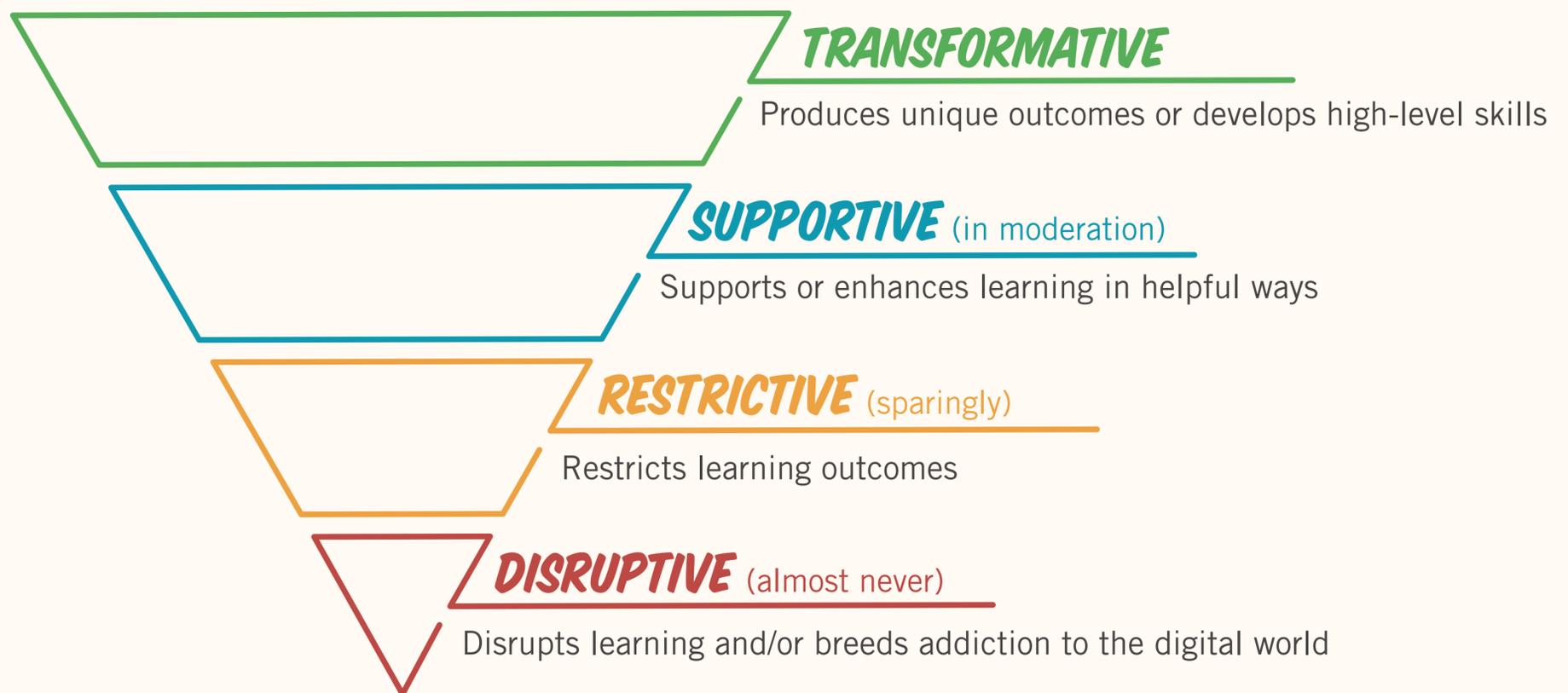
### [Online Learning: What every parent should know](#)

*Network for Public Education*  
March 2018

**From the introduction:** “The 18-page guide is a parent-friendly review of the research on virtual schools, online courses, blended learning and behavior management apps. It also includes a discussion of the student privacy issues that arise when highly sensitive personal student data is collected by online programs and then distributed to third-party vendors without parent knowledge or consent.”

# THE EDTECH TRIANGLE

This framework is a research-based synthesis of the EdTech practices, tools, and skills that optimize learning, support well-being, and protect against some of tech's negative outcomes. EdTech can be powerful in the classroom, and it should be used in line with current research.



**TRANSFORMATIVE:** Robotics, coding, computational thinking, computer animation, website design, graphic design, advanced photo, video, or music editing, spreadsheet creation, digital citizenship, any tech that helps students with special needs.

**SUPPORTIVE:** Online resources such as images or articles not available to students in print, supplementary videos such as documentaries or TED Talks, limited use of virtual reality, keyboarding, moderate but purposeful posts by teachers used to update parents on student work via sharing platforms.

**RESTRICTIVE:** E-texts in place of print, prioritizing typing over handwriting (except in final work), using software or applications that have already been mastered by the student (such as taking pictures with a tablet), points-based learning games, overcomplicated tech use by teachers.

**DISRUPTIVE:** Tech rewards, tech choice during free time, tech for tech's sake, unrestricted access to cell phones during school hours, needless screen-based homework assignments, any platform that exposes students to age-inappropriate content or bullying, too much tech.\*

## SCREEN TIME LIMIT RECOMMENDATIONS

\*Tech use is not imperative for academic success, and The EdTech Triangle does not endorse a minimum amount of tech use per grade. Moreover, all types of screen-based EdTech (even Transformative) can isolate students from their teachers or peers. As such, and in order for students to develop skills in collaboration, empathy, and critical thinking, screen time limits should be followed.



Pre-K	0 mins	6th	0-40 mins/day
K	0-20 mins 2x/week	7th	0-50 mins/day
1st	0-20 mins/day	8th	0-50 mins/day
2nd	0-20 mins/day	9th	0-60 mins/day
3rd	0-30 mins/day	10th	0-60 mins/day
4th	0-30 mins/day	11th	0-70 mins/day
5th	0-40 mins/day	12th	0-70 mins/day

## Myths and Facts about Students and Screens

By Dr. Richard Freed, PhD, author of *Wired Child*

### Myth: Giving kids phones or computers improves their school success.

**FACT:** Unfortunately, kids tend to use computers, phones, and other digital devices primarily for entertainment, not learning purposes (1). So, it's not surprising that the more time kids spend using screens or phones – including computers, the internet, TV, video games, social media, or texting – the lower their academics grades (2). In fact, after about 30-45 minutes of total screen and texting time per day, kids' grades start to suffer (3). High-school age kids who spend 4 or more hours with screens per day have grades that are a full grade point lower, e.g., A- to a B-, than kids who spend 30 minutes or less per day with screens.

**WHAT KIDS REALLY NEED:** Children's engagement with reading and books is a powerful predictor of their school success (4), so expose kids to books early and often. And, as kids get older, help them study away from the distractions of computers, screens, and phones. If kids need to use computers for school, help them stay on track by having kids use them in a common area rather than their room, and employ monitoring software to help your child keep track of their off-task usage.

### Myth: Students generally learn better using technology than “old-school” methods such as paper and pencil.

**FACT:** While many claim that immersing kids in technology improves educational outcomes, most objective studies show that technology either has no effect, hurts kids' learning success, or that limited tech use has better outcomes than tech immersion (5).

**WHAT KIDS REALLY NEED:** Many “old-school” learning methods help kids learn better than electronic devices. For example, evidence shows that print books teach kids to read, and read better, than the electronic versions (6). Limited use of certain technologies for older children, e.g., teaching a coding class in high school, makes more sense.

**Myth: Students' regular use of screens during the school day improves their chances of employment in the 21st century economy.**

**FACT:** With minor exceptions, students are certain to be exposed to enough technology at home and school without substituting technology for traditional teaching methods. The technology taught in school today is simple to use and unlikely to still be in use when they go out into the job market.

**WHAT KIDS REALLY NEED:** Students' future success will depend not on having learned particular applications, but rather having gained basic skills in logical thinking, mathematics, reading, writing, and group work.

**Myth: Allowing the use of smartphones during the school day promotes students' academic success.**

**FACT:** Students in high school who are allowed to use phones during the school day tend to receive lower test scores than students who aren't allowed to use phones during the school day (7).

**WHAT KIDS REALLY NEED:** Many private schools, recognizing the profound distraction of smartphones, don't allow students to have phones out during the school day. And, with an increasing number of public schools acknowledging that smartphones hurt kids' ability to focus, many public school students are also now required to not use phones during the school day (8).

**Myth: A harmful digital divide exists because less advantaged kids don't have the same tech access as more advantaged kids.**

**FACT:** Less advantaged kids now have about the same access to technology as more advantaged children, and it hasn't helped close income and racial achievement disparities (9). In truth, it's increasingly recognized that the truly harmful digital divide is the one describing the greater entertainment screen and phone use of low-income kids and children of color as compared with higher-income and white kids (10). We believe this to be a new but powerful factor in the lower levels of academic achievement in less advantaged as compared to more advantaged children. Indeed, private schools serving wealthier students employ less technology on average than their public school counterparts.

**WHAT KIDS REALLY NEED:** Less advantaged children need opportunities to learn important school skills away from the distractions of screens and phones.

**Myth: Health concerns about screen time are overblown.**

**FACT:** There is still much to be learned about the long-term health effects of screens on children, but there is evidence for exercising extreme caution. Overuse of screens has been shown to cause myopia in children (11) and contributes to macular degeneration (12). Excess screen use in general contributes to obesity (13), and use at night contributes to sleep deprivation (14). Alarming, evidence now indicates that screen use in children appears to interfere with normal brain development (15). And the more time kids – especially teen girls – spend with social media or smartphones and other digital devices, the more likely they are to be depressed or have suicide-related behaviors such as cutting (16).

**WHAT KIDS REALLY NEED:** Young children need free play and natural light to foster normal brain and eye development. Physical activity remains crucial for older children. Strong face-to-face connections with family, teachers, and friends are also critical to students' emotional wellbeing.

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## Why Keep Their Devices Turned Off and Put Away While at School?

(adapted from [Turning Life On](#))

Students who engaged in media multitasking during class, that is, using multiple forms of technology, including handheld devices and computers, to access the internet and/or social media, scored lower on tests and in some studies earned lower grades.

Students who received notifications during class, even though they did not respond, were just as distracted as active users of mobile devices and performed poorly on tasks.

Students who used no technology during class outperformed those who used some. Students who texted during class performed poorly.

Even the mere presence of a device negatively impacted test scores and grades. “Out of sight” does not mean “out of mind.”

Students who believed they could multitask and text during class without being distracted still scored lower on tests despite intellectual ability.

The effects of devices on test scores and learning are not necessarily related to emotional regulation. Devices can negatively affect all students regardless of mental health, emotional stability, or intelligence.

The part of the brain responsible for analytical learning - the hippocampus - is not used when distracted either by external or internal drivers.

# 1:1 Devices: Is This Good for Our Children?

*Katie Talarico, MEd*

Educational technology, in the form of 1:1 programs and computer-based teaching, is costing our schools millions of dollars.

## **Are 1:1 school devices good for our children? Are they worth the cost?**

Please consider the following research:

### **Educational benefits are questionable**

- The National Education Policy Center has called for a pause on personalized learning because of “questionable educational assumptions . . . self-interested advocacy by the tech industry, serious threats to student privacy, and a lack of research support” (1).
- As technology use increases, academic achievement often decreases (2,3,4,5,6).
- 1:1 devices create a distracted learning environment (7,8,9).
  - Multitasking is associated with significant cognitive losses.
  - Those who think they multitask well generally do not.
  - ONE multitasking student distracts students around him/her.
  - Just the OPPORTUNITY to multitask (available on all devices!) reduces effective IQ.
  - Multitasking while studying causes new info to go to the “wrong” area of the brain, making it harder to retrieve.
- Reading comprehension has been shown to be lower on screens than in print (10,11).
- Handwriting benefits learning (12).
- Students who take notes with paper and pencil have a better grasp of the material than those who take notes on a laptop (13).

### **Health risks are significant**

- Screen time is associated with subsequent attention issues and ADHD symptoms in studies of children ranging from age 1 to age 24 (14,15,16).
- Screen time is associated with obesity, irregular sleep, behavior problems, psychological difficulties, impaired academic performance, digital eyestrain, type 2 diabetes, and cardiovascular disease (17,18).
- Sleep is essential to physical and mental health. The blue light emitted from screens suppresses melatonin production and directly affects circadian rhythms and sleep patterns (19,20).
- “Light-at-night” (often homework time) has been linked with cancer, diabetes, heart disease, obesity – and, more recently – depression and suicide (21).
- Myopia diagnoses have doubled, and researchers have related it to increased screen use. Macular degeneration – which can cause blindness – is also associated with blue light exposure (22).
- “Electronic Screen Syndrome” refers to symptoms related to mood, cognition and behavior that result from interactive screen exposure – even from educational material. Screen use may act as a stimulant to young nervous systems (23).
- Brain Scans of “internet/gaming addicts” show *brain atrophy* in the frontal lobe, the striatum, and the insula. Can subtle damage occur in children even with “regular” screen use? Kids put on “screen fasts” show a surge in frontal lobe function when screens are temporarily eliminated (24).
- Screen use negatively affects communication skills and ability to empathize (25). A 2014 study from UCLA showed that middle schoolers’ ability to recognize “non-verbal emotions” through facial expressions went up after just 5 days at a device-free camp (26).
- Problematic computer use (internet addiction) is a growing social issue (27). 50% of teens feel they are “addicted” to devices – and 59% of parents agree (28).

### **Data security issues threaten kids’ privacy and expose them to unwanted targeted marketing**

### **Inappropriate content is inevitable**

- Despite filters, students can – and do – access inappropriate material during school; including pornographic, violent, and degrading images/information. Sometimes this is accidentally encountered, and sometimes kids just get past the filters.

**Many Silicon Valley executives send their kids to tech-free schools** (29, 30, 31).

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# SCREEN SCHOOLED

TWO VETERAN TEACHERS EXPOSE HOW TECHNOLOGY OVERUSE IS  
MAKING OUR KIDS DUMBER

Joe Clement  
and  
Matt Miles

## Educational Technology

- \$500 billion market that's largely been untapped
  - Rupert Murdoch, NewsCorp
- “Wary of claims that a digital generation is overthrowing culture and knowledge as we know it and that its members are engaging in new media in ways radically different from those of older generations”
  - Dr. Mizuko Ito, Humanities Research Institute at the University of California, Irvine
- “The findings show that young people’s engagements with digital technologies are varied and often unspectacular – in stark contrast to popular portrayals of the digital native.”
  - Dr. Neil Selwyn, the Institute of Education at the University of London
- "Screens in Schools Are a \$60 Billion Hoax”
  - Dr. Nicholas Kardaras, psychotherapist

## Usage

- “Kids today are being controlled by smartphones, and becoming enslaved by them.”
  - Ryuta Kawashima, professor Tohoku University
- American teenagers (13- to 18-year-olds) average about nine hours (8:56) of entertainment media use, excluding time spent at a school or for homework. Tweens (8- to 12-year-olds) use an average of about six hours’ (5:55) worth of entertainment media daily.
  - 97% of teens’ time on technology is spent passively consuming entertainment media.
  - 16 minutes of which are spent using their technology for school work
  - Children are presently using 4-5 times the amount of technology recommended by pediatric experts.
    - The Common Sense Census: Media Use by Tweens and Teens
- In a week, the average teenage boy will:
  - watch 50 pornographic videos
  - spend an average of 44 hours in front of the television and computer screen
  - spend an average of 30 minutes in a one-to-one conversation with his father.
    - Dr. Philip Zimbardo, psychologist and professor emeritus at Stanford University
- Experts estimate that the average young person will be spending 10,000 hours gaming by the age of 21. To put this in context, it takes the average college student half that time – 4,800 hours – to get a bachelor's degree.
  - Dr. Jane McGonigal, Director of Games Research and Development, Institute of the Future
- Virtually every gaming app available today is designed using research conducted by neuroscientists for the purpose of making the games addictive.
  - Neuro-imaging shows that digital gaming has similar dopamine release as an injection of meth.
    - Dr. Richard Freed, psychologist and author of *Wired Child*

## Cognitive Function/Multitasking

- Studies conducted with brain scans showed that technology use of greater than 5 hours per day was consistent with neurological “pruning” of tracks to the prefrontal cortex, known for executive functioning and impulsivity control.
  - Iowa State University and National Institute on Media and the Family
- Half of teens say they "often" or "sometimes" watch TV (51%), use social media (50%), text (60%), and listen to music (76%) while doing homework.
  - The Common Sense Census: Media Use by Tweens and Teens

- “People who chronically multitask show an enormous range of deficits... They can't manage a working memory. They're chronically distracted. They initiate much larger parts of their brain that are irrelevant to the task at hand. And even – they're even terrible at multitasking.”
  - 98% of people are incapable of doing two activities at the same time.
  - The average student at Stanford uses 3-4 devices at a time.
    - Dr. Clifford Nass, Sociologists Stanford University
- Participants who multitasked on a laptop during a lecture scored lower on a test compared to those who did not multitask, and participants who were in direct view of a multitasking peer scored lower on a test compared to those who were not. The results demonstrate that multitasking on a laptop poses a significant distraction to both users and fellow students and can be detrimental to comprehension of lecture content.
  - Dr. F.W. Sana, et al., “Laptop multitasking hinders classroom learning for both users and nearby peers”

## Mental Health

- Study shows heavy digital users are more likely to get into trouble a lot, be sad or unhappy, and be bored.
- 10-11-year-olds who used electronics for 2+ hours suffered more psychological distress than kids who use less.
- “The overuse of technology isn't the only problem, it's the experiences that are fundamental to healthy development that are being replaced by the overuse of technology.”
  - Dr. Richard Freed, psychologist and author of *Wired Child*
- Excessive technology use has been associated with:
  - historically low rates of human empathy
  - decline in the number of real-life relationships
  - increased depression
  - increased anxiety
  - increased suicidal thoughts
  - increased attention deficit
  - autism/autism-like behavior
  - increased aggression and hostility
  - increased rates of childhood bipolar disorder
  - dysfunctional coping skills
  - worse academic achievement
  - problems with verbal memory
  - low wellbeing and high loneliness
  - problems sleeping
  - psychosis
  - seizures
    - The National Institutes of Health (Bristol University 2010, Mentzoni 2011, Shin 2011, Liberatore 2011, Robinson 2008)

## Technology in Schools

- Banning cell phones in school:
  - is the equivalent of adding a week to the school year.
  - had a 6.4% improvement on test scores; underachieving students increased by 14%
    - London School of Economics
- The more schools invest in technology, the less likely children are to pay attention and learn.
  - Dubbed the “Learning Paradox”
    - Cris Rowan 2010
- “The introduction of home computer technology is associated with modest, but statistically significant and persistent negative impacts on student math and reading test scores. Further evidence suggests that providing universal access to home computers and high-speed Internet access would broaden, rather than narrow, math and reading achievement gaps.”
  - J.L. Vigdor 2014

Please join us on “Beyond the Screens” on Google Communities, [PaleoEducation.com](http://PaleoEducation.com), and look for our book, *Screen Schooled*, available now in bookstores and Amazon.

# Policy Recommendations Concerning Responsible Edtech Use, K-12

## Regarding Student Health:

### At the STATE LEVEL:

- State Boards of Education should seek input from a committee of medical experts from a variety of areas within the state Departments of Public Health and/or other State health entities in formulating recommendations for safe use of digital technology in schools. The committee should both seek expert testimony and monitor research on the various effects of screen use, such as brain development, eye health, musculoskeletal health, sleep deprivation, depression, anxiety, self-harm, etc. Recommendations should be shared with all district school boards and superintendents; they should be updated as new scientific evidence becomes available.

### At the DISTRICT Level:

- Parents and students should be afforded low-tech and no-tech options whenever requested, including paper copies of all textbooks, reading materials, worksheets, and testing materials.
- Teachers should be instructed to minimize the amount of homework assigned that must be done online. Requiring students to spend time on digital devices interferes with families' abilities to maintain healthy limits on screen time.
- Cell phone use should be prohibited in all classrooms during class time, with phones out of reach.
- Districts should develop, institute, and enforce policies to ensure that schools and teachers follow manufacturers' guidelines regarding safe use of digital devices. Parents should be made aware of all manufacturers' ergonomic and safe use guidelines, and should sign off on their understanding and acceptance of these guidelines prior to devices being issued to students.
- In planning for safe use of digital devices for school and homework, administrators should gather data regarding: (a) in-school screen usage by grade level; and (b) the amount of time children, by grade level, spend on digital devices at home doing school-related work. Aggregated school-related usage data should be made available to the public.
- Districts should create teacher, student, and parent education programs about the known and potential health consequences of the overuse of screens, including physical and mental health consequences; and such programs should be delivered to all

constituents on a yearly basis. Annual attendance at such programs should be mandatory for teachers and students in 4th grade and beyond, and records maintained to that end.

- While scientific research regarding the health effects of exposure to radio frequency from digital devices and Wi-Fi has been inconclusive, school health officials should monitor ongoing research efforts and respond to any new screen safety standards that are established.
- School guidance counselors should be trained to recognize and treat potential negative psychosocial effects of overuse of social media and online gaming, including screen dependence, anxiety and depression.

## Regarding Edtech and Computer-based Learning:

### At the STATE LEVEL:

- Each State Board of Education should establish a committee that includes experts in education, experts in technology, and teachers. No computer-based, gamified, or personalized learning product should be used in a school unless this committee has reviewed its underlying algorithms, pedagogical soundness, potential health risks, and implications for child and teacher privacy, and has approved the product.

### At the DISTRICT Level:

- In general, digital devices should be avoided in elementary school classrooms given the proven benefits of offline learning and lack of evidence supporting the efficacy of screen-based instruction during these years. The introduction of online testing or online instruction in the elementary grades should be prohibited, as it requires the introduction of digital technology in the early grades (in order to prepare students for the tests).
- Beginning in middle school, limited use of technology is acceptable to introduce word processing, spreadsheets, and computer-based research. Otherwise, technology should only be used when there is no equally good way to teach a particular skill or concept.
- Technology-related skills needed by graduation – including word processing, the use of spreadsheets, and the ability to conduct internet- and computer-based research – should continue to be taught in high school, subject to established safe use guidelines.

## Regarding Use of Student Data:

- *Transparency:* Schools must publicly post and notify parents of the personal student data that they and their edtech vendors collect, the purpose of the collections, with whom the data is shared, if and when it will be destroyed, and the person(s) responsible for answering questions and providing public access to vendor contracts and privacy policies.
- *Notification and Consent:* Parents must be notified any time their student's data is shared with edtech companies, and given the ability to consent, particularly for highly sensitive information such as their child's disabilities, health, and disciplinary information.
- Such consent cannot be obtained in blanket form, but should be obtained each time a new edtech software program or app is introduced.
- *Limitations on Use:* Student data should be used only to benefit individual students and their schools. Edtech companies must be prohibited from using or sharing student data for any commercial purposes, including the development and marketing of products and services.
- *Security and Breach Notification:* Personal data of students and teachers must be protected using rigorous and currently accepted industry standards and in conformance with state and federal law. Any student or teacher affected by a data breach must be notified directly and given assistance to remedy any harm.
- *Accountability:* Schools, districts, and edtech companies with access to student and teacher data must comply with all state and federal privacy laws and be held accountable for all violations of student privacy.



## **screens in schools action kit**

With profound thanks, we honor these volunteer contributors for their tenacity, dedication and courage to create the original documents. Taking on this critical issue and providing tools to parents and teachers represents hope for generations of learners to come.

**Seth Evans**, Chair, Screens in Schools Work Group

**Criscillia Benford**

**Faith Boninger**

**Laura Bowman**

**Cynthia Boyd**

**Emily Cherkin**

**Joe Clement**

**Lisa Cline**

**Laura Derrenderinger**

**Ann Marie Douglass**

**Richard Freed**

**Stefanie Fuhr**

**Andy Liddell**

**Jenifer Joy Madden**

**Roxana Marachi**

**Matt Miles**

**Adrienne Principe**

**Katie Talarico**

**Amy Tyson**

**Autumn Wilson**

**Blythe Winslow**

### **CCFC Staff**

**Josh Golin**

**Melissa Campbell**

**Sam Garin**

**David Monahan**

**Jean Rogers**

**Rinny Yourman**



Campaign for a Commercial-Free Childhood

89 South Street, Suite 403, Boston, MA 02111

(617) 896-9368 / [ccfc@commercialfreechildhood.org](mailto:ccfc@commercialfreechildhood.org)

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