

Children and Screen Time



A Summary from the
Santa Clara County
Office of Education

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Background

The rapid influx of new screen devices, such as tablets and smart phones, poses a special challenge for many parents and educators in Santa Clara County.

Children today experience technological advances on a scale that few of us could imagine just a decade ago. More than 30% of children in the United States play with mobile devices while still in diapers, according to the children's advocacy group Common Sense Media¹. Tweens log 4 1/2 hours of screen time a day, seven days a week, 52 weeks a year. For teens, it's even higher: nearly seven hours a day. And that doesn't include time spent using devices for school or in school. Nearly 75% of 13- to 17-year-olds have or have access to smartphones, according to the Pew Research Center², with 24% of teens saying they go online "almost constantly." How can we best support children's growth, development, and learning in a world so radically changed by technology?

Medical Perspective

In 1999, the accepted recommendation was for parents and teachers to actively curtail children's screen time. At that time, the American Academy of Pediatrics (AAP) issued widely accepted guidelines which discouraged *any* media use by children younger than 2 years. For older kids, the AAP recommended limiting screen time to just two hours a day. In 2016, the guidelines will be changed so that they reflect a more nuanced approach³.

In a recent Forbes Magazine article, announcing these upcoming changes, Jordan Shapiro, Professor and Digital Learning Coordinator for Temple University's Intellectual Heritage Department starkly wrote that "Screens are now a ubiquitous part of our lives. It is a technology that has been completely integrated into the human experience. At this point, worrying about exposure to screens is like worrying about exposure to agriculture, indoor plumbing, the written word, or automobiles. For better or worse, the transition to screen based digital information technologies has already happened and now resistance is futile. The screen time rhetoric that accompanied the television—when this technology was still in its formative age—is no longer relevant."⁴

Pediatricians, said Dr. Ari Brown, chairperson of the AAP's group investigating media use and children in an interview with CNN, still don't want young children watching hours of mindless television or YouTube videos on their tablets⁴. The latest neuroscience research shows that the more a digital experience approximates live two-way communication, the more a child younger than 2 will understand and process it, Brown said. For instance, when a child is sitting and watching a TV program or a video on an iPhone, there's not a

¹ <https://www.commonsensemedia.org/research/zero-to-eight-childrens-media-use-in-america-2013>

² <http://www.pewinternet.org/2015/04/09/teens-social-media-technology-2015/>

³ <http://pediatrics.aappublications.org/content/128/5/1040.full>

⁴ <http://onforb.es/1P5ZqLc>

great deal of activity in the brain. But when the toddler is watching someone they know or even someone they don't know on a webcam during a video chat, "there's a whole lot of brain activity going on," Brown said. "What we learn is that we as humans are very much social beasts and we are really learning by engaging with other humans and so the more that a digital technology can approximate that, the more a young child can get out of it," Brown said.⁵

"Media is just another environment and parents just need to know that they're going to use the same rules in this different environment," said Brown. "And so you would sit down in the real world and play with your child, you would pretend and have a tea party. Well the same rules apply. You don't just park your kid in front of a screen and make them go play by themselves. If you sit down and play with them on that screen, on that technology, they're going to get more out of it."

Brown also said parents need to do their homework when it comes to finding apps for their children. There are thousands of apps that are listed as educational, but there is little research validating their quality. "There's a lot more to education than swiping and pointing and that does not make an educational app," she said. The doctors' group recommends parents look to other organizations that focus on curating and rating content for children, including Common Sense Media.

For older kids, "What we're really wanting to put out there is that life balance is important and everything in moderation and so yeah, you do want to keep an eye on how much time your child is spending in front of a screen, just as you want to keep an eye on how much they're doing something else," Brown said. "You want to make sure that they have a balance to their life."

It's also important to know when to turn the screens off. "There's a time and place that's appropriate and you want to have tech-free zones," she said, which could include the family dinner table and moving laptops, tablets and phones out of children's bedrooms overnight.

The quality of content your child engages in is also more important than the platform or the time they spend with it, writes Brown, so parents are advised to prioritize how their children spend their time rather than just setting a time limit. The overall message, said Brown, is that while technology keeps changing, parenting has not: The importance of setting limits, teaching kindness and being involved won't change based on the latest app children are using.

Recommendations for Parents

The Santa Clara County Office of Education (SCCOE) supports the following key messages being promoted by the AAP prior to the official release of their recommendations in October 2016.

⁵ <http://www.cnn.com/2015/10/06/health/screen-time-rules-change-pediatricians/index.html>

- **Media is just another environment.** Children do the same things they have always done, only virtually. Like any environment, media can have positive and negative effects.
- **Parenting has not changed.** The same parenting rules apply to your children’s real and virtual environments. Play with them. Set limits; kids need and expect them. Teach kindness. Be involved. Know their friends and where they are going with them.
- **Role modeling is critical.** Limit your own media use, and model online etiquette. Attentive parenting requires face time away from screens.
- **We learn from each other.** Neuroscience research shows that very young children learn best via two-way communication. “Talk time” between caregiver and child remains critical for language development. Passive video presentations do not lead to language learning in infants and young toddlers. The more media engender live interactions, the more educational value they may hold (e.g., a toddler chatting by video with a parent who is traveling). Optimal educational media opportunities begin after age 2, when media may play a role in bridging the learning achievement gap.
- **Content matters.** The quality of content is more important than the platform or time spent with media. Prioritize how your child spends his time rather than just setting a timer.
- **Curation helps.** More than 80,000 apps are labeled as educational, but little research validates their quality. An interactive product requires more than “pushing and swiping” to teach. Look to organizations like Common Sense Media⁶ that review age-appropriate apps, games and programs.
- **Co-engagement counts.** Family participation with media facilitates social interactions and learning. Play a video game with your kids. Your perspective influences how your children understand their media experience. For infants and toddlers, co-viewing is essential.
- **Playtime is important.** Unstructured playtime stimulates creativity. Prioritize daily unplugged playtime, especially for the very young.
- **Set limits.** Technology use, like all other activities, should have reasonable limits. Does your child’s technology use help or hinder participation in other activities?
- **It’s OK for your teen to be online.** Online relationships are integral to adolescent development. Social media can support identity formation. Teach your teen appropriate behaviors that apply in both the real and online worlds. Ask teens to demonstrate what they are doing online to help you understand both content and context.

⁶ www.commonsensemedia.org

- **Create tech-free zones.** Preserve family mealtime. Recharge devices overnight outside your child’s bedroom. These actions encourage family time, healthier eating habits and healthier sleep.
- **Kids will be kids.** Kids will make mistakes using media. These can be teachable moments if handled with empathy. Certain aberrations, however, such as sexting or posting self-harm images, signal a need to assess youths for other risk-taking behaviors.

Recommendations for Educators

Santa Clara County educators play a key role in teaching digital and media literacy to their students. As technology has rapidly entered the classroom, educators guide students to engage in appropriate, positive, and safe ways to utilize these helpful digital resources.

The goal of every educator is to help each student learn at a rate that meets, or ideally exceeds, grade level standards. The one size fits all industrial era model of education designed to educate students *en masse* resulted in significant achievement gaps between subgroups of students. These achievement gaps translate to opportunity gaps as students grow into adulthood. While certainly not a silver bullet, the appropriate and innovative use of technology can help every student become an engaged and efficient learner.

- **Personalized and Adaptive Instruction increases learning.** Personalized learning is the antithesis of the one size fits all (or one size fits most) approach. By personalizing learning for each student the learner receives differentiated instruction, flexible pacing, and immediate instructional interventions and supports. Using digital curriculum and supports that adapt to the learners’ immediate conceptual understanding and skill level, the student is provided with high quality lessons and the teacher is provided critical diagnostic data for targeted face-to-face instruction.⁷
- **Fully Online Learning enhances offerings.** Fully online instruction takes place primarily over the Internet using an online delivery system through which students access course content. Online learning in K-12 always has a certificated teacher as the teacher of record. Many fully online courses meet the UC and CSU’s a-g requirements and are accepted by those institutions. Some schools use fully online courses to enhance course offerings that would not otherwise be offered. Many schools utilize online courses as a means for students to recover credit lost through failing a face-to-face course.⁸
- **Blended learning models are key.** Blended learning, sometimes referred to as hybrid learning, is a combination of face-to-face and online learning. Blended learning affords each student a more personalized learning path within the parameters of a brick and mortar school setting and is the most common way to personalize learning. In blended learning settings teachers can more effectively target face-to-face time with each student to support their learning. Research conducted by Michael Horn and Heather Staker identified four blended learning

⁷ iNACOL www.inacol.org/resource/mean-what-you-say-defining-and-integrating-personalized-blended-and-competency-education/

⁸ Keeping Pace with K-12 Digital Learning: An Annual Review of Policy and Practice (12th ed.). Evergreen Education Group.

models: rotation, flex, a la carte, and enriched virtual. Traditional public schools as well as charter schools that utilize blended learning strategies to personalize learning use one or more of these basic models.⁹

- **Effective use of Learning Technologies.** Driven in part by mandated computer adaptive assessments, schools have seen a large influx of technology devices on their campuses. But just as any book can be misused as an instructional resource, so can a technology device. Prior to integrating technology into a lesson (as with any instructional resource) the teacher should clearly identify the learning outcomes the use of the device will achieve. Many teachers in the county have earned certification as digital educators through the Leading Edge Certification program offered through the SCCOE. Such professional learning has helped teachers leverage technology to engage students in the 4 C's: collaboration, communication, critical thinking, and creativity that are widely regarded as pillars for success in today's connected world.¹⁰
- **Protect student data privacy.** The migration toward personalized and adaptive learning requires the collection of data about each student's progress beyond what has traditionally been collected and stored electronically. In addition, some common education applications also collect student data. Educators are advised to stay current on laws that impact student data privacy to ensure compliance with applicable law and education code.¹¹
- **Respect face-to-face interaction.** Supplement face time with screen time. Students benefit from face-to-face interaction as they develop social skills, build relationships, and learn to appreciate the human experience in the real world. Manipulating physical objects and building things from scratch, including prototypes, provide valuable experiences for students of all ages.
- **Remember to balance with physical activity.** Physical activity is highly important to the developing bodies and minds of children. Schools can play an important role in insuring that we make the best use of new technologies while also staying active. Many research studies show that kids who take breaks from their class work to be physically active during the school day are often better able to concentrate on their school work.¹²

Health and Safety

What do experts say about exposure to screens, wireless technology, and cell phones?

Although not well publicized, all manufacturers of wireless devices have warnings which describe the minimum distance devices must be kept away from users in order to not exceed the as-tested limits for exposure to the low levels of radiation emitted. If users are

⁹ www.christenseninstitute.org

¹⁰ <http://www.leadingedgecertification.org/>

¹¹ www.cetpa.net/CETPA/Resources/Journal/Issue1/Legal-Technology-Services-Agreements-Education-Lawyer-As-Frenemy.aspx

¹² https://www.healthiergeneration.org/news_events/2015/05/21/1268/balancing_screen_time_and_physical_activity_from_a_kids_perspective

concerned about avoiding even potential health and safety risks, two simple steps can be taken to minimize exposure:

- Reduce the amount of time using the device; and
- Use the speaker mode or a headset to create more distance from the device.

A review of the current research findings of recognized authorities was conducted, and brief summaries follow. The consensus seems to be that most safety concerns are unwarranted, although further research and monitoring is encouraged.

Food and Drug Administration (FDA):

“X-radiation emissions from properly operated TV sets and computer monitors containing CRTs are well controlled and do not present a public health hazard. It is important to note also that flat panel TVs incorporating Liquid Crystal Displays (LCD) or Plasma displays are not capable of emitting x-radiation. As such these products are not subject to the FDA standard and do not pose a public health hazard.”¹³

“According to current data, the FDA believes that the weight of scientific evidence does not show an association between exposure to radiofrequency from cell phones and adverse health outcomes. Still, there is consensus that additional research is warranted to address gaps in knowledge, such as the effects of cell phone use over the long-term and on pediatric populations.”¹⁴

Federal Communications Commission (FCC):

“There is no scientific evidence that proves that wireless phone usage can lead to cancer or a variety of other problems, including headaches, dizziness or memory loss. However, organizations in the United States and overseas are sponsoring research and investigating claims of possible health effects related to the use of wireless telephones.”¹⁵

American Academy of Ophthalmology (AAO):

“There is no convincing scientific evidence that computer video display terminals (VDTs) are harmful to the eyes. The common complaints of eye discomfort and fatigue are associated with ergonomic factors such as distance from the person to the monitor, monitor height and brightness, etc.”¹⁶

Health Physics Society:

“The only measurable radiation emission from a laptop computer is radio waves. We are constantly exposed to such radiation from all directions and multiple sources, including radio and TV signals, electronic appliances, etc. Current data indicate that these are not harmful to our health. There is, however, quite a bit of heat generated within the laptop while it is on. It is for this reason manufacturers recommend against extended periods of use with the computer on your lap.”¹⁷

¹³ <http://www.fda.gov/Radiation-EmittingProducts/ResourcesforYouRadiationEmittingProducts/ucm252764.htm>

¹⁴ [http://www.fda.gov/Radiation-](http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116335.htm)

[EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116335.htm](http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/ucm116335.htm)

¹⁵ <https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety#Q11>

¹⁶ <http://hps.org/publicinformation/ate/faqs/computervdtscreen.html>

¹⁷ <http://hps.org/publicinformation/ate/faqs/computervdtscreen.html>

U.S. Centers for Disease Control and Prevention (CDC):

“There is no scientific evidence that provides a definite answer to that question. Some organizations recommend caution in cell phone use. More research is needed before we know if using cell phones causes health effects.”¹⁸

Environmental Protection Agency (EPA):

“Scientific opinions vary regarding risks associated with radiofrequency (RF) radiation exposure from cell phone use. While some studies have shown a correlation between the occurrence of certain adverse health effects and long-term use, a definitive cause and effect relationship has not been established.”¹⁹

World Health Organization (WHO):

In 2011, the World Health Organization’s International Agency for Research on Cancer (IARC) classified radiofrequency fields in Group 2B, possibly carcinogenic to humans. “IARC interprets the 2B classification as meaning there is limited evidence showing radiofrequency carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals.”²⁰

In 2014, a WHO fact sheet stated, “A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established as being caused by mobile phone use.”²¹

American Cancer Society (ACS):

“The IARC classification means that there could be some cancer risk associated with radiofrequency energy, but the evidence is not strong enough to be considered causal and needs to be investigated further. Individuals who are concerned about radiofrequency energy exposure can limit their exposure, including using an ear piece and limiting cell phone use, particularly among children.”²²

National Institute of Environmental Health Sciences (NIEHS):

“The weight of the current scientific evidence has not conclusively linked cell phone use with any adverse health problems, but more research is needed.”²³

Conclusions

Teachers, parents, health providers, and child development experts all agree that the media children use can have a profound impact – both positive and negative – on learning, social development, and behavior. Technology is also an integral component of schools today, and applying the sensible recommendations of experts in medicine and education can increase the likelihood of positive outcomes.

¹⁸ http://www.cdc.gov/nceh/radiation/cell_phones_faq.html

¹⁹ <https://radiation.zendesk.com/hc/en-us/articles/211658428-Where-can-I-find-information-about-cell-phone-safety-concerns->

²⁰ <http://www.who.int/mediacentre/factsheets/fs193/en/>

²¹ <http://www.who.int/mediacentre/factsheets/fs193/en/#>

²² <http://pressroom.cancer.org/releases?item=312>

²³ <http://www.niehs.nih.gov/health/topics/agents/cellphones/index.cfm>