

Youth, Education, and Technology

by Ryan Leys

Each generation thinks the following generation will be the downfall of humanity. Parents of children who grew up during the seventies and eighties think the generation after them has been destroyed with their love of sex, drugs, and rock and roll. Parents of children growing up in the prime of a technological revolution think the millennials are degenerating society through a lack of interpersonal communications and a focus on technology. Many parents are particularly concerned with the effects that technology is having on their children in regards to education. There is a common belief that technology is distracting children and possibly stunting their ability to consume information. Concerns about the growing number of children using technology is not without just cause. A child sitting stagnant on a playground swing, immersed in a difficult level of Angry Birds or Candy Crush, is not an uncommon sight. While there can be negative effects on children due to the availability of technology in elementary and middle schools, with proper monitoring by parents and teachers, technology is an extremely useful tool that can create educational opportunities for students of all abilities.

Education in elementary and secondary schools prior to the early 2000s had stayed relatively the same in the sense of teaching methods. The most important thing was to teach students the three R's: Reading, Writing, and Arithmetic. While that tactic may not have been helpful in teaching students how to spell "writing" and "arithmetic," it had been a relatively successful teaching model. With the increased use of personal computers and electronic devices, educators sought to use new technology as an educational aid. By the late 1990s, most elementary schools in America had some sort of computer education class, where students as young as six or seven were learning basic typing and computing skills. While parents may have used computers in their work place or elsewhere, their early education was mainly through pen and paper. Because parents hadn't yet been introduced to the possibilities of education technology, they were first hesitant about its use in schools (Bracey 508). While the saying about not reinventing the wheel has proven true, improving the wheel can make a huge difference--and that is exactly what technology is doing to education--improving it. It's society's job to keep up with changes happening in the world; parents and educators alike need to keep up with technology. A parent's irrational fear of technology in the digital age should not be enough to justify older teaching techniques as the norm.

I've witnessed first-hand the positive changes technology can bring in the education of students, particularly to those with special needs. I've worked with kids with disabilities for over five years now, both in schools and at home. The possibilities that are made available with technology are life changing, not only in the children's educational development, but also in their personal and social development. Non-verbal students have faced more challenges in schools than almost all other children. Not only do they have to learn the material being taught, but it can be extremely difficult for them to communicate their questions. With technology like DynaVoxs, non-verbal children are given a voice they wouldn't be able to exercise otherwise.

A DynaVox is a tablet-based device on which the user navigates through a series of categories and pictures to tap on a word or phrase. The DynaVox then verbalizes for them. While teaching

aides and adaptive work are invaluable resources for the education of special needs students, breakthroughs in technology are able to help in ways never thought possible. If the DynaVox isn't ideal for the student, there are many other options being developed every year, including a device that can capture a person's eye movements on screen, allowing them to use a DynaVox-like system without having to lift a finger.

It's not only students with non-verbal disabilities who are able to utilize technology to help them in their education. Students with disabilities, such as autism or attention deficit disorder (ADD), now have access to computer programs aimed to help them learn the "three R's" in adaptive ways. A game-based learning system has shown fantastic results in capturing the attention of students of all abilities. Students with ADD and ADHD undeniably have an increased difficulty concentrating on school work, but most students in general don't enjoy doing problems one through twenty on a math sheet. When those twenty problems become twenty UFOs invading earth, and the only way to blow them up is to solve a multiplication problem, the challenge becomes much more enticing. A study was done on the effects of gaming education on children ages seven to eight with conclusive results showing that second graders were able to learn math at an accelerated pace with gaming technology integration. The study was a series of tests where, over the course of five months, one group of second grade students played technological math games and another used paper math games. Through these extensive tests, researchers derived that students of all abilities benefited from the technology based games. While students who used the paper games were still learning arithmetical concepts, students utilizing technology were learning at a faster pace (Shin).

Of course, technology isn't perfect. While the positive effects of technology immensely outweigh the negatives, the negative effects aren't to be ignored. The downsides of technology have proven to be prominent over the last decade, in particular with the growing popularity of the smart phone. While technology can be used in schools to further the education of students, it can also be used in ways equally as harmful. With apps, games, and social media platforms being developed every day, there is a huge market for distraction devices. With over one million apps in the Apple app store, it's increasingly easy to find an app to escape to rather than using free time for educational purposes. In my experience working with students, I've noticed children in elementary and middle school are not an exception to the investment in online and mobile gaming. Instead of playing cops and robbers with their friends next door, students may spend time slaying dragons online and playing games on their parents' phones. While game addiction can be a serious problem with students, an easy solution is moderation. Many parents are using phones and computers as a babysitting device, and this is the real problem, not technology. If parents monitor what their children are using the computer and phones for, they can control the amount of non-educational content their children are consuming. At school, educators should be very closely monitoring how students are using technology. Many schools have already taken preventative measures, such as blocking websites like Facebook and Youtube to drive students away from distractions. Video games have proven to help develop useful life skills, so children playing games is not always a bad thing, but it's important to make sure they're not spending hours at a time on them.

With this technology being so new, we can't know all of the possible negative effects it has on human development. Nicholas Carr writes in his book *The Shallows: What the Internet is Doing*

to Our Brains that with so much of our information being derived from short articles or video clips, people are losing the ability to read books and pay attention for extended periods of time. He stresses that children and adults alike are becoming too dependent on the Internet and technology, and are thus missing out on things that generations prior have grown to love (Carr 12). While Carr consistently makes good points, there is no evidence to show that people consuming information through channels other than books is harmful to the way humans gain information. Because it may be difficult for a student to search the library for a book source, it isn't a bad thing that they can go to Google and find all the information they need easily. Carr expresses in the first chapter of his book that, although he felt himself becoming addicted to technology, information was flowing to him much easier than previously (Carr 5-15). Although there are the negative side effects, like not consuming information from other sources, if Carr had moderated himself instead of spending all of his time online, he could have utilized the technology in a positive way.

Moderation is the key to most everything. Even things that are great for you, like certain foods and vitamins, can turn bad if taken in excess. Technology is no exception to this rule. When used properly, it presents many opportunities for students to take advantage of, and while there is the possibility for abuse, the possibilities for accelerated education tactics are much greater. Many of the technologies being used in the classroom are still relatively new, so it is likely that negative effects will be more thoroughly documented in the future, but at this point studies show the potential for greatness is far greater than that of harm in the way children learn. Technology not only furthers the education of all students, but it makes tasks that were seemingly impossible for students with disabilities possible. While not as extensive as the study on game technology in a classroom, a study published in *Computers in Human Behavior* has further backed up the fact the students exposed to technology in classroom settings are able to learn at a faster pace than those without similar opportunities (Taylor). It will be interesting to see what technology's role is in education over the course of the next few decades. At this point it looks as if it will be around for a while, as it should. If the shift in focus moves from the negative side of technology to how technology can be utilized to further education, education standards within the next century will be changed for the better.

Works Cited:

Bracey, Gerald W. *The Phi Delta Kappan*, Vol. 66, No. 7 (Mar., 1985), p. 508

Carr, Nicholas G. *The Shallows: What the Internet Is Doing to Our Brains*. New York: W.W. Norton, 2011. Print.

Shin, Namsoo, Sutherland, LeeAnn M, Norris, Cathleen A, Soloway, Elliot. "Effects of Game Technology on Elementary Student Learning in Mathematics" *British Journal of Educational Technology*. 2012

Taylor, Lydotta M, Donna, Castro J. "Learning With Versus Without Technology in Elementary and Secondary School." *Computers in Human Behavior*. 2007.