DOES SCREEN TIME STUNT KIDS' CREATIVITY?

DEVICES CAN SPUR THE IMAGINATION, BUT SOME FEAR THEY MAY ALSO HAMPER DEVELOPING MINDS

BY MARK YARM

IN EARLY JANUARY 2018, TWO OUTSPOKEN APPLE INC. INVESTORS made headlines with an open letter to the tech behemoth. Barry Rosenstein of Jana Partners and Anne Sheehan of the California State Teachers' Retirement System urged Apple to respond to the "growing body of evidence" that excessive smartphone use by kids has "unintentional negative consequences." They pointed to research showing that the average American teenager who uses a smartphone got their first phone around age 10 and now spends more than 4.5 hours a day on their device—and that's *not* including talking or texting. "It would defy common sense to argue that this level of usage, by children whose brains are still developing, is not having at least some impact," the investors wrote.

To bolster their argument, Rosenstein and Sheehan cited a number of other studies, including a Canadian university survey finding that 75% of teachers said their students' ability to focus on educational tasks had decreased, chiefly due to digital technologies; alarming research from San Diego State University showing that U.S. teens who spend five hours or more a day on electronic devices are 71% more likely to have a risk factor for

Pediatrician Jenny Radesky suggests that parents should play an active role in directing and monitoring their kids' device time.

suicide than those who spend less than one hour on them; and a University of California, Los Angeles, study that found that children who had attended a device-free outdoor camp for five days outperformed a control group on tests for empathy.

None of this comes as a surprise to psychotherapist Nicholas Kardaras, who says the Apple investors' letter simply validates what he has been arguing—albeit far more forcefully—for years. Kardaras is the author of *Glow Kids: How Screen Addiction Is Hijacking Our Kids—and How to Break the Trance* (2016). He has been dismissed by some as an alarmist when it comes to children and screens—he once wrote a *New York Post* op-ed titled "It's 'Digital Heroin': How Screens Turn Kids into Psychotic Junkies"—but more recently, Kardaras says, people are coming around to his way of thinking about smartphones, tablets and other such ubiquitous devices.

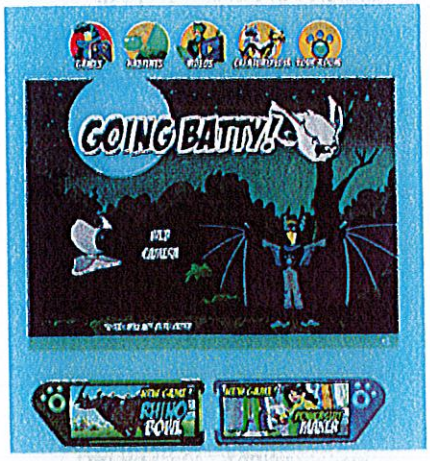
"The media are finally beginning to cover some of the negative impacts of screen time," he says. "But those stories tend to focus most on screen addiction, as well as some of the other clinical impacts like ADHD effects, depression, anxiety, etc." Meanwhile, Kardaras points out, "you don't see much talk about how screens stunt children's creativity by robbing them of the opportunity to create their own interior visual imagery in the landscape of their minds." By essentially streaming intense visual imagery into the still-developing mind of a child, he says, "we stunt the neurosynaptic development of the parts of the brain devoted to creativity—that part of the brain essentially atrophies."

Indeed, irate investors Rosenstein and Sheehan do not take Apple to task over how all this screen time affects kids' creative development. And perhaps there is good reason for that: there has been a dearth of scientific research dedicated specifically to the relationship between touchscreens and creativity. "The truth is that creativity hasn't really been

studied as a child-development psychological concept since around the 1960s," says Jenny Radesky, an assistant professor of developmental behavioral pediatrics at the University of Michigan C.S. Mott Children's Hospital.

Radesky adds that research into screens is hampered by some practical concerns—it can take years to get a thorough study up and running, for instance—and the difficulty in keeping pace with the technology. (Hard to believe, but the first iPad came out just eight years ago.) So there remain lots of unknowns about the effects of screens on kids, particularly in terms of creativity—which by its very nature is difficult to define or quantify.

Still, many researchers suggest that screens get in the way of activities like daydreaming (which can stem from boredom) and unstructured outdoor play, which help children develop their creativity and imaginations. "We tend to think nothing is happening when we're daydreaming, but the brain just totally lights up in those moments because that's when it makes connections between things it didn't see as connected," sociologist Christine Carter of the University of California, Berkeley, explained in an interview with the *Deseret News*. "Technology really impacts us in that way because it basically steals all our downtime. When kids might have been playing, daydreaming or just waiting for your parents to come pick you up—that's high creativity-building time that's now taken up by our devices."



Inspired by the PBS children's series Wild Kratts, *the Going Batty! educational app employs motion-detection technology to allow children to experience life as a bat.*

On the other hand, Sara DeWitt, vice president of PBS KIDS Digital, has a far more sanguine view of screens and creativity. Last year, she gave a TED Talk titled "Three Fears About Screen Time for Kids—and Why They're Not True." DeWitt does believe there needs to be some kind of limits on screen time and plenty of parental oversight, but she also argues that when apps "inspire kids to do something else, you can do some pretty amazing stuff."

As an illustration, DeWitt points to *Wild Kratts*'s Going Batty!, a PBS KIDS educational app that utilizes a device's camera to give kids onscreen bat wings. When PBS was testing the game with children, her favorite part was what happened after they shut down the app—and the kids continued pretending to be bats.

"They kept flying around the room. They kept veering left and right to catch mosquitoes," DeWitt recalled. "And they remembered things. They remembered that bats fly at night. And they remembered that when bats sleep, they hang upside down and fold their wings in. This game definitely got kids up and moving. But also, now, when kids go outside, do they look at a bird and think, 'How does a bird fly differently than I flew when I was a bat?' The digital technology prompted embodied learning that kids can now take out into the world."

Of course, most touchscreen apps don't work this way. For her part, the University of Michigan's Radesky says she's largely unimpressed with most of the apps that are tailored for kids. "The thing that has frustrated me the most about the way a lot of children's apps are designed is that they're overstructured," she says. "They just feed [experiences] to the child, over and over again. They often have pacing that's demanding the child follow the app's pace rather than following the child's pace." Or, as early-childhood-development expert Nancy Carlsson-Paige, author of *Taking Back Childhood*, put it in a blog piece for the *Washington Post*: "What the child does is play according to someone else's rules and design. This is profoundly different from a child having an original idea to make or do something."

Even a relatively unstructured app, like the popular Minecraft—an essentially plot-free game in which players can construct cars, furniture, homes, skyscrapers and even entire cities from virtual blocks—is no substitute for building with actual blocks, according to experts.

"Minecraft can be a great game, but [kids] need to play with Lego," Catherine Steiner-Adair, a clinical psychologist and author of *The Big Disconnect:*

Protecting Childhood and Family Relationships in the Digital Age, told the *Toronto Sun*. "For children to develop their full intellectual, creative, innovative brain pathways, they need to play in the three-dimensional real world."

In 2014, Colin Kinney, a high school teacher from Northern Ireland, sounded the alarm on this issue while addressing a conference of the Association of Teachers and Lecturers in Manchester, England. "I've spoken to a number of nursery teachers who have concerns over the increasing numbers of young pupils who can swipe a screen," Kinney said, "but have little or no manipulative skills to play with building blocks."

And then there's the matter of the kind of passive entertainment touchscreen devices are so good at delivering—for example, the seemingly inexhaustible supply of YouTube videos. "I love using YouTube to show kids something they've never seen before—volcanoes erupting, the 'I Have a Dream' speech—but kids need the support of a parent to seek out those things," Radesky says. "Usually, they're just being fed the next video that a YouTube algorithm thinks they're going to enjoy, and with the patients I see in clinic, it's usually cartoons, music videos, trucks."

Radesky points to a 2011 University of Virginia study that, although not specifically about creativity, shows how such screen viewing can affect young minds. The researchers divided 60 4-year-olds into three groups: one group watched nine minutes of the fast-paced cartoon *SpongeBob SquarePants*; another watched nine minutes of a slower-paced animated PBS show called *Caillou*, about an inquisitive young boy; and the third spent nine minutes drawing with markers and crayons. Right afterward, all the children were given four tests to assess their executive function—the ability to pay attention, solve problems and control behavior—and the kids who watched *SpongeBob* scored significantly worse than the other two groups.

"The important take-home message here is that the content of viewing actually matters," pediatrician Dimitri Christakis, director of the Center for Child Health, Behavior and Development at Seattle Children's Research Institute, told CNN about the *SpongeBob* study. "Many, many parents have rules about the quantity of programming their children watch, but far fewer have restrictions on what they watch."

So what's a parent to do when it comes to kids and screens? First of all, don't freak out. "I don't want to send parents the message that they need to feel guilty about their children's tech time," Radesky says. "But I also want them to be more intentional about the way they're using [screens] together as a family so that they can monitor and help build digital literacy and savvy in their kids."

Radesky is a co–lead author of the American Academy of Pediatrics' most recent recommendations for media use, which are perhaps the most widely cited screen-time guidelines currently available. In October 2016, the AAP advised that children younger than 18 months avoid screen time altogether, save for video-chatting, and that children 18 to 24 months view high-quality programming (the academy cited Sesame Workshop and PBS as examples) with their parents, who can help the kids comprehend what they're watching. In addition, the AAP recommended a limit of one hour a day of high-quality programs for children ages 2 to 5 and imposing "consistent limits" on media use for children 6 years old and up.

> Some experts stress that the quality and content of a child's screen viewing matter as much as or more than the quantity.

But perhaps, as Christakis suggests, there's too much emphasis on how many minutes or hours a day a kid is in front of a screen. So suggests Mitchel Resnick, a professor of learning research at the MIT Media Lab.

"Rather than trying to minimize screen time, I think parents and teachers should try to maximize creative time," he writes in his 2017 book *Lifelong Kindergarten: Cultivating Creativity Through Projects, Passions, Peers, and Play*. "The focus shouldn't be on which technologies children are using but rather what children are doing with them. Some uses of new technologies foster creative thinking; others restrict it."

Resnick's advice: instead of "trying to choose between high-tech, low-tech, and no-tech, parents and teachers should be searching for activities that will engage children in creative thinking and creative expression." And until there's more research available, parents and teachers will just have to rely on their gut when it comes to kids and screens and creative play.