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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.

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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@commercialfreechildhood.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 the Campaign for a Commercial-Free Childhood.

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 effects 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.*

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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.

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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.

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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.

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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).

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- 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).

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To Take Action:

Tools for Parents

Tools for Educators

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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 classwork 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 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.

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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)

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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

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.

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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)

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- 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 CHILD birth 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)

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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.
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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.
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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

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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 Campaign for a Commercial-Free Childhood 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.

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Introduction to Parent Tools

Whenever the question of what to do comes up, there are always three answers:

1. **ORGANIZE**
2. **ORGANIZE**
3. **ORGANIZE**

As edtech has been adopted by the vast majority of school districts in the United States, a movement to reduce its overuse has emerged. This section of the toolkit contains information about ongoing parent organizing activities around the country and resources created by those groups.

In most cases, the first thing for concerned parents to do is to set up a meeting with either school or district administrators. The purpose of an initial meeting will usually be to ask questions about the school or district's educational technology policies and practices.

If you are at that stage you have probably spoken to other parents in your school or district, but now is the time to ask for their active support. You are **much more powerful** as a group of 6 to 10 than you are as an individual. A larger group shows a busy administrator this is not a passing concern that can be ignored without consequence.

Since many parents are particularly concerned about the problems associated with social media and gaming, another approach that can be taken is to gain the school's cooperation in surveying students about the general issues surrounding screen use, both at home and in school. By feeding back the results to students, parents, and staff, all the stakeholders feel some ownership of the problem, and the issue of screen overuse can be addressed in a cooperative problem-solving manner. This may or may not lead to immediate changes in school practices and policies, but it will have opened up that subject for discussion.

Tools for Local Action

In order to build group support, you will need to be both a good listener and a persuader. To help persuade others that the cause is just and worth the fight, you may wish to use documents in "The Problem" section of the Action Kit. These summarize and reference studies that show the effects of excessive screen time on areas such as health, learning, and privacy.

One powerful way of demonstrating support to school administrators is by circulating a petition. There are a number of online tools you can use to do so. This can be done before your initial approach, or as a next step if your first approach is rebuffed. In the Action Kit, we have included several sample petitions that have actually been used across the country. Please feel free to

adapt them for your own use by changing details and language as you see fit. These same petitions can be adapted for use as letters if there are only a few signatories.

If you wish to bring handouts to a meeting, or use handouts to increase your community's understanding of the issue, the Action Kit has a selection of fact sheets, many of which were created by members of the Action Network. Since these are short, read a few and select the one which will be most helpful in your situation. Like the petitions, many of these can be edited and adapted to your own specific needs.

As your organizing intensifies, you should take every opportunity to utilize contacts with local media to state your case before the general public. This may mean talking to journalists about your petition, or requesting that they attend a meeting at the School Board. It could also include writing a letter to the editor, samples of which are included in the Action Kit.

At some point, you and your group will need to be very clear about what, exactly, you wish to see changed. A sample set of policy principles summarizes the types of changes we are advocating at the local district level and the state/legislative level. Again, feel free to adapt this to your own needs.

You may find that after exerting pressure on a school district, you will be invited to serve on a committee to review their edtech and screen time policies. If the district is truly interested in making change, you have won half the battle. The other half is making sure to set a process in place to implement the suggested changes and continually monitor the progress toward the goals you have set. In Arlington, Virginia, for example, a group of parent activists had a seat at the table and created an excellent set of recommendations for their district. They are working now to ensure that the district responds.

Some parent groups, such as Wait Until 8th and Turning Life On are particularly focused on the dangers of children's overuse of smartphones, especially gaming and social media apps. Both groups encourage families to seek peer support in delaying the use of smartphones until at least 8th grade. Allowing smartphones to be used during class exacerbates these problems, but it also has negative consequences for learning. Away for the Day provides resources and support for parents advocating for no smartphone policies in schools.

Legislative and Legal Action

Ultimately, for parents and teachers to slow the rush toward edtech, legal action may be needed. Nobody can foresee when and how this might occur. It might take the form of lawsuits against tech companies or school districts. Legislation will undoubtedly play a role.

To date, there have been several legislative efforts in the US dealing with digital devices and schools. In April 2018, Maryland passed the nation's first classroom screen safety law. The law

required the state department of education to consult with the health department and develop health and safety best practices that would address the potential harm caused by screens to students' vision and musculoskeletal systems. Unfortunately, the tech industry had undue influence in developing the guidelines, so they are not as strong or as clear as advocates had hoped. But, many view this as a good first step and a possible model for other states.

Oregon introduced similar legislation in 2019, calling for a state study to set safety recommendations for students' use of technology in schools, and allows parents to opt out if they so choose. As of this writing, it is still in committee.

Other legislation both in the U.S. and around the world has focused on excluding smartphones from classrooms, primarily as a means of preventing distraction, but also to help address online bullying. France notably took this step in 2018. Similar legislation has been passed in individual states and provinces in Australia and Canada. On the local level, restrictions on cell phone use in schools is common, but California went further and has enacted legislation asking all school districts to come up with smartphone policies to limit or prohibit student use at school.

Before legislative action on a broad scale can be achieved, other legal actions can be taken by parents who face administrators unwilling to share information about their districts' edtech policies and practices, or unwilling to consider making changes to those policies. In Eanes, Texas, for example, a group of parents has issued a Freedom of Information Act (FOIA) request seeking details of the district's edtech contracts and the analysis that was used to rationalize the purchases. If the district fails to comply with their request, a lawsuit may follow. Their strategy, which they are encouraging others to consider, is outlined in "A Possible Legal Strategy," included in this Action Kit.

The ubiquity and popularity of digital devices – and the financial and political power of the edtech industry – makes the thought of tackling the problems of our schools' excessive use of screens seem overwhelming. Undoubtedly, that is how anti-smoking activists in the 1950's felt, as well. Yet, if parents, with the support of teachers, organize themselves and insist on transparency and the utilization of hard evidence in edtech decisions, progress is more than just possible. We at the Children's Screen Time Action Network believe that eventually, either through lawsuits or by legislation, concerned parents and teachers can and will prevail.

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Questions Parents Should Ask about Edtech

Technology has many benefits, but parents are increasingly concerned about the misuse and overuse of edtech. We recommend that parents ask their child's school and school district to hold regular meetings to inform and update parents about the use of technology. Here are some important questions to ask:

1. What specific electronic devices and programs is my child using in school?
2. Are the devices being used according to manufacturers' safe use guidelines, i.e., in ways to protect children's eyes and posture? What evidence (e.g., training received by teachers, support materials available) is there to demonstrate safe use?
3. How much time per day is my child spending on an electronic device? Are there mandated breaks?
4. How much additional time, if any, is my child being asked to spend on an electronic device outside of school hours?
5. How much is the program costing the school or district?
6. What data, if any, is being collected by electronic devices and programs? When is it removed?
7. How is that data used, and does the vendor profit by using my child's data for marketing or other commercial purposes?
8. How is the school protecting my child's privacy? What measures have been taken to increase security (from breaches, ransomware, etc.) in the last two years?
9. For each specific program attached to an electronic device that my child is using, please share the purpose of the program, the reason for its inclusion in the curriculum, and evidence of its effectiveness.
10. If I choose to opt my child out of programs that depend on the use of electronic devices, what alternative forms of instruction and assessment will be made available?

If you don't receive sufficient answers to your questions, consider ***advocating*** against excessive use of online programs, or consider having your child ***opt out*** of one or more of these programs.

These questions have been adapted from materials developed by Parents Across America.

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March 9, 2019

A Guide to Classroom Screen Safety

Cindy Eckard @screensandkids

Provided to the Maryland Department of Health, the Maryland State Department of Education, and the Maryland Board of Education, Fall 2018

The links contained herein are provided for quick access to some of the more definitive or recent scientific evidence, underscoring the need for the health and safety best practices that the **Maryland General Assembly has required** the Maryland State Department of Education, with consultation from the Maryland Department of Health, to develop.

RISKS TO STUDENTS' HEALTH AND VISION

I. Myopia (refractive error; nearsightedness)

- Epidemic, nationally and worldwide; use of screens recognized internationally as major cause
- Exacerbated by fixed, near work and lack of exposure to the sun
- Genetic predisposition among Asian, African-American, and Hispanic populations
- Developmental predisposition among 11-15 year olds
- Often undetected due to lack of proper eye exams
- Blurs vision; interfering with academic, athletic abilities
- Progressive; can lead to blinding conditions such as glaucoma, retinal detachment, and cataracts

SUGGESTED MITIGATION:

- Schedule device use within grade levels to ensure routine breaks from screens on a daily basis. For instance, when device use is required in the first period, it must take place in the first 20 minutes of class. The next 20 minutes would be used without screens. Then in second period, device use would also take place during the first 20 minutes, followed by a break. Third period, the same first 20 minutes. Each grade level team could determine what part of the class they would prefer, as long as the use and breaks were consistent throughout the school day.
- Increase recess and outdoor classes. Sunshine has proven to be a key factor in the mitigation of myopia. It stimulates dopamine in the brain, which helps to curb the elongation of the eye that is taking place when the child grows. That elongation helps to create the refractive error.
- Work toward increased eye exams – not just vision screening – for all students. The schools may be unwittingly exacerbating pre-existing conditions; one-third of all students need a comprehensive eye exam.

- Begin public health information campaign to alert families to risks at school and at home from excessive screen time; strongly encourage more breaks and more outdoor play.
- Develop classroom posters that remind teachers and students to take breaks; duplicate posters as flyers to be used at home.
- Develop classroom contracts similar to those needed for science class that outline for the teacher, student, and parent what the risks and mitigating practices are regarding the safe use of the school's digital devices (emulate the approach used for lab equipment).

II. Retinal Damage from blue light exposure; associated sleeplessness

- Hazardous blue light is absorbed more by children because their lenses have yet to develop the protective pigmentation that provides adult eyes a bit of protection from retinal cell destruction caused by blue light, emitted by digital device screens.
- The light travels to the back of the eye – the macula – and the process permanently destroys the cells needed to see. This process has been recognized as part of aging. It has been called age-related macular degeneration or AMD. Today, signs of macular degeneration are being seen in much younger patients as a result of screen use.
- Blue light suppresses the production of melatonin, the hormone that regulates sleep. Sleeplessness is directly associated with anxiety, depression, poor academic performance, and obesity. Obesity is epidemic among children today, and leads to heart disease, kidney disease, and diabetes. That's why the American Heart Association published a statement calling for screen time limits for children.

SUGGESTED MITIGATION:

- Blue light filters should be installed on every school-issued digital device and made a basic requirement for all future RFPs.
- No homework should be assigned on devices. Schools cannot control the time that students use the schools' equipment, and therefore, could be contributing to the interruption of critically important healthy sleep patterns, since many students are doing homework late in the evening.
- To protect students from the serious risks posed by blue light exposure, the use of screens in the classroom should be limited to actual schoolwork; "free play" or "quiet time" should not be spent using devices.

III. Computer Vision Syndrome and **Dry Eye Disease**

- Children (and adults) blink 67% less often when using digital devices, which has caused a significant rise in dry eye disease symptoms in younger patients. Severe dry eye can permanently damage the cornea.
- Dry eye disease and computer vision syndrome are closely related since the symptoms can overlap: red, scratchy eyes, blurred vision, headaches, and tearing.
- The student's discomfort can interfere with academic performance since the child finds it difficult to concentrate. Moreover, if children are accustomed to experiencing this discomfort, many will find it "normal," and not report it to an adult.
- Sore necks, back pain, and shoulder discomfort are also related to computer vision syndrome, as those muscles can also affect a student's vision.

- Undetected, unreported chronic eye discomfort can be a sign of more serious conditions and permanently damage children's eyes and vision.

SUGGESTED MITIGATION:

- Adhere to manufacturers' safety guidelines for safe workstation settings to include monitor height, monitor angle, and proper settings for glare and contrast (and audio settings – which are often ignored but necessary to protect students' hearing).
- Review classroom seating and overhead lighting to minimize glare and reflection from windows or other light sources.
- Ensure proper ergonomic posture among students; require proper posture to avoid muscular discomfort.
- Train teachers and school nurses to recognize the signs of discomfort when children are using devices, and develop policies to offer paper alternatives whenever possible.
- Teach children to recognize and report their own symptoms of dry eye or digital eyestrain.
- Make these issues part of the overall public education component (classroom posters and letters to the home) for digital device screen safety.
- In all cases, encourage parents to provide a full eye exam for their children and establish a policy of uniform, scheduled breaks from screens throughout each school day.

ADDITIONAL CONSIDERATIONS

There are many additional health and safety concerns that must be addressed in the law's deliberations, chief among them:

- Fundamental cultural biases within the school climate that encourage ever-increasing screen use.
- Little awareness of screen addiction; it is exacerbated by the constant demand that students use devices regardless of healthier alternatives that would serve the same purpose, and also made worse with the increase of educational "gamification."
- Little understanding of the associations between screen use and mental health issues: anxiety and depression are sharply rising and suicides have tripled among teenage girls in recent years.

A clear understanding of the educational benefits and health risks posed by these devices must emerge so that they are used to their best advantage, without harming students in the process, visually, physically, or psychologically.

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Five Principles to Protect Student Privacy

The Parent Coalition for Student Privacy believes that the following five principles should be incorporated into any law or policy regarding the protection of personal student data in grades preK-12. After students reach age 18, all these rights, including those related to notification and consent, should devolve to them:

1. *Transparency*: Parents must be notified by their children's school or district in advance of any disclosure of personal student information to any persons, companies, or organizations outside of the school or district.

   All disclosures to third parties should also require publicly available contracts and privacy policies that specify what types of data are to be disclosed for what purposes, and provide a date certain when the data will be destroyed.

2. *No commercial uses*: Selling of personal student data and/or its use for marketing purposes should be banned. ***NO advertising should be allowed on instructional software or websites*** assigned to students by their schools, since ads are a distraction from learning and serve no legitimate educational purpose.

   While some of the current bills ban "targeted" ads, others ban targeted ads except for those derived from a student's one-time internet use. But how can any parent know whether an ad displayed to their child was based on data-mining their child a single time or over a longer period?

3. *Security protections*: At a minimum, there must be encryption of personal data at motion and at rest, and required training for all individuals with access to personal student data, audit logs, and security audits by an independent auditor. Passwords should be protected in the same manner as all other personal student information.

   There must be notification to parents of all breaches, and indemnification of the same.

   No "anonymized" or "de-identified" student information should be disclosed without verifiable safeguards to ensure data cannot be easily re-identified.

4. *Parental/student rights*: NO re-disclosures by vendors or any other third parties to additional individuals, sub-contractors, or organizations should be allowed without parental notification and consent (or student, if they are 18 or older).

   Parents must be allowed to see any data collected directly from their child by a school or a vendor given access through the school, delete the data if it is in error or is nonessential to the child's transcript, and opt out of further collection, unless that data is part of their child's educational records at school.

   Any data mining for the purpose of creating student profiles, even for educational purposes, must be done with full parental knowledge.

Parental consent must be required for disclosure of personal data, especially for highly sensitive information such as their child's disabilities, health, and disciplinary information.

5. *Enforcement*: The law should specify fines if the school, district, or third party violates the law, their contracts, and/or privacy policies; with parents able to sue on behalf of their children's rights as well.

Without strong enforcement provisions, any law or policy protecting student privacy is likely to be ignored.

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Exercise Your Student Privacy Rights

How can parents exercise their rights to protect their children's privacy under federal law?

First, know your rights: FERPA, PPRA, and COPPA.

Second, know that when your district or state officials tell you that their student data policies or technology initiatives are "FERPA compliant," understand that FERPA has changed over time.

Third, use the following simple forms to exercise your rights under FERPA and COPPA (for children under the age of 13).

FORMS TO USE:

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1. FERPA Letter to Request Access to/Correct Education Records Held by the State

Use this letter to request access to and correct your child's education records held by your State's Education Department.

2. FERPA Directory Information Opt-Out Form

Use this form to inform your school that they may not disclose directory information to third parties without your consent.

3. COPPA Disclosure Request Form

Use this form to request information from your school/district so you know which online programs your under-13 child is using in school, and how your under-13 child's information is being used by the operators of those online programs.

4. COPPA Exercising Rights Form

Use this form to request that your school exercise their rights under COPPA to review and delete your child's personal information collected by online programs, and prevent the online program from further using or collecting your under-13 child's personal information.

Adapted from the Parent Coalition for Student Privacy

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Sample District-Wide Recommendations

The following recommendations were developed by a group of parent activists for their Student Health Advisory Board (SHAB) in the Arlington, Virginia, public schools (APS). In the context of the Action Kit, it serves as an example of a formal statement of parents' concerns, delivered through existing channels -- i.e., "working within the system." The challenge, now, is to get the District to implement the suggested changes!

Screen Use in Schools

Members of the Student Health Advisory Board (SHAB) voted to approve the development of a new SHAB workgroup this year. The "Screen Use in Schools Subcommittee" was formed and has met several times to develop recommendations for safe screen and personal device use in schools. The intent is to add a new set of recommendations to the Wellness Policy Implementation Procedure (PIP), either in full or in part, with a reference to a more comprehensive set of guidelines published as a companion to the PIP. The draft recommendations are divided into the following areas:

1. Health and wellbeing of students
2. Teacher training
3. Collaboration with APS technology committee, teachers and stakeholders
4. Supporting documentation

1. Health and Wellbeing of Students

Low/No-screen option

All parents are entitled to request a low/no-screen option for their child. This option will be presented in the first day packet. APS will develop guidelines to accommodate. No child should be withheld a device that helps them access their learning, nor forced to use a device that may exacerbate a diagnosed condition, as agreed upon through 504, IEP, health plan, or parental request. Proper computer configurations need to be offered in classrooms for children.

General use of screens in APS

Because real-life and multi-sensory experiences have been proven to be more meaningful than learning experiences on electronic devices, screens should be used for specific purposes rather than as a replacement for hands-on, project-based learning. Authentic books (paper) have been proven to be more effective in reading processes and acquisition. Screens and educational apps lack multisensory input and pose health risks, so screens should be implemented only when other methods of meeting curricular objectives have been exhausted. Diverse modalities for learning will be offered, with screens not being a choice at times. Personal devices brought from home will not be allowed in class.

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Time on devices: per session and per day

Classrooms must implement scheduled and staggered screen use. In this way, breaks will be embedded throughout the day. Schedule device use within grade levels to ensure routine breaks from screens on a daily basis. For example, when device use is required in the first period, it must take place in the first 20 minutes of class. Then in second period, device use would also take place during the first 20 minutes, followed by a break. Each grade level team can determine what part of the class they prefer, as long as the use and breaks are consistent throughout the school day. The American Academy of Pediatrics (AAP) suggests a daily digital plan, where homes and schools collaborate on the quantity received per day to maintain a healthy average.

Safe configurations for every classroom

The State of Virginia requires a ratio of 1 computer to every 5 students. Each classroom needs to have these computers in the proper configurations. Classrooms should have a cluster of safely configured computers with time limits and intentional use:

1. Place a blue light filter on the screens.
2. Make sure the monitor is at eye level when seated in front of the screen.
3. Keep monitor at least 20 inches from eyes (adult arm's length).
4. Use a chair that can adjust in height to the child's sight.
5. Minimize reflections and screen glare by adjusting contrast and brightness settings and the light in the room (lamps, overhead, sunshine, etc.) to match the lighting on the screen. The screen and room lighting should be similar.
6. Ensure the feet are resting flat on the floor.
7. Keep track of time with a timer.
8. Consider setting a volume limit for headphones.

School issued devices should stay at school

Safe computer configuration cannot be assured at home, nor can the schools control the time the school device is used by a student. School device use could be contributing to the interruption of critically important healthy sleep patterns, since many students are doing homework late in the evening.

Consistency across schools

All APS Schools and Programs at Elementary, Middle, and High School levels need to follow the Policy Implementation Procedures for best outcomes in student wellbeing and academic performance.

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2. Teacher Training

As technology is constantly changing and new research shifts our understanding of best practices, teachers and staff shall participate in ongoing training regarding health and safety issues associated with children's use of digital devices. When devices are used in schools, teachers shall ensure that students heed manufacturers' guidelines when using school-issued devices and adhere to best practices as put forward by pediatricians, ophthalmologists, and other medical professionals. Teachers will take into account the published ergonomic considerations from the manufacturer. Teachers will model screen hygiene at school when using their own devices. Classroom posters showing proper computer configuration should be in sight for easy reference. Teacher training will also include best practices for identifying and reducing improper/excess screen use among students that contributes to distraction and limited attention span in class.

3. Collaboration with Stakeholders

SUS aims to work in tandem with APS tech personnel, teachers, parents, and health care professionals to create a committee of experts to continue to monitor how technology is being implemented in the schools – its positive and negative impacts to the growth and development of the whole child and the community at large. SUS also believes an educational technologist would be helpful on staff.

4. Supporting Documentation (links):

Ergonomics

Personalized Learning and the Digital Privatization of Curriculum and Teaching

Groundbreaking study examines effects of screen time on kids

Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study

Seeing the Light – Myopia Is on the Rise, and Screens May Be to Blame

ACTION REQUESTED

1. Review Screen Use in School Subcommittee recommendations and update the Wellness PIP with associated content.
2. Monitor the latest data and research on personal electronic devices and their effect on growth and development.
3. Support teacher training and materials for authentic learning experiences.

4. Promote best practices in screen hygiene through modeling, training, and advocacy (i.e., “devices down and heads up,” active listening, face-to-face social interactions – generally being fully present in the company of others).
5. Inform parents about software platforms and learning apps that students are exposed to and seek parental approval as indicated by the software terms and conditions.

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An Informed, Research-based, Mindful, and Double-looped School Technology Program

Adapted from Turning Life On

1. ***Informed*** – Share research and articles with faculty, parents, and students to understand both the implications of screens on health and development but also how technology is designed to take advantage of users
    a. Risks
        i. Physical and mental health
            1. Physical Health: headaches, neck and back injuries, obesity, computer vision syndrome (over 3 hours per day), childhood myopia
            2. Mental health: depression, anxiety, and suicide-related outcomes and rates have increased in recent years and may be linked to screen use
            3. Sleep disturbance as a result of screens before bed and overall screen time; AAP recommends no screen time 1-2 hours before bed
        ii. Neurological development
            1. Link to addiction: reward-based gaming has been linked to structural brain changes in the reward circuitry that resemble the effects of substance addiction
            2. Memory, attention, and cognition
        iii. Symptoms of ADHD developed in teens with a higher frequency of digital media use (Ra, C., Cho, J., Stone, M. et al. (2018))
            1. The vast resources available online are affecting our thought processes for problem solving, recall, and learning. (Storm, B., Stone, S., Benjamin, A. (2016))
            2. Information overload negatively impacts long-term memory
            3. Attention, concentration, and deep thinking impacted by information overload and overreliance on internet (vs. memory) for information
        iv. Social emotional development
            1. Emotional cues/empathy and screen time
            2. Inappropriate content exposure, such as porn and hate speech
    b. General brain development and technology
        i. Media multitasking
        ii. Higher thinking, executive functioning, impulse control
    c. Economy of attention and persuasive design
        i. Devices and apps are designed for ease of use. Students only need "practice" for some technology skills. Learning how to operate a device or use PowerPoint, for example, are skills they can quickly learn when developmentally appropriate. These are not skills that build on themselves, like math or reading.

   ii. Persuasive design: psychologists, neuroscientists, game theorists developing tech to be addictive. More you play = more money they make.
d. Gamification and motivation
   i. Pending research is examining how reward-based educational gaming affects the intrinsic motivation of students. Known as the overjustification effect, studies have shown that giving kids rewards reduced their desire to do the same task without rewards.
   ii. "Constant Flow" or "The Zone" and motivation: state between anxiety and boredom. External motivation vs. intrinsic motivation.
e. Precautionary Principle implies that there is a social responsibility to protect the public from exposure to harm, when scientific investigation has found a plausible risk.

2. ***Thoughtful, Research-based*** – Choosing the right technology, at the right time, to enhance, enrich, and supplement learning without abandoning proven analog pedagogy
   a. Enhance or enrich the learning experience
      i. Ted Talks, global communication
      ii. Coding, robotics, 3D printing
      iii. Multi-sensorial and multidisciplinary experiences (music, art)
   b. Supplement (not replace or displace) traditional learning with both digital and analog skill development
      i. "A" tool, not "The" tool: identifying when apps are helping students learn and when they are not. Providing other options and empowering students to try something new (i.e., Quizlet, Reflex Math).
      ii. Handwriting and typing
         1. Encourage handwriting for deeper thinking and bigger ideas before typing final drafts
         2. Use handwriting to practice capitalization, punctuation, spelling
         3. Use handwriting to strengthen fine motor skills
         4. Research has indicated that the physical process of forming letters when writing (which becomes fluent around age 10) is an important part of encoding letters and sounds, which impacts the development of letter recognition and literacy. "Keyboards cannot replicate the inherent cognitive and educational benefits that handwriting provides." (Mann et al. 2015)
         5. With respect to aspects of word recall, there may be certain cognitive benefits to handwriting which may not be fully retained in keyboard writing (Mangen, A., Oxborough, G. (2015))
      iii. Notetaking
         1. Research suggests that taking longhand notes is more effective than typing for learning and retaining information (process of summarizing and categorizing information based on previous knowledge)

2. Students who had laptops and devices removed from class performed significantly better in exams than those with both restricted and unrestricted access (Carter et al. (2016))

iv. Analog and digital reading
1. Studies suggest that our brains process information differently when reading analog print and digital print
2. Readers recall details of written information based on where in the text it appeared (Rothkopf, E. (1971))
3. Observations of tenth grade students participating in a study revealed students who read on a computer had a harder time finding the answers and couldn't flip back and forth between pages (Mangen, A., Walgermo, B., Brønnick, K. (2013))
4. Analog reading drains mental resources, negatively impacting memory
5. Annotating, underlining, writing in margins all help students better process and remember what they've read

c. Develop processes for evaluating and teaching apps/online tools
i. Pros/cons, appropriate duration
ii. Identifying essential online tools and skills, and building those into the curriculum (i.e., coding, research, typing)
iii. Teaching students how to use apps/online tools appropriately and effectively
iv. Avoiding using technology for the sole reason that it's "cool," engaging, or easier

d. Find the balance
i. We do not know which materials are better delivered digitally; we can make assumptions but technology is changing quickly and science is slow to keep up
ii. Develop mechanisms for evaluating screen use by students so balance can be adjusted over time (i.e., what online tools are necessary (for example, when typing an essay), and what are not (for example, when submitting math homework digitally))
iii. Respect "media-lite families" and students who show signs of addiction
iv. Provide offline and non-digital options for students
v. Minimize online homework in order to help students minimize distractions and help parents attempting to monitor and limit students' overall screen time

3. ***Mindful*** – Many professionals believe mindfulness to be the antidote to too much screen time and schools are implementing practices to help students manage stress
a. Employ mindfulness strategies to avoid distractions/multitasking
b. Single-task, removing notifications, unnecessary apps (i.e., text messaging)
c. Choose to engage vs. respond automatically to notifications
d. Use meditation, breaks, and power hours in order to be more efficient when using technology
e. Practice pausing and self-reflecting

4. ***Double-loop***
    a. Implement student-guided "Tech Talks"
        i. What's working? What's not?
        ii. How does screen time make them feel?
        iii. How do they feel when other people are using screens?
        iv. What do the studies tell us? Based on experience, do they agree?
    b. With students, self-reflect on knowledge and how we acquire knowledge
        i. Reading digital vs. print
        ii. Handwriting notes
        iii. Focused studying
    c. Partner with parents
        i. How is school-related screen time going at home?
        ii. What concerns do parents have about screen time?
        iii. How can parents and schools support each other to keep students safe?

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Citizens' Resource Guide: A Possible Legal Strategy when Districts Refuse to Supply Information

There may be times when parents' efforts to effect positive change – by asking questions about their district's technology policies and practices – are stopped at the front gate, with the district refusing to even share basic information. Despite this stonewalling, parents need ***not*** *stop organizing. In fact, though the work may be arduous, there are tools parents can use to insist on full transparency, and potentially get a poorly conceived program suspended. This document, pursued by activists in the Austin, Texas area, describes their attempt to use the Texas Public Information Act to gain access to records about the district's use of technology. These activists were concerned about children being exposed to inappropriate content, including pornographic and violent images. A similar strategy could be employed by parents concerned about marketing in educational materials, platforms that compromise students' privacy, or simply platforms or materials that encourage screen time without sufficient proof that they will effectively aid in education.*

Factual Background

The Eanes (TX) Independent School District had a 1:1 iPad program for all students, K-12. A 6-year-old viewed pornography on his school mandated iPad in class for two weeks before a teacher was alerted and notified the parents. Subsequent discussions among parents and the administration showed that the 1:1 program was implemented recklessly without apparent regard for applicable privacy laws or compliance with the governing terms of service. Further, this was far from the first incident of a student viewing explicit material on a school-mandated device: these problems were swept under the rug for years, and included young people being exposed to extremely violent videos, the exchange of sexual messages between minors and adults, and all manner of bullying and cheating, all on school-issued devices, either at home or at school.

The Texas Public Information Act and equivalent laws in your state

Every state has laws designed to allow members of the public to access public information, including from public school districts. (These laws may have other names in other jurisdictions, and are sometimes colloquially known as Freedom of Information Act or FOIA laws. They are referred to generically as "public information laws" in this guide.) Texas Public Information Act summarizes the reasons for these laws as follows:

Under the fundamental philosophy of the American constitutional form of representative government that adheres to the principle that government is the servant and not the master of

the people, it is the policy of this state that each person is entitled, unless otherwise expressly provided by law, at all times to complete information about the affairs of government and the official acts of public officials and employees. The people, in delegating authority, do not give their public servants the right to decide what is good for the people to know and what is not good for them to know. The people insist on remaining informed so that they may retain control over the instruments they have created.

Texas Public Information Act, Section 552 of the Government Code

Acts of your local public school district qualify as "official acts of public officials and employees," and it is your right as a member of the public to know about them.

Please note, however, that public information laws vary from state to state, so **be sure to familiarize yourself with the laws *in your state*.** It is also important to review any guidance prepared by your state attorney general or other body charged with enforcing the public information laws.

Here are links to freedom of information laws by state. Here is a direct link to Texas's Public Information Act (PIA), and the Attorney General's PIA Handbook. There are likely to be similar resources for you to use in your state. **Please use the provided materials as a guide, and only copy and paste verbatim where consistent with your state's laws and the facts of your situation.**

Using the state of Texas as an example, this short guide illustrates how to use public information laws to get information from your public school district about their use of technology in the classroom.

Strategy

The strategy has two parts: a "TOS (Terms of Service) Request" part, intended to effectuate immediate change for the upcoming school year, and a "Show the Program's Worth" part, which aims to uncover all deliberations and communication related to the introduction of the program, and might lay the groundwork for a future lawsuit.

- We as parents are entitled to information about any technology that is introduced into our children's classrooms that will enable us to evaluate its safety and merits.
- We need full disclosure and discussion about the risks and potential benefits of the technology prior to its institution. There should be no rush to implement technology, then ad hoc reacting to the problems.
- It is unacceptable to shift an even greater burden to teachers to ensure safe use.
- Until the administration gets up to speed and can provide us with this information, we insist that the District suspend the 1:1 program (or use of a particular platform or app, etc.).

- If, after a thorough and transparent review process, the technologies are found to have benefits worthy of the risks, a technology program can be rebuilt with rigorous training and full transparency going forward.

TOS Request. The goal here is to utilize your state public information law to request the information to which you are entitled about which digital services your children are using, insist that your district abide by the providers' own terms of service, and withhold your consent where you can. No school district should be able to override a parent's explicitly withheld consent.

This may create a lot of work for the administration in collecting and reviewing terms of service for many apps installed on their platforms. In a responsibly administered program, providers' terms of service would already be collected, vetted, and made publicly available on districts' websites. But since many districts may have neglected to collate this information ahead of time, it may be hard for them to collect and supply this information.

If the district argues that it is too burdensome for it to identify the terms of service for each app, website, and service used on its device, this is all the more reason to suspend the program until the district gets a better grasp.

Show the Program's Worth. This second part is concerned with forcing the district to prove its claims about the efficacy of its 1:1 program or whatever edtech you are seeking more information about. You can request any presentations or research shared by edtech vendors with your school. You can also request communications between the vendor and school officials or between school officials when discussing the technology or technologies you are seeking information about, as well as emails between school officials when they were considering whether to adopt the technology. You might also request any evaluations concerning the effectiveness of the technology in meeting specific learning objectives. If your school is responsive, the documents they provide may bolster your arguments for eliminating or reducing a particular technology's use.

The Eanes parents' request can be found here. Please note that this request consisted of hundreds of questions: the parents made the point in an attached letter that if the program was being administered in a responsible way, the abundant information they requested would be readily at hand and easy to provide. However, asking for that much increases the odds both that you will anger your district and that they will stonewall, so more targeted requests may be more effective.

Some Thoughts about Tactics: Filing a public information request may engender an adversarial, if not hostile response from a school district. For that reason, parents are encouraged to talk through the ramifications of what is likely to be seen as an escalation by the school district. While school districts have a legal obligation to respond, and there may be criminal penalties for failing to respond, your district may be unused to responding to such

requests and may fail to meet its legal obligations. It is important to remain diligent, and remember: you have a right to this information!

If you decide to move forward with making requests, the following will improve your chances of obtaining the information you seek.

- Seek out partners – other parents, lawmakers, school board members, school administrators, and/or teachers who share concerns about the issues at stake.
- Cultivate local reporters to maximize the public impact of your request.
- If you have a parent group organized around screens in schools in your community, share the requests with those parents after they've been served on the board.
- Since a lawsuit may eventually be required, if you have connections with a local lawyer or firm that might be willing to represent you – *ideally pro bono* – identify them early on.
- Most states have a hotline for resolving disputes over public information requests: use it until you get the records you're entitled to.
- States may impose a criminal penalty on public officials that fail to adequately respond to public information act requests. You may use it to get the appropriate law enforcement authorities involved if you are being stonewalled.

It will be important to set certain expectations. Expect that your administration may be defensive and less than forthcoming, despite their legal obligation to give you the requested information.

And expect that your administration will attempt to shift the costs of responding from them to you, including, most likely, the cost of its employees' time. A common tactic to avoid responding to a public information request is to demand the requester pay a very large fee up front. (State laws about whether and how much a school district can charge to respond to a public information act request vary.) That this is a transparently abusive tactic that goes against the spirit and letter of public information laws does not mean that it's rarely used.

For parents who are frustrated by their school district's pattern of concealing information that they have a right to know, public information requests can be an excellent tool. As the old saying goes, knowledge is power!

Using Surveys as a Tool to Help Families and Schools

By Emily Cherkin, Founder of The Screentime Consultant, LLC

When I was in graduate school for my Master's in Education, a professor shared a story about working with fifth graders. My professor was teaching a social and emotional concept and wanted the students to see how their peers in the class would respond, while keeping individual answers anonymous. So he conducted a survey (off-line, in that era), and then compiled student responses into a chart. He then presented the group's responses back to the class. Though I do not remember the details of the survey, I vividly recall his observation that because the students could see a general "snapshot" of their classmates' opinions, their willingness to buy into the lesson was greater. Had he informed the students of his own ideas about the answer, he believed, they would not have had the same connection to the information.

As a former teacher myself, I have found this to be true: most kids, in most age groups, are far more interested in the feedback and opinions of their peers than in what the teacher has to say. This does not mean needing to change the way a teacher teaches; rather, it is an opportunity to use the students' ideas and opinions as a way to get group discussions going. Now, as a frequent speaker at schools around the country on the topic of screen-based technology as it impacts teaching and parenting, I have found that the use of anonymous surveys is an excellent tool to draw an audience by making the talk about their own unique community. Like my professor who saw his fifth graders engage when the lesson was about them specifically, so too are my audiences drawn toward hearing about the attitudes around screen-based technology in their own schools.

I currently utilize the Google Forms tool in Google as a way to administer surveys. In recognition of the quagmire that comes with using online data collection tools or surveys, I am up front with the schools I work with about privacy risks. I do not require identifying information beyond general age group (i.e., middle school vs. high school) or school role (i.e., teacher vs. student), and in my contract with schools I stipulate both that I retain the data as proprietary information, but that I will also not share any data collected (including photos or student work) without the consent of the client.

If you are interested in using surveys as a tool to get a snapshot about an individual school's use of and attitudes about screens and technology, it is not too difficult to build a survey on Google Forms (or another similar site, such as SurveyMonkey).

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Here are a few examples of questions I ask in my surveys:

- Do you have your own smartphone?
- Per day, how many hours do you spend on screen-based technology for entertainment (or work, or school)?
- In general, how often is screen-based technology a distraction to you (or to your students or your children)?
- Do you have rules in your house (or school) related to screen-based technology use? And are those rules enforced?
- Do you have a screen in your bedroom every night?
- As a parent/teacher/student, what is one positive thing about technology or screen time? What is one challenge?

Here are a few tips about building surveys that have helped me:

- Use neutral language, especially in answer choices (e.g., Always, Sometimes, Occasionally, Never). Google Forms and SurveyMonkey offer standardized responses to multiple-choice questions, and they help keep the language neutral.
- Mix up the question types: "check a box" or "how often do you…" and have one or two short answers.
- Limit the survey length. Kids especially do not want to spend a long time answering questions on a survey.
- Be prepared for pushback from all groups surveyed. Someone told me once, "Pushback means you've touched a nerve." Use that as an opportunity to discuss.
- Google Forms and SurveyMonkey are useful tools for compiling the data into charts or graphs that illustrate a response. For example, you can give audiences a snapshot of how many students in X age group have screens in the room at night. This can be very helpful for those parents in particular who feel or hear that they are the "only" parent with a no-screens-in-the-bedroom rule.
- Normalize the experience: it is valuable to see how people respond, but it is also important to say that this is something we all struggle with, and no one is going to get it perfectly right. Also, every person is impacted differently by quantity, amount, quality, etc., when it comes to screen time, so take the survey responses with a grain of salt.
- I have found it helpful to provide my audiences with a survey summary. Many schools find this information useful in addressing the screen-based technology questions.
- Remember that surveys like this are intended to get the "big picture." It is okay if there are outliers. Students in particular care about the trends: what "everyone else" is doing.

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Superintendent Letter (short)

Dear Superintendent [NAME],

We are writing to you to express our deepest concern regarding the overreliance of our public schools on screen-based learning.

Our children are already spending an enormous amount of time on screens outside of school – averaging nine hours per day for high school students, according to one study. Excessive screen time has been associated with many maladies, including anxiety and depression, executive function disorders, eye disorders, and screen addiction. While screens in schools are not the only source of these problems, our schools share a responsibility to make sure they do not exacerbate such issues.

There are several steps that we suggest [DISTRICT NAME] take immediately to decrease the danger posed by the excessive use of screens by children:

- Eliminate the use of online textbooks. Students dislike them and e-books require them to be up late on screens. The blue light from screens suppresses melatonin production, contributing to sleep deprivation.
- Eliminate computer-based homework, which results in students spending more time on distracting, non-school activities at night (another contributor to sleep deprivation) and which makes parent monitoring of their child's screen time difficult.
- Allow children to opt out of computer-based activities if requested by a parent or recommended by a child's ophthalmologist, pediatrician, or mental health professional.
- Follow the device manufacturer's guidelines for the safe use of digital devices, including all ergonomic and eye protection measures.

We would be very happy to meet with you to discuss these concerns at your earliest convenience.

On behalf of our children, we implore you to take this issue seriously.

Signed,

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Superintendent Letter (long)

Dear Superintendent [NAME],

We are writing to you to express our deepest concern regarding the overreliance of our public schools on screen-based learning.

Our children are already spending an enormous amount of time on screens outside of school – averaging nine hours per day for high school students, according to one study. Excessive screen time has been associated with many maladies, including anxiety and depression, executive function disorders, eye disorders, and screen addiction. While screens in schools are not the only source of these problems, our schools share a responsibility to make sure they do not exacerbate such issues.

The drive to continually increase students' technology use is understandable, as our district endeavors to prepare our children for the 21st century economy. Unfortunately, computer-based learning has no demonstrable advantage over low-tech methods. Indeed, we believe that many screen-based activities in school actually result in greater distraction and decreased focus on the part of students. Plus, students are already having difficulties in these areas because of the hyper-stimulating effects of interactive media used at home. Furthermore, much of the technology that students are being introduced to in school will certainly not be in use by the time our students enter the workforce. And software designers are making it ever easier to get up to speed on their platforms, so teaching children how to use their tools is hardly necessary.

There are several steps that we recommend the district take immediately to decrease the danger posed by the excessive use of screens by children, including:

- Following the device manufacturer's guidelines for the safe use of digital devices, including all ergonomic and eye protection measures.
- Eliminating the use of online textbooks. Students dislike them and e-books require them to be on screens often late into the night. The blue light from screens suppresses melatonin production, contributing to sleep deprivation.
- Eliminating computer-based homework, which results in students spending more time on distracting, non-school activities at night (another contributor to sleep deprivation) and which makes parent monitoring of their child's screen time difficult.
- Allowing children to opt out of computer-based activities if requested by a parent or recommended by a child's ophthalmologist, pediatrician, or mental health professional.
- Requiring students to put away all smart phones during the school day.
- Collecting data (anonymously) from students and teachers about school-related time spent on digital devices – both in-class and at-home – and making the data available to parents by class and by grade.

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- Conducting regular educational and professional development activities to inform teachers, students, and families about the proper use of digital devices, the ways to safeguard student privacy, and the dangers of excessive screen use.

We would be very happy to meet with you at your earliest convenience to discuss these concerns. We can also provide you with references to scientific studies that support the concerns we have expressed.

On behalf of our children, we implore you to take this issue seriously.

Signed,

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Moratorium Request

Dear Superintendent and School Board Members,

Thank you for all the work you do to support our children.

As a community we all need to question the current use and future planned investments to bring more electronic devices into our children's classrooms.

Independent peer-reviewed research by education experts has *not* validated tablets, laptops, or smartphones as effective teaching tools.

Given that research *has* identified serious learning, physical health, mental health, and behavioral and privacy concerns connected to children's use of digital devices, we should employ the **precautionary principle**: the idea, based in environmental science, that the introduction of a new product or process whose ultimate effects are disputed or unknown should be resisted. With little or no benefit and potential harm, it is prudent to pause and limit the use of digital devices in our district until such time as these devices can be shown to be safe for children.

We welcome the opportunity to present some of the research that supports our request at the next scheduled School Board meeting. Until that time, we insist that a viable low-tech option be created for students wishing to opt out of the 1:1 learning program.

Signed,

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Discontinue the Current 1:1 iPad Program for Grades K-5

Parents, teachers, pediatricians, librarians, art therapists, poets, doctors, and taxpayers of [PLACE or DISTRICT] are asking that **[SCHOOL or DISTRICT] discontinue immediately the current 1:1 iPad program within [SCHOOL or DISTRICT] elementary schools for grades K-5**.

The [1:1/Digital Learning/Personalized] program(s), which put personal iPads in the hands of elementary school children over the past [#] years, has not only cost millions for devices, staffing, and infrastructure, but it has put children into a social experiment that is likely to harm their physical and social-emotional wellbeing. Recent studies have led other school systems to greatly reduce device exposure or ban them entirely.

We urge [DISTRICT] to address the following:

1. Eliminate the current 1:1 model for grades 2-5 and classroom iPad use in grades K-1.

2. Have an established, equitable and proven curriculum that demonstrates how the use of these devices furthers children's academic success and actually teaches "technology," i.e., coding, robotics.

3. Ensure [DISTRICT] has procedures for [DISTRICT] parents to opt out of iPad use and out of the devices being sent home.

4. Set restrictions on the number of hours per day children spend on digital devices (including expected homework time with the device).

5. Have [DISTRICT] send a waiver to explicitly list the potential risks of iPad usage, including, but not limited to, attention issues, screen addiction, blue light effects on eyesight, insomnia, and effects on reading acquisition.

6. Ensure [DISTRICT] has a consistent and sensible technology policy that applies to our youngest learners – no iPads during indoor recess or open-ended iPad usage (YouTube, gaming, etc.). Reading should be from real books until further evidence that reading from electronic devices does not stunt reading acquisition.

Considerations:

These devices are being used as testing devices in the name of "personalized learning." This program has been implemented via trial and error for [#] years, using our children as the guinea pigs. We know what positively influences our children's development: having wonderful teachers who are able to spark their love of learning; exposure to and connection with the outdoors; developing social skills and relationships with peers; freedom to solve problems creatively; engagement with their surroundings in a way that involves the senses and the whole body.

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A global report by the Organization for Economic Co-operation and Development (OECD) suggests iPads work against all of these elements, and are therefore not a constructive medium with which to be occupying so much of our youngest students' time.

What parents are seeing within [DISTRICT] is significantly inconsistent from school to school – some schools allow the devices to go home; some small groups of kids learn to code robots; some classrooms barely use the devices outside of state-mandated testing. When devices are required to be used at home, we also see conflict arising from unwanted additional screen time.

Exposure to technology has its place and can be incorporated through shared carts of iPads or a wired computer lab for special technology sessions (i.e., coding, keyboarding, internet safety, or use as a research source).

Budget Concerns for [DISTRICT] & [COUNTY]:

We have to prioritize funds. The costs of infrastructure and personnel to maintain individual devices for students in grades 2-5 is significant and will continue to increase as our school population grows. (Costs increase even more if the schools also provided the filters and peripheral devices necessary to avoid the development of eye and musculoskeletal problems in students.) This is not a good use of our tax dollars – especially for a program that has not proven its benefit since it began.

The opportunity cost and unintended consequences of 1:1 programs are of grave concern. We strongly suggest halting further implementation and pulling back when it comes to our youngest learners.

Thank you for your prompt attention to this matter,

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Low-Screen Instruction Option for Elementary and Middle School

Dear Superintendent [NAME] and School Board Members,

As parent/s whose child/ren have been impacted by the 1:1 program, we ask that the [SCHOOL DISTRICT] offer parents a choice to place their children on a low-screen instructional track for all core subjects.

Ensure the Basics for our Youngest Learners

Our children's education has been shortchanged by the heavy use of digital devices. Studies have shown that computer-based instruction does not aid learning, and, in fact, frequently hinders it. What's being called "personalized learning" is anything but "personal." Computerized instruction on iPads is not the way most children learn best.

Examples of Bypassed Skills: Writing and Reading from Books

[DISTRICT] promises mastery of cursive handwriting in third grade in the Program of Studies and has not delivered consistently, leaving many children all the way through high school not able to write or even read cursive. Cursive and printing have been shown to help students retain information (note-taking), improve reading fluency and improve fine motor skills.

Similarly, reading from screens is not the same as reading from print. Studies show that reading – especially nonfiction – from screens is more superficial and less likely to result in retention of information.

How much have we lost as we try to leap ahead?

What skills are lost by replacing authentic experiences with screens? Most kids are coming into [DISTRICT] with substantial "screen" experience and need not be taught how to use them. Teachers are seeing the lack of "soft skills" required for success, like: resolving peer conflicts, attending to a non-multimedia lesson, sustaining effort, and good motor skills.

Research shows devices being correlated with serious health problems and developmental and cognitive delays. Myopia, sleeplessness, anxiety, internet addiction, and attention issues are a few of the associated risks that we need to be concerned about. In several states, including Maryland, Oregon, and California, legislation concerning the use of devices in schools has either been passed or is under consideration.

As parents, we want low-screen instruction for our elementary and middle school learners while encouraging a love of learning and curiosity. **This track would include increased interaction with teachers and peers, less multiple choice testing, daily reinforcement of handwriting and writing throughout their subjects, reading from print, and developmentally appropriate use of technology when it can be used in transformative ways.**

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Help us ensure a solid foundation of the basics for our youngest learners.

Thank you,

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Sample Petition – Summit Learning

Dear School Board Members,

We, the undersigned residents of _____, have become increasingly concerned with the decision by school administrators and the Board of Education to pilot the Summit Learning Program, and with the implementation of the Summit platform in our elementary and middle school classrooms.

Despite assurances from administrators and certain Board members about the success of the pilot program, discussions with parents, students, and teachers have revealed a number of inconsistencies between the information being provided by school administrators and the actual experience of using the Summit platform as applied in _____ 's classrooms. For example,

- It remains unclear whether classwork, testing, and assessment questions are consistent with focus area content.
- The effectiveness of controls implemented to restrict access and ensure age-appropriateness and quality of content has not been established.
- It is not clear whether our elementary and middle school classrooms have sufficient teacher and staff resources to conduct the individual instruction and mentoring time to all students that the Summit platform recommends.
- Administrators have not established the degree to which personally identifiable data on students is protected, and whether the disclosure of data required by the district's contracts with Summit is in compliance with applicable laws.

While we appreciate the challenges of providing effective instruction to students with wide-ranging abilities and interests, we believe that school administrators have not given sufficient consideration to whether the Summit platform is an appropriate tool to address those challenges in _____ at this time. We further believe that the chosen approach of experimenting with firewalls and addressing the correctness and consistency of content on an *ad hoc* basis while implementing the pilot is not appropriate. Lastly, the lack of consistency in implementation, inadequate training of teachers and staff, continued exposure to inappropriate material, and poorly-designed Focus Area content and assessment questions are leading to increasing reports of student anxiety, frustration, and disinterest.

We therefore respectfully request that _____ Public Schools suspend their pilot of the Summit platform until such time as a more detailed assessment of the appropriateness and effectiveness of content, and of the effort and resources needed to correctly implement the platform, can be completed. This exercise must be transparent and include input from teachers, administrators, parents, and students.

Thank you for your prompt attention to this matter,

Opción de programa de instrucción con uso mínimo de pantallas para la escuela primaria e intermedia

Estimados miembros de la Junta Escolar y Superintendente [nombre del Superintendente],

Como padres de niños que han sido impactados por el programa 1.1, solicitamos que el [DISTRITO ESCOLAR] ofrezca a los padres la opción de ubicar a sus hijos en un programa de instrucción con uso mínimo de pantallas para todas las materias de estudio básicas.

Asegurar las materias básicas para nuestros estudiantes más jóvenes

La educación de nuestros hijos ha sido reducida por el uso excesivo de dispositivos digitales. Los estudios han mostrado que la instrucción basada en la computadora no ayuda al aprendizaje, y que, de hecho frecuentemente la impide. El ahora llamado "aprendizaje personalizado" es cualquier cosa menos "personal". La instrucción computarizada en los iPads no es la forma en que la mayoría de los niños aprenden mejor.

Ejemplos de habilidades ignoradas: lectura y escritura de libros

El [Distrito] promueve el dominio de la escritura cursiva en tercer grado en el Programa de estudios y eso no se ha realizado consistentemente, dejando a muchos niños, desde la primaria hasta la preparatoria, sin que puedan escribir e incluso leer en cursivas. La escritura cursiva e impresa ha demostrado que ayuda a los estudiantes a retener la información (tomar notas), a mejorar su fluidez en la lectura y a mejorar habilidades motoras finas.

De manera similar, la lectura en pantallas no es lo mismo que leer versiones impresas. Los estudios demuestran que leer –especialmente no-ficción- desde una pantalla es más superficial y menos probable que resulte en retención de la información.

¿Qué tanto hemos perdido mientras intentamos adelantarnos?
¿Qué habilidades se pierden cuando se reemplazan experiencias autenticas con el uso de pantallas? La mayoría de los niños llegan al [DISTRITO] con una experiencia substancial en el uso de "pantallas" y no necesitan ser enseñados en como usarlas. Los maestros están observando una falta de "destrezas sociales personales" que se requieren para el éxito escolar, como: resolver conflictos con sus compañeros, asistir a una lección sin medios electrónicos, realizar esfuerzo sostenido, y habilidades motoras buenas.

La investigación demuestra que el uso de dispositivos electrónicos se correlaciona con serios problemas de salud y de desarrollo, así como retrasos cognitivos. Miopía, insomnio, ansiedad, adicción al Internet, y problemas de atención son solo algunos de los riesgos asociados, y por los cuales debemos preocuparnos. En varios estados, incluyendo Maryland, Oregón y California, ya se están considerando o se están aprobando leyes relacionadas con el uso de dispositivos en las escuelas.

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Como padres, queremos para nuestros estudiantes de escuela primaria e intermedia* una instrucción con uso mínimo de pantallas, donde a la vez se les inculque el amor al aprendizaje y la curiosidad. **Este programa podría incluir una mayor interacción con compañeros y maestros, menos pruebas de opción múltiple, reforzamiento diario de la escritura a mano y la escritura a lo largo de todas las materias, lectura de libros impresos y un uso de la tecnología apropiado al desarrollo, siempre y cuando pueda usarse de manera transformadora.**

Ayúdenos a garantizar una base sólida de educación básica para nuestros alumnos más jóvenes.

Gracias,

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Opt Out Petition

By signing this petition, you are indicating your interest in your child being placed in a **no iPad** / **no Chromebook** / **no smartphone** classroom in [SCHOOL DISTRICT].

Signed,

Name	**Email**
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Sample Letter to the Editor

Dear [EDITOR],

Screens can play a role in the classroom, but all too often children are bored in screen-based educational programs, the learning is superficial, and the supposed benefits of "personalized learning" are elusive. Students, parents, teachers, and taxpayers have been sold a Big Tech bill of goods – while the very creators of these devices and computer programs are enrolling their own children in screen-free schools.

Studies show that more screen time leads to worse school performance – not to mention the troubling evidence of health effects on developing brains and eyes.

It is time to act. We cannot allow our children to be experimented on any longer. Parents, teachers, and health professionals must join together to slow the profit-driven, wholesale insertion of digital technology into our children's classrooms.

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Sample Letter to the Editor

Kudos to [NAME] for writing about the new evidence showing that screen time is affecting [SUBJECT]. (See, "Article Name", *Newspaper name*, Date)

The most troubling question, though, is why haven't we acted sooner to limit children's exposure to digital devices. Abundant peer-reviewed scientific studies show that screens are harming our children, whose developing brains and eyes are more sensitive to environmental impacts than those of adults. Other studies have shown dramatic correlations between teen screen use and a rise in anxiety and depression, teen suicide, and gaming addiction.

The ubiquity and popularity of digital devices – and the financial and political power of the tech industry – make the thought of tackling the problem seem overwhelming. Undoubtedly, that is how anti-smoking activists in the 1950s felt as well. But isn't it time we stopped using our children as canaries in the coal mine when it comes to screen time?

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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.

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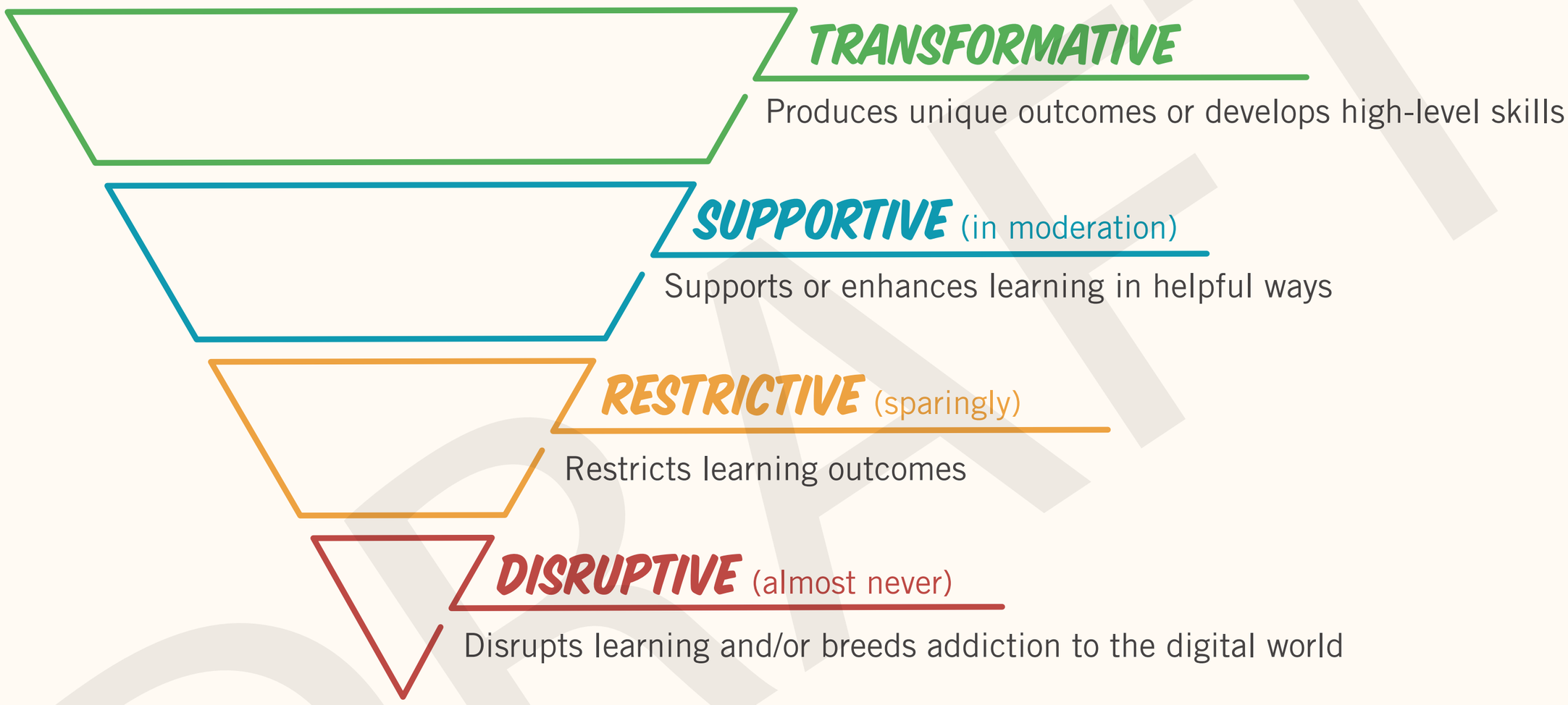
Regarding Use of Student Data:

- *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.

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

www.everyschool.org

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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.

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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.

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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). Alarmingly, 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.

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

Katie Talarico, MSEd

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).

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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

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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, and look for our book, Screen Schooled*, available now in bookstores and Amazon.*

tools for educators

screens in schools
action kit

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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:

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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.

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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.

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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

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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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Contents

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[1] – 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."[2] 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.[3]

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[4] 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.[5]

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.[6] Another 2014 study conducted by the University of California, Los Angeles

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[1] 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

[2] https://www.aps1.net/DocumentCenter/View/6491/iAndover1to1-Learning-Initiative_Final-06-11-15?bidId=

[3] 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-scree.html

[4] 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/

[5] https://www.tandfonline.com/doi/abs/10.1080/00220973.2016.1143794?journalCode=vjxe20

[6] 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.[7] 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.[8] 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."[9] 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."[10] 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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[7] https://www.sciencedirect.com/science/article/pii/S0747563214003227
[8] https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/
[9] Ibid.
[10] https://www.sciencedaily.com/releases/2017/11/171130170212.htm

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For a copy of the complete report, please email the Andover Education Association: andovereducator@gmail.com.

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 <u>educator</u>.

<u>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.</u>

<u>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.</u>

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

Revised C-12

C-12 <u>DIGITAL TECHNOLOGY</u> COMPUTER SAFETY

The Massachusetts Teachers Association strongly urges that school committee, boards of trustees and the governing boards of higher <u>education governing bodies</u> 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, <u>as well as social, emotional and psychological impacts</u>.

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."[1]

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."[2]

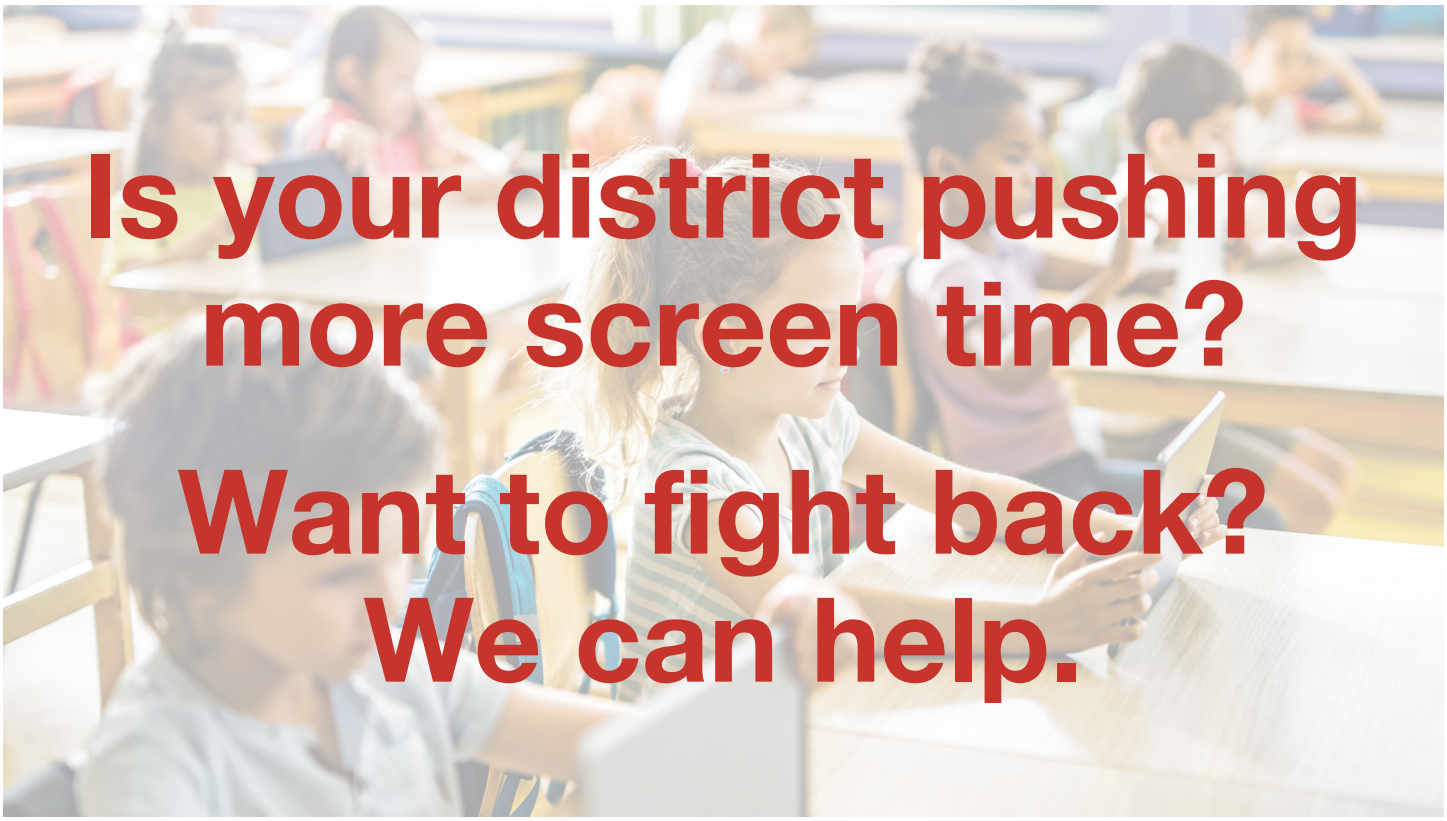
End-of-year high-stakes tests will be replaced by testing and monitoring of students every day. The data from all those daily tests will belong to the commercial enterprise that provides the computer setup and software programs. But if they sell the data from your third-grader it will only be for the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

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.



Is your district pushing more screen time?

Want to fight back? We can help.

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

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."

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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."

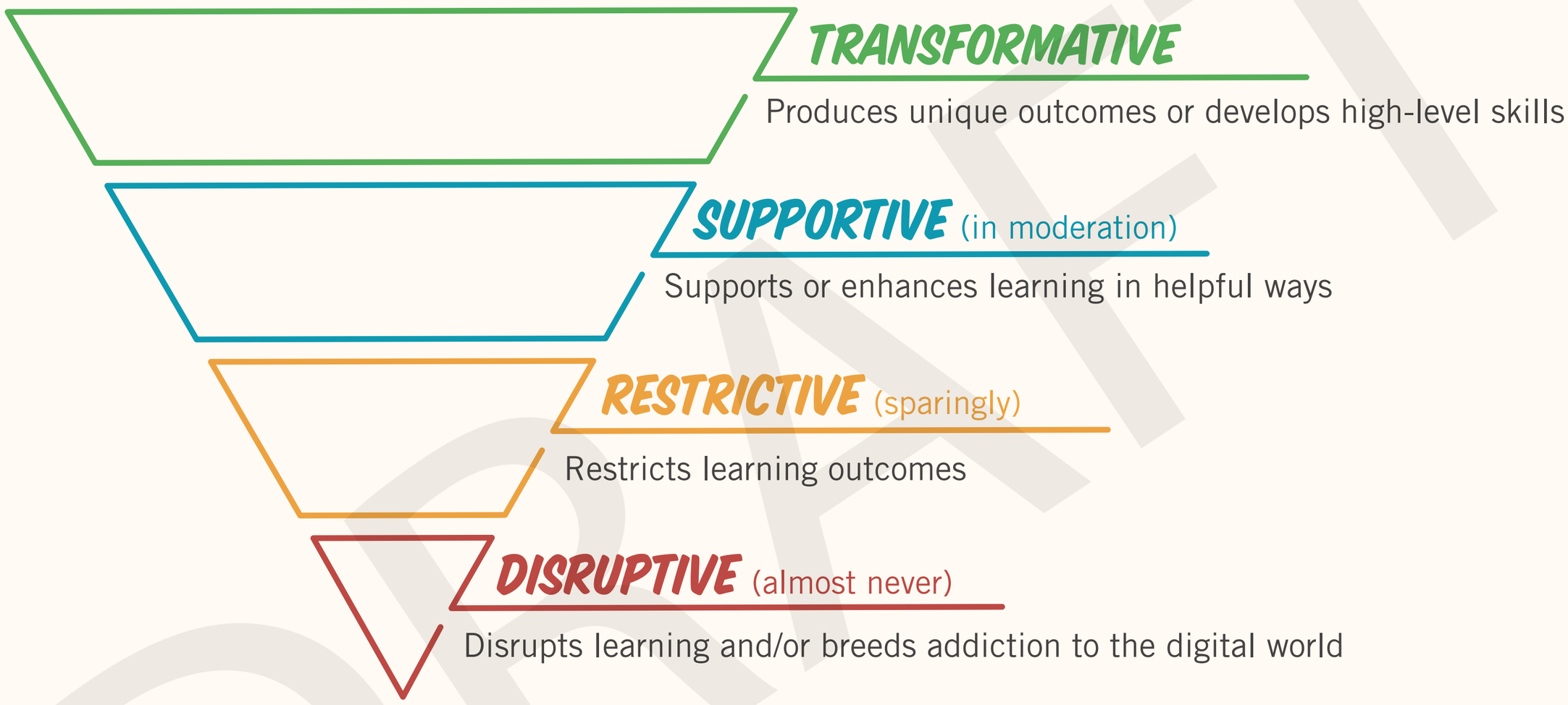
Personalized Learning and the Digital Privatization of Curriculum and Teaching
Faith Boninger, Alex Molnar, and Christopher Saldana, National Education Policy Center
April 30, 2019
From the introduction: "Personalized learning programs are proliferating in schools across the United States, fueled by 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

www.everyschool.org

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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.

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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.

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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). Alarmingly, 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.

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

Katie Talarico, MSEd

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).

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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

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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, and look for our book, Screen Schooled*, available now in bookstores and Amazon.*

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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.

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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.

further reading

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Comprehensive Overviews

If you wish to learn more about the complex issues surrounding the digital transformation of K-12 education, the following comprehensive overviews are a good place to begin.

Personalized Learning and the Digital Privatization of Curriculum and Teaching
National Education Policy Center
Faith Boninger, Alex Molnar, and Christopher Saldana
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."

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."

Asleep at the Switch: Schoolhouse Commercialism, Student Privacy, and the Failure of Policymaking
National Education Policy Center
Faith Boninger, Alex Molnar, and Kevin Murray.
August 15, 2017
From the introduction: "Digital technologies used in schools are increasingly being harnessed to amplify corporate marketing and profit-making and extend the reach of commercializing activities into every aspect of students' school lives. In addition to the long-standing goal of providing brand exposure, marketing through education technology now routinely engages students in activities that facilitate the collection of valuable personal data and that socialize students to accept relentless monitoring and surveillance as normal. This...report on schoolhouse commercialism trends examines how technological advances, the lure of "personalization," and lax regulation foster the collection of personal data and have overwhelmed efforts to protect children's privacy."

What is Summit Learning and why should parents and students be concerned about its use?

Parent Coalition for Student Privacy

Updated October 2019

Overview: Summit Learning represents the most comprehensive, well-financed effort to introduce computer based “personalized learning” into America’s public schools. Sponsored by the Chan Zuckerberg Initiative and the Gates Foundation, among other Silicon Valley philanthropies, Summit has faced strong parent and student opposition as it attempts to spread its model across the country.

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Recommended Reading

Books: Screens, schools, and kids

Patricia A. Cantor and Mary M. Cornish, *Techwise Infant and Toddler Teachers: Making Sense of Screen Media for Children Under 3*

Infants and toddlers – the so-called "touchscreen generation" – are living in a screen media-saturated world. They are the target market for ever growing numbers of apps, TV shows, electronic toys, and e-books. Making sense of the complex issues associated with screen media in the lives of children under 3 can be challenging for the adults who care for them. There is a strong need among teachers (and parents) of infants and toddlers for guidance related to the appropriate role of screen media in early care and education. This book, by Action Network Advisory Board Member Patricia Cantor and co-author Mary Cornish, explores why and how infant and toddler teachers need to be techwise in order to understand the implications of screen media for children's learning and development.

Joe Clement and Matt Miles, *Screen Schooled: Two Veteran Teachers Expose How Technology Overuse Is Making Our Kids Dumber*

As two veteran teachers who have taught thousands of students, Joe Clement and Matt Miles have seen firsthand how damaging technology overuse and misuse have been to our students. Rather than becoming better problem solvers, kids look to Google to answer their questions for them. Rather than deepening students' intellectual curiosity, educational technology is too often cumbersome and distracting, causing needless frustration and greatly extending homework time. Rather than becoming the great equalizer, electronic devices are widening the achievement gap. On a mission to educate and empower parents, Clement and Miles provide many real-world examples and cite multiple studies showing how technology use has created a wide range of cognitive and social deficits in our young people. They lift the veil on what's really going on at school: teachers who are powerless to curb cell phone distractions; zoned-out kids who act helpless and are unfocused, unprepared, and antisocial; administrators who are too-easily swayed by the pro-tech "science" sponsored by corporate technology purveyors. They provide action steps parents can take to demand change and make a compelling case for simpler, smarter, more effective forms of teaching and learning.

Victoria L. Dunckley, MD, *Reset Your Child's Brain: A Four-Week Plan to End Meltdowns, Raise Grades, and Boost Social Skills by Reversing the Effects of Electronic Screen-Time*

Increasing numbers of parents grapple with children who are acting out without obvious reason. Revved up and irritable, many of these children are diagnosed with ADHD, bipolar illness, autism, or other disorders but don't respond well to treatment. They are then medicated, often with poor results and unwanted side effects. Based on emerging scientific research and extensive clinical experience, integrative child psychiatrist Dr. Victoria Dunckley has pioneered a four-week program to treat the frequent underlying cause, Electronic Screen Syndrome (ESS).

Richard Freed, *Wired Child: Reclaiming Childhood in a Digital Age*

Kids' obsessive use of video games, social media, and texting is eclipsing their connections with family and school – the two most important contributors to their wellbeing. The result: a generation of kids who suffer from soaring rates of emotional and academic problems, with many falling prey to an epidemic of video game and internet addictions. Child and adolescent psychologist Richard Freed offers a practical guide to building your child's bond with family and fostering school success amid the allure of digital screens.

Nicholas Kardaras, MD, *Glow Kids: How Screen Addiction Is Hijacking Our Kids – and How to Break the Trance*

We've all seen them: kids hypnotically staring at glowing screens in restaurants, in playgrounds and in friends' houses – and the numbers are growing. Like a virtual scourge, the illuminated glowing faces – the Glow Kids – are multiplying. But at what cost? Is this just a harmless indulgence or fad like some sort of digital hula-hoop? Some say that glowing screens might even be good for kids – a form of interactive educational tool. Don't believe it. In *Glow Kids*, Dr. Nicholas Kardaras examines how technology – more specifically, age-inappropriate screen tech, with all of its glowing ubiquity – has profoundly affected the brains of an entire generation.

Jean Rogers, *Kids Under Fire: Seven Simple Steps to Combat the Media Attack on Your Child*

When it comes to digital devices, kids want them. Their friends have them. And the ages get younger and younger every year. The more options, the more parents feel out of control. Through humorous, poignant stories of her own children and those of families she has coached, CCFC's own Jean Rogers reveals an easy, step-by-step process that works for any shape family and any lifestyle. Learn the Kids Media Diet Litmus Test and other simple ways to raise healthy children in the digital age.

Naomi Schaefer Riley, *Be the Parent, Please: Stop Banning Seesaws and Start Banning Snapchat: Strategies for Solving the Real Parenting Problems*

In *Be the Parent, Please*, former *New York Post* and *Wall Street Journal* writer Naomi Schaefer Riley draws from her experience as a mother of three and delves into the latest research on the harmful effects that excessive technology usage has on a child's intellectual, social, and moral formation. Throughout each chapter, she backs up her discussion with "tough mommy tips" – realistic advice for parents who want to take back control from tech.

Tiffany Shlain, *24/6: The Power of Unplugging One Day A Week*

Internet pioneer and filmmaker Tiffany Shlain takes the reader through a journey she has forged with her family over a 10-year period of having a Tech Shabbat. One day a week has completely changed their lives. Shlain offers lessons they have learned and a blueprint for how to do it in your family, how to get a spouse or children on board, and how to enjoy the results – a more connected, less virtual, and meaningful practice in a complex and overwhelming world.

Catherine Steiner-Adair, *The Big Disconnect*

Clinical psychologist Catherine Steiner-Adair takes an in-depth look at how the internet and the digital revolution are profoundly changing childhood and family dynamics, and offers solutions parents can use to successfully shepherd their children through the technological wilderness.

Sherry Turkle, *Reclaiming Conversation: The Power of Talk in a Digital Age*

We live in a technological universe in which we are always communicating. And yet we have sacrificed conversation for mere connection. Renowned media scholar Sherry Turkle investigates how a flight from conversation undermines our relationships, creativity, and productivity – and why reclaiming face-to-face conversation can help us regain lost ground.

Jean Twenge, *iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy – and Completely Unprepared for Adulthood – and What That Means for the Rest of Us*

With generational divides wider than ever, parents, educators, and employers have an urgent need to understand today's rising generation of teens and young adults. Born in the mid-1990s to the mid-2000s and later, iGen is the first generation to spend their entire adolescence in the age of the smartphone. With social media and texting replacing other activities, iGen spends less time with their friends in person – perhaps why they are experiencing unprecedented levels of anxiety, depression, and loneliness. A highly readable first look at how today's members of iGen – the children, teens, and young adults born in the mid-1990s and later – are vastly different from their millennial predecessors, and from any other generation, from the renowned psychologist and author of *Generation Me*.

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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.

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