

## 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.

### Countering the Counter-arguments:

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

### Evidence from Recent Studies:

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

- Due to growing [concerns over screen time](#), parents who live or work in tech-heavy Silicon Valley are increasingly opting for low-tech home and school lives for their own children. They see the addictive nature of electronic devices and how their use can engender kids who are distracted, depressed, and anxious. (6)
- Screen-time is associated with inattention problems in preschoolers: results from the April 2019 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)

## References:

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

## Further Reading and Resources:

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

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

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

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

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

## To Take Action:

[Tools for Parents](#)

[Tools for Educators](#)