

# DASHING FOR DIGITAL

## Revealing the Technological Revolution and its Effects on Childhood Development



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I recall a hot summer day as a little girl meeting my neighborhood friends outside while riding my sparkly purple bicycle. Most of my friends had similar bicycles in quality, and we often envisioned our group as the “cops” while the other kids were “robbers.” The blazing sunlight rays had turned my fair skin tone to a honey color despite my light colored shirt being used as a protective shield.

Fast forward to today, where I observe my younger siblings in the family room with their eyes glued to an iPad screen. The television is also on and it is set to the latest cartoon episode acting as background noise. Quick, instant, fatty and sugary snacks are also near to reach. The overall composition of childhood has evolved substantially from my own period as a child. The digital revolution has taken a toll on today’s children and various mobile devices are becoming ubiquitous in households.

According to Common Sense Media, a non-profit organization which advocates for child friendly media platforms, in 2017, 98% of households in the United States reported having had a mobile device that their children use daily. Common Sense Media also reports that in the start of the digital era of 2000, only 50% of American households had a mobile device. There is no doubt that there has been a rapid shift from children doing physical activities and playing outside to playing with mobile technology.

A child’s use of technology and social media applications early in life can be a precursor to delayed development seen later in life. These disturbances can be exhibited through the child’s physical, cognitive and psychological development. Examining the differences between children who are adapted to using technology on a daily basis versus those who abstain from use can further provide an understanding of how technology affects child development, and can supplement

advocacy for limiting screen time use.

Many of the current technological devices are causing children to remain glued to their family room couches. More time spent sitting in front of the television, iPad and computer results in less time spent outside, engaging in physical activities. According to the Lancet Child and Adolescent Health Journal, 85% of girls and 78% of boys are not meeting the recommendation of at least one hour of physical activity per day; the lack of physical activity is further perpetuated by the current digital revolution. Although awareness of the growing consumer society is out of a child’s control, it is possible for technology to be adapted to improve overall health. A well-known company, Meta Platforms, has developed popular Oculus virtual reality video gaming, which has encouraged gaming requiring physical activity. According to Meta Platforms, similar virtual reality devices have allowed children to still experience engaging and adventurous activities, in addition to requiring physical activity upon each screen time use.

An increased rate of caloric intake and sleep deprivation with the use of technological devices has also been observed. Children become distracted with various social media applications, videos and gaming, unaware of the amount of food servings consumed. As a result, it can be argued that technology can become a precursor to obesity rates seen in children. There is a similar dependent relationship with sleeping patterns and food consumption. According to the National Institute of Health, sleep deprivation can cause regulating hormones ghrelin and leptin to increase, causing more feelings of hunger. In addition, a child being sleep deprived can affect their personal choice to consume more calories and select fewer nutritious foods. To combat the issue of sleep deprivation and associated binge-eating behaviors, families can incorporate nightly routines of offline technology hours prior to bedtime. The use of devices during mealtimes should be avoided and the extra time can be replaced with more family conversation and tasting of foods.

It is important to recognize the use of technological devices as a form of distraction for

children that can be detrimental to brain development. The overuse of technology causes children to have reduced attention spans because of various applications, sounds and advertisements that cause the child to be attracted by many miscellaneous clicks. A child that is constantly using screens is not able to enjoy the time spent off the screen; therefore the brain is not able to recover and go to a more relaxed state. According to the National Institute of Health (NIH), a recent study found that children under two years old spend over one hour each day in front of a screen and by age three the number exceeds three hours per day. The decision for parents and relatives to give their children technological devices should not become habitual. Additionally, the overall quality of the technology being provided to the child should be taken into account. According to Dr. Michael Rich of Clinic for Interactive Media and Internet Disorders, using technology for non-educational purposes reduces the amount of time engaging in learning activities. If technology is a replacement for actual human interaction, this can lead to negative psychological patterns to occur later in life. Although technology is on the constant rise, parents should not solely rely on these devices to comfort their children. Parents should be advised to provide their children with technology in moderation, to serve as an educational tool. Since the majority of a child’s time is spent at school and home, schools have the potential to increase educational events, which show children healthy behaviors with the use of technology. In these events, children will be able to recognize if their own technological use is beneficial or detrimental to them. In addition, with the goal of reducing screen times, schools can incorporate more clubs with physical activities.

Aside from the physical and cognitive effects that technology has on a child, it is also important to recognize the certain harms technology can have on mental health. It’s becoming more common for parents to rely on technology to comfort their kids during busy parts of their life. From the start, if a child is given a technological device for the means of comfort, the lessened time spent socializing with other human interactions can lead to greater isolation, anxiety and depression. The device has the potential to become a requirement in the child’s life in order to function properly. However, past generations lived without television, gaming consoles and computers and did not have this dependency. The youth are at a vulnerable age, and technology may arise to be a precursor to negative mental health effects. According to the Children’s Bureau Organization, 50% of lifetime mental illnesses start at the age of 14. In response to this statistic, it is essential for parents, pediatricians and schools to take precautionary steps to limit

overuse of non-educational technology.

The prevention of risky, addictive behaviors can also be minimized if parents communicate with medical providers. In a growing consumerist society, advertisements on devices are built to lure more children to remain on-screen and become attracted to add-ons. Addictive behaviors and characteristics can also be distinguished from activity patterns in the brain regions. According to NIH researcher Patricia Wallace, a recent study has shown that compulsive internet users showed much higher activity in the area of the brain that entails the brain’s reward system, while also showing overall decreased gray matter. The overstimulation of the brain’s reward system can cause a child to continue overusing technology, although the overall amount of time spent does not satisfy the brain’s pleasure for dopamine. The child then is required to change behaviors, use multiple technological devices at once and remain socially isolated. This causes the child to be prone to greater risk of depression, anxiety and other mental health illnesses.

There is no doubt that the use of technology and other mobile applications will continue to be on the rise in society. During the midst COVID-19 pandemic, the use of online schooling rates increased across the U.S and the world, allowing children to remain connected with their friends and teachers. Families were able to visually see distant family members by a single, accessible click. This historic time has provided an image of how far technology has changed, and potential future possibilities. Our children can face the future in a positive direction to use advancing technology to shape society around us and remain connected.

