

Time for a Digital Detox

A mother and father with two toddlers sit ever so quietly in a nice restaurant. No fussing, no whining. It all seems so serene.

Look more carefully and you notice the youngsters with their heads down, immersed in their tablet computers. So what exactly is the problem here?

Harried parents in North America and Europe are resorting to these digital pacifiers in ever greater number, allowing technology to intrude more into our children's daily lives. It seems so easy to give a child a mobile phone, tablet or iPad and have them entertained for hours. We even have baby proof iPad covers and iPotties that include built-in iPad stands. Yet experts agree there must be limits or we risk harming our children's brain development in ways that we are only beginning to comprehend.

The numbers are staggering. A recent study by Common Sense media reports that in the US, children ages 0 -8 have doubled their technology usage from 2011-2013. Likewise, the amount of time they spend on these devices has tripled. In the European Union, things are no different. The London School of Economics noted that: "The substantial increase in usage by very young children has not yet been matched by research exploring the benefits and risks of their online engagement." Improved access to mobile media devices and applications has underpinned these changes. Sadly, the most common activities cited in these studies are playing games or watching video.

Still this begs the question: What is wrong with our children growing up using technology in an ever more "wired" world? Experts, such as Larry Rosen, a research psychologist and educator, break it down into several areas of concern. Greater usage of technology gives children less time to engage in creative time and play. It also prevents the active brain from calming down, a necessary process. Lastly, a child in front of a screen engages less with real people and the physical world. The consequences are not pretty.

There is no denying the seductive appeal of an educational app or e-learning on a iPad. Yet research to support any benefits from these tools is sorely lacking. Likewise, a child's play is structured by the program and no longer open-ended. These limitations on play and learning can be significant. Educators who do long term research are noting a significant decrease in younger children's creativity.

True creativity comes from freedom to simply "play" and let the mind wander. Scientists have found a Default Mode Network that operates when children day-dream and let their minds wander. According to Rachel Longford, from the School of Early Childhood Studies at Ryerson University in Toronto: "The value of

unstructured play for cognitive development can't be overstated." This is when the truly "ah ha" creative moments are born.

We have also come to devalue "down time". Excessive screen time deprives a child of necessary brain calming. The brain needs a break as it cycles from activity to rest. When it calms down, a state of involuntary attention is achieved and this is much less activating and energy sapping. The Default Mode Network is therefore enabled which fosters creativity.

The two dimensional world of the screen is also no substitute for real interaction with the physical world and other people. Children must have opportunities to explore, experiment and engage with their physical environment. In this manner, they employ all the senses, while activating and solidifying neural connections in their developing brains. This happens less in front of a screen.

Further, from an emotional standpoint, true social intelligence comes from interaction with others. There is no nuance or feedback associated with a smiley emoticon. Children who are excessively screen dependent lose their sense of context in interpersonal interaction and have reduced ability to evaluate the impact of their message. This bodes poorly for the development of future socialization skills.

Like bad tasting medicine, the solutions are not necessarily pleasant, but they will make a child's life richer and fuller. The first step is to reduce screen time. The American Academy of Pediatrics suggests that **children under the age of two never have screen time. For older children, screen time should be limited and monitored.** Rosen provides a simple prescription: "For every minute of tech use there should be an equivalent of 5 minutes spent doing something else." When appropriate alternatives are presented, these guidelines can be easier to follow. It isn't hard to find effective substitutes for screen time.

Surprisingly, experts suggest we revert back to what worked many years ago. These include classics such as Lego kits, knitting, building blocks, Play Doh and handwriting exercises, to name just a few. It would be easy to dismiss these activities as Luddite, yet real evidence justifies their use. Dr. Howard Gardner, an educational researcher, notes that knitting requires the use of both hands. Hence, both sides of the brain are engaged and performing a rhythmic activity that facilitates the development of language skills, enhances concentration and improves math abilities. A robust scientific study from the University of Washington found that block playing increased language scores in lower income children while reducing screen time. Play Doh provides active learning experiences and supports children's growth and intellectual development.

Even handwriting still matters. Unfortunately, most schools are quick to teach and promote keyboard proficiency. Yet there is evidence to suggest that different forms of handwriting stimulate and promote different neural networks.

Virginia Berninger, a psychologist at the University of Washington, has shown that when children compose text by hand, they expressed more ideas with a broader vocabulary than when the same task was performed on a keyboard. Cursive writing has been felt to help foster self-control.

Certainly there is still merit in exposing young children to these varied activities.

Screen based mobile technology is not going away. However the message is clear. The days of unlimited technology exposure, particularly in younger children, must come to an end. Achieving an appropriate balance takes concentrated effort on the part of parents and educators. There are simply too many good alternatives for us to ignore.