



the problem



screens in schools
action kit



table of contents



the problem

Screens in Schools Work Group
Statement of Purpose
Introduction to the Action Kit
Technology in Schools: Promise and Perils
Effects of Edtech on Learning
Effects of Edtech on Psychological
and Social-Emotional Wellbeing
Effects of Screen Time on Health
Problems with Privacy and
Misuse of Student Data



tools for educators

Introduction to Educator Resources
Educator Commentaries
Case Study: A Local Union Takes Action
Sample Union Resolutions on Edtech
Sample Screen Time Flyer
Additional Educator Resources



further reading

Comprehensive Overviews
Recommended Reading
Selected Articles on Edtech



tools for parents

Introduction to Parent Tools
Questions Parents Should Ask about Edtech
A Guide to Classroom Screen Safety
Five Principles to Protect Student Privacy
Exercise Your Student Privacy Rights
Sample District-Wide Recommendations
An Informed, Research-based, Mindful, and Double-looped
School Technology Program
Citizens' Resource Guide: A Possible Legal Strategy
Using Surveys as a Tool
Superintendent Letter (short)
Superintendent Letter (long)
Moratorium Request
Sample Petition with Demands and Rationale
Sample Low Screen Instruction Petition
Sample Petition - Summit Learning
Sample Petition with Demands and Rationale (Spanish)
Opt Out Petition
Sample Letter to the Editor
Sample Letter to the Editor in Response to an Article
The EdTech Triangle*
Myths and Facts about Students and Screens*
Why Keep Their Devices Turned Off and Put Away
While at School?*

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

Screen Schooled Summary*

Policy Recommendations Concerning
Responsible Edtech Use, K-12*

*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 fairplayforkids.org/print-action-kit.

Screens in Schools Work Group

Statement of Purpose

Digital devices are being overused in schools in ways that are causing harm to our children. Many teachers, parents, administrators, health professionals, and students see that damage every day.

Studies show that more screen time leads to worse school performance. Growing evidence indicates negative health effects on children's developing brains, eyes, and mental health. Even worse, educational technology often harvests student data for commercial purposes.

It is time to act. We cannot allow our children to be experimented on any longer.

We seek to:

- Partner with teachers, parents, consultants, therapists, and public health workers who are committed to reducing the harm of screens in schools.
- Share information and resources as they relate to the risks of screen-based learning.
- Assist parents in compelling their local schools to become less screen-dependent.
- Support teachers and administrators who want to reduce the use of screens in their classrooms and districts.
- Provide language and documentation to parents who want to help reduce or eliminate screen-based schoolwork.
- Inspire and support students who want to have the rich and textured learning process they deserve.
- Collaborate with activists who view screens in schools as contributing to the commercialization of childhood and the privatization of public schools.

For more information, contact Seth Evans at seth@fairplayforkids.org.

Introduction to the Action Kit

This Action Kit has been created by the Screens in Schools [Work Group](#) of the Children's Screen Time Action Network. The [Action Network](#), formed in 2017, is a coalition of practitioners, educators, and advocates working to promote a healthy childhood by reducing the amount of time kids spend with digital devices. The Action Network is a project of [Fairplay](#).

The Screens in Schools Work Group was formed at the inaugural conference of the Children's Screen Time Action Network. After an eye-opening keynote by *Screen Schooled* authors (and future Work Group members) Joe Clement and Matt Miles, a group of parents and teachers met over lunch and discussed our concerns about edtech. Parents expressed frustration that their efforts to limit and monitor their children's media use were undermined by online homework assignments. Educators shared how the rise of edtech has contributed to the de-professionalization of the teaching profession and demoralization. Everyone voiced their concern at how much time students were spending on computers and tablets at school and the effect that was having on children's wellbeing and learning. And we all agreed we had to do something about it.

After the conference, the Work Group met regularly online (we're not technophobes!). We supported and coached one another as we advocated for less screen use in our own school districts. We shared resources and strategies. And we soon realized that the tools we were creating, as well as the wisdom we were gaining from our successes and struggles, could benefit a lot more people than our 40 Work Group members.

The Screens in Schools Action Kit is the very first by-teachers and parents, for-teachers and parents resource to address the overuse of edtech in schools. We created this Action Kit so the parents and teachers who follow in our footsteps don't have to reinvent the wheel. Whether you're a seasoned activist or contemplating raising a concern with your school for the very first time, we believe the Action Kit will help you advocate more effectively and efficiently.

*As concerned parents, teachers, and activists, we insist that our schools embrace their **duty of care** and that public funds do not contribute further to the harm that is already being done to children and their education by the proliferation of digital devices and computer-based learning.*

*We also insist that public schools employ the **precautionary principle**: With little proven benefit and potentially great harm, it is prudent to limit the use of digital devices in schools until such time as these devices can be shown to be safe for children and good for their learning.*

Background: Our Beliefs about Edtech

The Action Network supports the use of technology in the classroom as a tool for creativity, communication, and research. We reject the introduction of technology that results in displacing human interaction with screen interaction, usually with no true benefit for students. We believe that edtech should be used very sparingly in elementary school classrooms, if at all, and support a gradual increase in digital devices and computers as children move through middle and high school. We insist that school administrators articulate why children are using screens, and never have children use tablets or computers because it is trendy or fun, or to justify their investments in hardware.

How to Use the Action Kit:

The Action Kit has many documents that provide further background about the issue of screens in schools, but it is not intended to be an exhaustive collection, or to duplicate the excellent [resource library](#) hosted by the Action Network. While some may wish to read the Action Kit cover-to-cover, it is designed to make it easy for you to select the resources and tools that will be most helpful to your advocacy.

Under [The Problem](#), you'll find 2-3 page documents that summarize the different effects of overuse of digital devices. These pieces can be helpful in educating potential allies and convincing skeptical policymakers.

In [Tools for Parents](#), you'll find short, off-the-shelf documents like petitions and factsheets that could be used as-is or adapted to a particular group's needs.

[Tools for Educators](#) includes documents that would be of particular interest to educators and their unions, such as educator blogs about edtech, and examples of teachers organizing around edtech issues.

Finally, for more in-depth reading, the Action Kit includes a [Further Reading](#) section with links to some of the more valuable articles and comprehensive treatments of the subject that have been produced in the last few years.

Technology in Schools: Promise and Perils

It is true that our children will be living in a digital world, and that world holds both great promise as well as some peril. The Children's Screen Time Action Network supports the moderate, developmentally appropriate, and safe use of technology in schools. This technology can bring added convenience and communication, and can support and even transform learning in specific settings. The purpose of this Action Kit, therefore, is **not** to oppose these appropriate uses of technology. Rather, it is to help parents and educators resist the **overuse and misuse** of screens in schools.

The Action Network supports the principles set out in [The EdTech Triangle](#), a research-based model that was developed by the nonprofit [Everyschool](#) to guide educators to use technology selectively, with an emphasis on technology that is truly transformative and can produce a unique outcome or develop a high-level skill beyond traditional methods. As the "EdTech Triangle" indicates, a child's age and developmental stage must also be taken into account when judging both the appropriateness of the technology in question, and the amount of time the child might spend on it.

For example, most elementary-aged children (grades K-4) do not have the executive functioning skills to use technology in transformative ways. They benefit from writing by hand and reading from real books; plus their developing eyes and brains are harmed by exposure to screens. Computational thinking can begin to be taught to upper elementary students with non-digital games and puzzles. Middle school students will also benefit from the introduction of tools for word processing, data analysis, and research, but their school-based screen time must be considered in the context of their already heavy – and often harmful – use of screens for social media and gaming at home. By high school, students will benefit by learning more about computer logic and by engaging in creative projects, such as programming and building robots to solve real world problems, 3D printing, animation, and filmmaking. They should also be proficient in word processing and other select applications.

We understand that all educators aim to help children learn. Parents and educators also want children to finish school with the skills that will help them succeed in the 21st century economy. We believe, however, that the powerful edtech industry has preyed on these concerns and oversold school districts on the power of their products to solve *all* educational problems, including underperformance on standardized tests, the achievement gap, and meeting the needs of every type of student. In less than a decade, the resulting proliferation of 1:1 programs (one digital device per student), computer-based instruction (often called "personalized learning"), gamification of lessons, and putting most textbooks and homework online has transformed many K-12 classrooms.

Now, however, parents and teachers are beginning to take stock of these trends and ask important questions, such as:

- Is edtech helping our students learn, and, if so, in what situations and in what ways?
- How can edtech be used to transform educational experiences, rather than just substitute digital lessons for analog lessons, thus reducing face-to-face interaction with teachers and peers?
- Does edtech have unintended consequences in the form of threats to our children's health and social-emotional wellbeing?
- Does the technology take sufficient care with student data, and do parents and students have sufficient knowledge and agency with regard to how the data is used?
- How is edtech affecting the teaching profession?
- What are the possible unintended consequences for public schools, and our society in general, if decisions about curriculum and methods are, in effect, turned over to for-profit corporations?

We hope this Action Kit serves to promote this healthy questioning throughout our K-12 educational system. Our children's future is at stake.

Effects of Edtech on Learning

The drive to insert edtech into the nation's classrooms is driven more by corporate profit-seeking than by a true regard for students' learning and well-being. Tech companies and their backers, seeing a half trillion-dollar potential market, have flooded classrooms with low-cost hardware and computer-based learning programs and apps. School administrators, desperate for ways to improve test scores and eager to "keep up" with neighboring towns' tech spending, are an easy mark for edtech marketers that claim their products are the bold innovative solution for transforming schools from an "outdated," "factory" model, to one that will prepare students for 21st century jobs. And 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.

(De-)Personalized Learning: Edtech is usually introduced into schools as a way to "personalize" learning, which, in theory, allows for student-centered instruction. The teacher takes a backseat and becomes a "guide on the side" while students explore at their own pace and choose learning methods that best fit their unique learning styles. The problem is that decisions about pacing and direction of instruction are being left in the hands of the children themselves. While a few older students might thrive in this setting, most flounder, and they miss the human interaction that catalyzes deep, conceptual understanding and higher-order thinking. Most troubling, "personalized" learning often becomes, in practice, the de-personalized practice of merely adjusting the difficulty level of prefabricated skills-based exercises based on students' test scores, which are generated regularly by computer software.

Edtech De-professionalizes Teaching: Robust curriculum, guided by and delivered with teachers' professional judgment, is replaced by incessant test preparation, effectively turning over decisions about pedagogy and content to commercial interests. There are many creative and rich ways to use technology in the classroom. However, each classroom teacher should be given the autonomy about when and how to utilize it.

Overuse of Screens for Non-school Purposes is a Problem for Both Teachers and Parents: Allowing digital devices into the classroom for note-taking and/or non-academic purposes has negative consequences for learning. As parents know and as research demonstrates, multitasking is a myth, and the distractions created by social media and gaming apps draw students' attention from instruction and reduce learning retention. Furthermore, excess screen use at home can result in anxiety, depression, and sleep deprivation, contributing to lower school achievement. Teachers can unwittingly contribute to home use of social media, video games, and other addictive apps by assigning homework online, undermining parents' efforts to limit and monitor children's screen time.

Countering the Counter-arguments:

They say: With much of the class being able to complete lessons on computers, the teacher can focus on those individuals and small groups that truly need assistance.

In fact: All students spend less time with teachers and more time interacting with screens, with the teacher's role changed into that of data collector and screen monitor.

They say: Students need to spend a lot of time on computers in order to be prepared for 21st century jobs.

In fact: Students' future success will depend on having gained basic skills in logical thinking, critical thinking, mathematics, reading, writing, and group work.

They say: Edtech meets children where they are, turning their love of digital games into an opportunity for learning.

In fact: Many digital curricula, especially for younger kids, offer virtual rewards that interrupt learning and teach students to complete assignments to get a prize, rather than helping to instill a love of learning. Gamification may contribute to student distraction and digital dependence.

Evidence from Recent Studies:

- A multi-country 2015 study by the Organization for Economic Co-operation and Development found that "students who used computers very frequently at school do a lot worse in most learning outcomes" (1).
- A 2019 study by the Reboot Foundation showed a negative connection between a nation's performance on international assessments and 15-year-olds' self-reported use of technology in school (2).
- A review of international research by investigators at MIT found that while some math programs do show promise, in general, student achievement doesn't rise when kids are using computers more, and it sometimes *decreases* (3).
- A 2009 study by the U.S. Department of Education found that the overall effect of edtech was "zero" and that in sixth grade math, students who used software got lower test scores – and the effect got significantly worse in the second year of use (4).
- In 2017, the generally tech-friendly Rand Corporation found "positive results in both mathematics and reading, but the achievement gains were modest, and statistically significant only in mathematics" (5).

- A meta-analysis of 1:1 programs by Missouri State University found “mixed or negligible effects in other areas of achievement like math, science, reading or social studies” (6).
- The Maine statewide 1:1 laptop program, after a decade and a half, and at a cost of \$12 million annually, has yet to yield increases on statewide standardized test scores (7).
- Comprehension suffers when students read from digital devices, especially with nonfiction, according to a systematic review. Readers may be more efficient and aware of their performance when reading from paper compared to screens (8).
- A controlled Rutgers study showed cell phones in the classroom leading to distraction and lower retention (9).
- A study at the U.S. Military Academy showed negative effects in classrooms where laptops and tablets are permitted without restriction and in classrooms where students are only permitted to use tablets that must remain flat on the desk (10).
- A study, published in JAMA Pediatrics, found children get more sleep, do better in school, behave better, and see other health benefits when parents limit the content and amount of time their children spend on the computer or in front of the TV (11).
- Multitasking is a myth, according to Dr. Joann Deak, because the brain is only able to focus deeply on one task at a time. Further, trying to do too many things at once causes the brain to lose the capacity for deep thinking altogether (12).
- The common practice of teachers assigning homework online interferes with parents’ efforts to monitor and limit their children’s use of digital devices at home for non-school-related entertainment and social media (13).

References:

- 1 [Students, Learning and Computers: Making the Connection](#), OECD, revised version, October 2015.
- 2 [Does Educational Technology Help Students Learn?](#) An analysis of the connection between digital devices and learning. By Helen Lee Bouygues, Reboot Foundation, June 2019.
- 3 [Education Technology: An Evidence-Based Review](#). By Maya Escueta, Vincent Quan, Andre Joshua Nickow, and Philip Oreopoulos, National Bureau of Economic Research Working Paper No. 23744, August 2017.
- 4 [Effectiveness of Reading and Mathematics Software Products: Findings From Two Student Cohorts](#), Executive Summary. By Larissa Campuzano, Mark Dynarski, Roberto Agodini, Kristina Rall, Institute of Education Sciences, U.S. Department of Education, February 2009.
- 5 [What Emerging Research Says about the Promise of Personalized Learning](#). By John Pane, *The Rand Blog*, August 16, 2017.
- 6 [A Meta-Synthesis of Research on 1:1 Technology Initiatives in K-12 Education](#). By G. Roger Sell, Jeffrey Cornelius-White, Ching-Wen Chang, Annice McLean, and W. Roy Roworth. Ozarks Educational Research Initiative, Institute for School Improvement, Missouri State University, April 30, 2012.
- 7 [Do Laptops Help Learning? A Look At The Only Statewide School Laptop Program](#), By Robbie Feinberg, nprEd Podcast, August 18, 2017.
- 8 [Reading from paper compared to screens: A systematic review and meta-analysis](#). By Virginia Clinton, *Journal of Research in Reading*, January 13, 2019.
- 9 [Cellphone Distraction in the Classroom Can Lead to Lower Grades, Rutgers Study Finds](#). By Neil Buccino, *Rutgers Today*, July 23, 2018.

- 10 [The Impact of Computer Usage on Academic Performance: Evidence from a Randomized Trial at the United States Military Academy](#). By Susan Payne Carter, Kyle Greenberg, and Michael S. Walker. *Economics of Education Review* 56, February 2017.
- 11 [Limiting screen time improves sleep, academics and behavior, ISU study finds](#). By Doug Gentile, *Iowa State University News Service*, March 31, 2014.
- 12 [The Myth of Multitasking And What It Means For Learning](#). By Nick Morrison. *Forbes*, November 26, 2014.
- 13 [Online Homework Conflicts with Parental Limits on Kids' Screen Time](#). By Cait Etherington, *ELearning* newsletter, January 9, 2019.

Further Reading and Resources:

[“Personalized Learning and the Digital Privatization of Curriculum and Teaching.”](#) National Education and Policy Center, April 2019.

[“Has the Personalized Learning Hype Worn Off?”](#) By Tim Walker, *NEA Today*, August 19, 2019.

[“Here's Why School Chromebooks Aren't All They're Cracked Up to Be.”](#) By Tim Cavanaugh, *Real Clear Investigations*, July 17, 2019.

[“The Messy Reality of Personalized Learning.”](#) By E. Tammy Kim, *The New Yorker*, July 10, 2019.

[“How I Lost the Screen-Time Battle with My Kids.”](#) By Joe Mathews, *San Francisco Chronicle*, May 5, 2019.

[The Digital Gap Between Poor Kids and Rich Kids is Not What We Expected](#). By Nellie Bowles, *The New York Times*, October 26, 2018.

To Take Action:

[Tools for Parents](#)

[Tools for Educators](#)

Effects of Edtech on Psychological and Social-Emotional Wellbeing

The overuse of screens in schools cannot be considered in isolation from the many hours of non-school-related use that has become a major part of our children's culture. According to Common Sense Media, tweens (ages 8-12) spent an average of 4.44 hours per day on screens, **outside of school and school-assigned homework**. Teens (ages 13-18) spent an astonishing 7.22 hours per day. Our tweens now spend less time outside than prisoners! These hours are primarily spent on various social media, online videos, and computer games.

The rapid introduction of computer-based learning, online textbooks, and one-on-one programs has now added significantly to the time students spend on screens. This is due both to the time spent in class on devices and the time spent doing homework. For example, the same Common Sense Media census found that 27% of tweens and 59% of teens were required to do homework online, up significantly from their census of 2015.

The interaction between online homework assignments and children's non-school-related use is particularly problematic. Homework assignments often take much longer to complete, as students' attention is divided between the assignment and the digital distractions at hand. Also, parents wishing to guide or monitor their children's screen use are stymied when the children insist that they *must* use their devices to do homework. Perhaps most troublesome of all, many students suffer chronic sleep deprivation as a result of the *requirement* to be online at night, where they are regularly exposed to sleep impairing blue light as well as the addictive apps, programs, and games that profit from maximizing their waking attention.

With multiple studies showing correlations between increased time spent on digital devices and declines in children's mental health – including anxiety, depression, isolation, attention deficits, and addiction – additional screen time at school must be viewed as a potential contributor to declining mental health. Until the complex connections between screen time and mental health are better understood, the precautionary principle should apply. Specific mental health concerns associated with increased screen time include:

Anxiety and Depression: Diagnosis of anxiety and/or depression is twice as frequent in teens who spend an excessive amount of time in front of a screen versus those who spend an hour or less a day using electronic devices. Even teens spending a more moderate amount of time on electronic devices experience an increase in anxiety and depression.

Isolation: The use of edtech lessens human interaction in schools. This compounds the social isolation effects that social media and excessive screen time engender outside the school day.

Decreased Attention: Behavioral scientists have linked the use of screens by children to behavioral problems and attention deficit disorder. This would be no surprise to teachers, who find their classrooms increasingly harder to manage as a result of children's shortening attention spans and growing need for instant gratification – characteristics many psychologists associate with overuse of screens. Furthermore, the use of screens tends to result in exacerbation of ADHD symptoms in children who have already been diagnosed.

Addiction: Psychologists increasingly recognize that certain types of fast-paced media may be addictive. Indeed, in 2018, the World Health Organization (WHO) added "Gaming Disorder" to

*This resource is part of the **Screens in Schools Action Kit**, a project of the Children's Screen Time Action Network's Screens in Schools Work Group. To access the entire Action Kit and learn more, visit fairplayforkids.org/screens-in-schools-action-kit/*

its 11th Revision of the International Classification of Diseases (ICD-11). Schools increase the risk and harm of addiction when, in an attempt to make schooling entertaining – i.e., to meet students “where they are at” – apps are introduced to “gamify” lessons, or screen time is used for rewards or substituted for outdoor recess. Many districts now sponsor esports alongside actual athletics.

Bullying in Schools: Another mental health-related concern is that digital devices are also the vector for a dramatic growth in bullying behavior in schools. Teens send an average of 60 texts per school day. With so many students carrying smartphones (e.g., 59% of 12-year-olds) and having access to these and other devices in school, the old concern of “passing notes” now seems quaint. A digital “note” – i.e., a posting on social media – reaches hundreds instantly, magnifying the power and accompanying emotional trauma of any cruel or thoughtless teenage insult.

Schools must take a holistic view of our children’s digital lives when considering whether or how to invest in edtech. Key factors for administrators, teachers, and parents to consider include limits on time spent on screens in school, the assignment of online homework, whether school-issued devices are sent home, the use of screen time as a reward or a “sponge” activity, whether to lock away smartphones during the school day, and parents’ rights to opt their children out of device use if they so choose. Schools must also play a preventive role by educating parents, teachers, and students about the potential mental health consequences of screen overuse; and school counselors must be trained to counsel students suffering from screen overuse and addiction.

Countering the Counter-arguments:

- **They say:** All screen time is not created equal, and there is no need for concern so long as the content is educational.
- **In fact:** The addictive, socially isolating, and mentally stressful nature of screen use by children is still poorly understood. Until we can be certain that more time on digital devices is not hurting our children, caution should prevail. Many Silicon Valley creators of edtech products know this and send their own children to low-tech or no-tech schools.
- **They say:** Parents are the problem and they're the ones who need to curtail their children's screen time at home.
- **In fact:** School systems issue electronic devices to students, and parents have little say in the amount of time their children are using these devices for schoolwork. Parents are able to monitor and manage the electronic devices they provide to their children, but this is rarely the case with school-issued electronic devices.

Evidence from Recent Studies:

- A 2018 Quebec [study](#) found that children who spent the most time glued to a screen when they were very young proved most at risk of developing emotional, psychological, and physical health problems by the time they become teenagers. (1)
- A 2018 [report](#), drawing on evidence from a population-based study, demonstrated associations between screen time and lower psychological wellbeing among children and adolescents. (2)
- A 2017 cross-sectional statistical [study](#) assessing the relationship between television watching/computer use and depression showed that moderate or severe depression was associated with higher time on screens. (3)
- In 2019, the World Health Organization added "[Gaming Disorder](#)" to its list of diseases. Gaming Disorder is described as the inability to stop playing video games, even when it negatively impacts relationships with others, schoolwork, professional life, and sleep. (4)
- The World Health Organization and the American Academy of Pediatrics issued [guidelines](#) on the use of electronic screen use by children, and the National Institutes of Health has begun studying the impact of screen time. These organizations are looking at data on how screen use by children affects them, both physically and emotionally. Screen use tends to be isolating and sedentary while children need to be actively and physically engaged with the people and the world around them. (5)

- Due to growing [concerns over screen time](#), parents who live or work in tech-heavy Silicon Valley are increasingly opting for low-tech home and school lives for their own children. They see the addictive nature of electronic devices and how their use can engender kids who are distracted, depressed, and anxious. (6)
- Screen-time is associated with inattention problems in preschoolers: results from the April 2019 CHILDBirth cohort study shows that children with more than two hours of screen time per day had a seven-fold increased risk of meeting criteria for ADHD. (7)
- A 2-year [study](#) published in JAMA, completed in 2018, showed a moderate association between the use of digital devices and subsequent development of ADHD, as well as an exacerbation effect on those already diagnosed with ADHD. (8)

References:

- 1 [Prospective associations between television in the preschool bedroom and later bio-psycho-social risks](#). Linda S. Pagani, Marie Josée Harbec, Tracie A. Barnett, *Pediatric Research*, 2018.
- 2 [Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study](#). Jean M. Twenge, W. Keith Campbell, NCBI, 2018.
- 3 [Association between screen time and depression among US adults](#). K.C. Madhava, Shardulendra Prasad Sherchand, Samendra Sherchan, *Science Direct*, 2017.
- 4 [Gaming Disorder](#). World Health Organization, 2019.
- 5 [W.H.O. Says Limited or No Screen Time for Children Under 5](#). Emily S. Rueb, *New York Times*, 2019.
- 6 [Silicon Valley parents are raising their kids tech-free — and it should be a red flag](#). Chris Weller, *Business Insider*, 2019.
- 7 [Screen time may increase chances of attention problems in children aged 3 to 5](#). NCBI, 2019.
- 8 [Association of Digital Media Use With Subsequent Symptoms of Attention-Deficit/Hyperactivity Disorder Among Adolescents](#). Chaelin K. Ra, Junhan Cho, Matthew D. Stone, *JAMA*, 2018.

Further Reading and Resources:

[“The Scary, Lasting Effects of Too Much Screen Time on Children.”](#) Brett Arends, *MarketWatch*, April 10, 2019.

[“Social Media Use Increases Depression and Loneliness, Study Finds.”](#) *ScienceDaily*, November 8, 2018.

[“There’s Worrying New Research About Kids’ Screen Time and Their Mental Health.”](#) Markham Heid, *Time*, October 29, 2018.

[“Frequent Technology Use Linked to ADHD Symptoms in Teens, Study Finds.”](#) Daniela Hernandez, Betsy Morris, *The Wall Street Journal*, July 9, 2018.

[“How the Tech Industry Uses Psychology to Hook Children.”](#) Richard Freed, Meghan Owenz, *Psychology Today*, October 24, 2018.

To Take Action:

[Tools for Parents](#)

[Tools for Educators](#)

Effects of Screen Time on Health

Children's developing brains, eyes, and bodies are especially vulnerable to the negative health effects of excessive screen time. These effects include: **diminished cognitive abilities**, **eye health concerns** (such as myopia, digital eye strain, and potential retinal damage), **sleep deprivation**, attention issues, **musculoskeletal complaints**, and obesity. Furthermore, the overuse of digital devices contributes to an increased chance of psychological and behavioral issues.

Of greatest concern are the preliminary findings by the National Institute of Health showing that kids with lots of screen time showed a premature thinning of the cortex. This outermost layer of the brain processes different types of information from the senses.

Screen time activist [Cindy Eckard](#), the driving force behind Maryland's classroom screen safety legislation (the first in the nation), focused much of her persuasive effort on the **duty of care** parents and teachers have toward children. As such, she focused on the well-documented eye risks and musculoskeletal problems associated with excessive screen time. As Eckard has pointed out, OSHA has been protecting office workers from the dangers posed by digital devices since the 1990s. How is it possible that our children – the most vulnerable population – have been working on these same devices without any attention to health and safety guidelines?

Because so much class work is done on a computer in many school districts, most after-school homework and studying also requires a computer. In addition to making it difficult for parents to help children manage their screen time, this is especially problematic for our kids because the blue light from the digital devices – in addition to potentially causing serious eye ailments – suppresses a hormone called melatonin, which is necessary for sleep. Resulting sleep deprivation brings a host of additional serious health risks to our children. Similarly, school-related screen time contributes to a lack of outdoor activity, which in turn can result in obesity and heart problems.

Health and wellbeing are basic building blocks of development and are essential to meaningful learning. Proper sleep, clear cognition, the ability to focus, and general health all contribute to a child's success in school and in life. If we erode this basic foundation for success, we also erode a child's ability to learn. The introduction of iPads, laptops, tablets, smartboards, and smartphones into schools drastically increases the amount of screen time children have in a day – and therefore increases the likelihood of adverse effects on their health. Given the seriousness of these concerns – coupled with a lack of evidence showing improved learning using digital devices – parents might reasonably expect their schools to practice the Hippocratic Oath to “do no harm” to our students.



Countering the Counter-arguments:

They say: Screens may be causing damage, but most of this damage is done by home and recreational use. Schools can't be expected to sacrifice the benefits of computers because some parents can't control their children's home use.

In fact: Schools, which have a duty of care toward our children and are legally obligated to look out for their safety, can't go on assigning classwork and homework on screens, pretending that students aren't already spending dangerous amounts of time on screens at home. Homework and textbook assignments on screens make it especially difficult for parents to monitor and guide their children's screen time.

They say: Schools can provide kids with blue light filtering glasses to eliminate the blue light effects. Schools can teach kids proper ergonomic positions in which to safely use devices to eliminate neck pain and eyestrain.

In fact: They could, but there will be the inevitable lost and broken glasses, and the inevitable children who don't use the device in a proper ergonomic way. It would amount to MORE things that teachers need to monitor, and this takes away time from the student/teacher relationship – which is one of the most important factors in school success. Teachers need more time to interact with students, not devices and glasses. Also, shouldn't we make sure that the academic and learning benefits of school devices are proven before we pour more money and resources into making school devices safer?

They say: Schools need to teach kids how to use devices responsibly, so they can learn to self-regulate.

In fact: Children do not have a fully developed frontal lobe until their mid-20s. The frontal lobe is responsible for self-management, impulse control, and planning. Therefore, developmentally speaking, children cannot be expected to self-regulate device use. Schools should instead focus on developmentally appropriate methods of teaching and learning. This can, and should, include digital literacy and computer skills, but this does not require constant use of a device throughout the school day.

Evidence from Recent Studies:

Cognition

- **Cognitive development:** An NIH study is following roughly 12,000 participants over time to understand how media use and other factors influence a person's development. Preliminary results show a correlation between screen use and premature thinning of the cerebral cortex.(1)
- **Gray matter atrophy:** Multiple studies have shown atrophy (shrinkage) in gray matter (areas of the brain where "processing" occurs) in individuals with internet/gaming addiction. Areas affected included the frontal lobe, which governs executive functions such as planning, prioritizing, organizing, and [impulse control](#).(2)

- **Limited screen time tied to better cognition in kids:** Children who meet Canadian recommendations for screen time, sleep, and exercise [have better cognition](#) than their peers who don't meet the recommendations – and screen time seems to have the largest effect.(3)
- **Association between screen time and children's performance on a developmental screening test:** Higher levels of screen time were associated with [poor performance on a screening measure](#) assessing children's achievement of developmental milestones at 36 and 60 months.(4)

Eye Health

- **Blue light can harm the eyes:** The rise in personal electronics is dramatically increasing exposure to blue light, raising new concerns about a variety of eye health risks. Blue light penetrates more deeply into the eye than other colors and can harm the retina.(5)
- **Myopia on the rise:** Childhood myopia has more than doubled over the last 50 years. The possible culprit? Too much screen time and not enough sunlight.(6)
- **Digital eye strain/computer vision syndrome:** Instances of [digital eyestrain](#) and computer vision syndrome have increased. These can cause eye discomfort, fatigue, blurred vision and headaches, dry eyes, and eye strain. The above review notes that asthenopia (or eye strain) is also associated with learning difficulties.(7)

Sleep

- **Sleep quality and screens:** Screen use is linked with [delayed bedtimes and shorter total sleep time](#). Poor sleep causes daytime tiredness, which is linked with “poor school performance and a host of psychological problems.”(8)
- **Melatonin:** Blue light suppresses melatonin production and shifts circadian rhythms, affecting sleep cycles.(9)

Musculoskeletal Effects:

- **Text Neck:** Bending over handheld devices puts increased stresses on the neck area, possibly contributing to pain and a “text neck” diagnosis.(10)

Heart Health and Obesity:

- A 2018 American Heart Association American study says smartphones, tablets, TVs and other screen-based devices are making kids more sedentary – and sedentary behavior is tied to overweight and obesity in young people.(11)

References:

- 1 [Screen Media Activity and Brain Structure in Youth: Evidence for Diverse Structural Correlation Networks from the ABCD Study](#). By Martin P. Paulus, MD, et al, *HHS Public Access*, April 29, 2019.
- 2 See, for example, [Zhou 2011](#), [Yuan 2011](#), [Weng 2013](#), and [Weng 2012](#).
- 3 [Limited Screen Time Tied to Better Cognition in Kids](#). By Amy Orciari Herman, *NEJM Journal Watch*, September 27, 2018.
- 4 [Association Between Screen Time and Children's Performance on a Developmental Screening Test](#). By Sheri Madigan, Dillon Browne, Nicole Racine, et al., *JAMA Pediatrics*, January 28, 2019.
- 5 [Seeing Blue: The Impact of Excessive Blue Light Exposure](#). By Heather Flint Ford, OD, *Review of Optometry*, April 15, 2016.
- 6 [Too much screen time is raising rate of childhood myopia](#). Keck School News (USC School of Medicine), January 22, 2016.
- 7 [Digital eye strain: prevalence, measurement and amelioration](#). By Amy L. Sheppard and James S Wolffsohn. *BMJ Open Ophthalmology*, Volume 3, Issue 1.
- 8 [Digital Media and Sleep in Childhood and Adolescence](#). By Monique K. LeBourgeois et al. *Pediatrics*, November, 2017.
- 9 [Blue light has a dark side. The effect blue light has on your sleep and more](#). Harvard Health Letter, Published: May, 2012. Updated: August 13, 2018.
- 10 [Musculoskeletal neck pain in children and adolescents: Risk factors and complications](#). By Jawad Fares, Mohamad Y. Fares, and Youssef Fares, *Surgical Neurology International*, May 10, 2017.
- 11 [Sedentary Behaviors in Today's Youth: Approaches to the Prevention and Management of Childhood Obesity: A Scientific Statement From the American Heart Association](#), By Tracie A. Barnett, et al., *Circulation*, August 6, 2018.

Further Reading and Resources:

[Guide to Classroom School Safety](#) by Cindy Eckard, Screens and Kids.

[W.H.O. Says Limited or No Screen Time for Children Under 5](#). *The New York Times*, April 24, 2019.

[Cut Back on Screen Time in 2019](#). CNN, December 29, 2018.

[Limit Screen Time among Kids, Experts Caution](#). Heart.Org, August 6, 2018.

[Documented Health Risks for Students who use Digital Devices Daily](#). Cindy Eckard, Screens and Kids (Blog), December 17, 2016.

[Gray Matters: Too Much Screen Time Damages the Brain](#). *Psychology Today*, February 27, 2014.

To Take Action:

[Tools for Parents](#)

[Tools for Educators](#)

Problems with Privacy and Misuse of Student 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. The data – collected from kindergarten to high school – may include sensitive information such as birthdates, social security numbers, disability status, behavioral information, and whether a student's family qualifies for free lunch. It can also include information gleaned from school device use, such as browsing history and contacts.

Children and their parents rarely have a say in what devices and technology programs their students use. And they rarely have the opportunity for any meaningful review of what kinds of data are collected, let alone how the data will be used. In many situations, the school employing the technology consents on behalf of the parents without their knowledge or understanding. In other cases, parents or students are directed to click on a button to consent to a complex and lengthy privacy policy written in legalese. And regardless of what's in the privacy policy, parents have no way to know whether an edtech vendor's practices actually reflect its policies.

Parents may never know the full extent of how their children's personal information may have been shared, used, misused, sold, breached, or hacked over the course of their school careers. If their children are denied entrance into the college of their choice, parents may wonder if their children's profiles were sold to universities by the College Board and ACT and used to reject their applications. If their children are turned down for their dream jobs, did the employer screen them using an online profile of their internet search history gathered by their school-issued device and purchased from data brokers? If their children's identities are stolen, was it the result of an elementary school's data breach many years ago? If their children are denied state services as an adult, could it be because of disciplinary or other incriminating information in their cumulative files held by the state education department and other agencies?

While there are federal laws – [FERPA](#) and [COPPA](#) – intended to protect children's privacy, edtech companies exploit loopholes in these laws to skirt consent, reporting, and data minimization requirements, sometimes through deceptive practices. As in many other privacy matters, the deceptive exceptions are now the true operating rule.

Parents' and advocates' concerns over the misuse and security of their children's private data center on the following issues:

Lack of Transparency: Sometimes devices are issued to students without parents' knowledge or consent. Parents are seldom informed about what apps their kids are required to use, what data is being collected, and how the data is used. With no notice or help from schools, parents are left on their own to understand the privacy implications of the technology's use. When they request this information, they are often stonewalled. And even when parents are provided with privacy policies and asked for their consent, the policies are often difficult to understand,

evasive, and incomplete. For instance, many privacy policies for edtech services do not explain why particular data are collected from students and contain unhelpful information like, “We may share this information with third parties” without ever naming those third parties or specifying why they need access to a student’s personal information.

Sale of Data to Commercial Interests: There is a thriving marketplace for student data, including sensitive information such as age, gender, location, ethnicity, religion, and hobbies. These data, which are brokered and auctioned to the highest bidders, allow commercial interests to profile and stereotype our children, and manipulate them for corporate profit and, potentially, other purposes. This typically happens without parent consent.

Data Breaches: As demonstrated by several major data breaches in the last few years, the public sector is relatively unsophisticated regarding securing the data that is collected – both by themselves and by the various software packages they employ. In many situations they are hampered by funding limitations. For example, unlike many private corporations, few, if any districts hire a single full-time employee dedicated to privacy. This lack of effective security makes children’s data susceptible to being stolen by people with malicious purposes, such as identity theft, discrimination, predation, or even blackmail. Likewise, edtech vendors themselves often skimp on encryption and other data security measures. In 2019, a Pearson data breach exposed the personal information of students at more than 13,000 schools; to make matters worse, Pearson waited several months to announce the breach publicly.

Lack of Choice: Even if a parent chooses to opt out of the use of a particular device or software, schools are often unwilling or slow to accommodate them. Parents are forced into adversarial relationships with the very people they count on to protect their child’s best interest. Even if opting out is possible, families risk the child being isolated in the classroom without suitable replacement curriculum.

Further Reading and Resources:

[Parent Toolkit for Student Privacy](#). By Fairplay and Parent Coalition for Student Privacy. Published online May 2017.

[Educator Toolkit for Teacher and Student Privacy: A Practical Guide for Protecting Personal Data](#). By Parent Coalition for Student Privacy and the Badass Teachers Association. Published online October 2018.

[Spying on Students: School-Issued Devices and Student Privacy](#). By Gennie Gebhart, Electronic Frontier Foundation, April 13, 2017.

To Take Action:

[Tools for Parents](#)

[Tools for Educators](#)



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 Derrendinger
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

Fairplay Staff

Josh Golin
Melissa Campbell
Sam Garin
David Monahan
Jean Rogers
Rachel Franz
Rinny Yourman



www.fairplayforkids.org | info@fairplayforus.org
89 South Street, Suite 403, Boston, MA 02111