

# Training Young People With ASD to Be the Techies of Tomorrow

By Beth ROSENBERG, MA, MS Ed Tech

There's a lot of talk about why teaching kids technology, programming in particular, is beneficial in today's educational landscape. Nearly every other week there seems to be some major news announcement around STEM (science, technology, engineering, math), STEAM (science, technology, engineering, art, and math), CS (computer science), and even IT (information technology) education.

*Beth Rosenberg and her son.*



There's also a current rush for computer science to be taught in all New York City public schools within the next 10 years according to an initiative promoted by NYC Mayor Bill de Blasio in 2016. There are loads of technology camps and workshops for kids, apps to help students with the pre-cursors to learning programming, pre-college programs for

gifted high school students, and a bunch of start-up organizations that provide online programming curriculum for the novice coders-in-the-making. However, the question remains: can learning the tools of technology and computer science principles also be beneficial for youth on the autism spectrum?

According to Autism Speaks, up to 9 out of 10 adults with autism over the age of 21 are unemployed or

underemployed. In today's society, students with autism spectrum disorder (ASD) are still confronted with bias, prejudice, and a lack of opportunities. Less than half of students with disabilities graduate from high school, and even fewer are privy to meaningful jobs. Unemployment rates are extraordinarily high for adults with autism, and yet there are few training programs for young students that aim to resolve this issue.

According to a November 2015 article from The Hechinger Report, "A growing group of educators see technology work as an ideal field for some adults with autism and hope that tech can provide a career path and a means to financial security. At the same time, employers are beginning to see advantages to hiring people with autism, many of whom have strengths that lend themselves to working well with technology, such as being able to stay focused for long periods of time and to perform repetitive tasks with accuracy."

Many children on the spectrum intuitively understand technology for these reasons and more. Computer code is predictable, rote, and follows a set of finite rules—which makes it comfortable for many of these youth to work with. Individuals with ASD may be the best suited to code, but students with disabilities who are still in school have been consistently left out of this conversation. In addition, we

know that students with ASD are big consumers of technology—how do we make them into producers of digital culture?

Gary Moore and Dan Selic from the [nonPareil Institute](#) in Plano, Texas, started a combination-training program and software company for individuals on the spectrum. According to theVerge.com, non-Pareil is just one of a handful of U.S. organizations dedicated to training and employing young adults with autism (estimated to comprise 1 to 1.5 million Americans) who demonstrate valuable talents in technological realms. The same is happening with UltraTesting, a headhunter-type program for young adults with ASD in NYC. In San Francisco, [Specialists Guild](#) trains interns who have autism as software testers and then works to place them in full-time jobs. Other organizations, like AspiroTech in Chicago and Specialisterne, a Denmark tech organization that recently opened its doors in the US, is also helping to train young adults ages 18 and above with ASD in the tech industry.

Dr. Patricia Evans, a neurologist at Children's Medical Center in Dallas, says people on the high-functioning end of the autism spectrum often have an amazing ability to hyper-focus on a task.

"They may really flourish at engineering-type tasks or computer design, where their interaction with people is somewhat limited," Evans says.



*Students at a TechKidsUnlimited.org workshop learning together.*

“ At TechKidsUnlimited.org, youth and teens learn open-source or free software in workshops and often continue experimenting with the program at home. ”

At TechKidsUnlimited.org, a NYC-based tech educational not-for-profit, technology classes are given in weekend and weeklong workshops to students on the spectrum, accepting kids from 7 years old up to age 19. Students who have been diagnosed with ASD or learning and emotional disabilities can become technologists early on by learning in supported workshops with a 3:1 student ratio and a social worker in every program. By creating, developing, and sharing the tools of technology in a supportive, nurturing, and individualized environment, TechKidsUnlimited.org is working to change the paradigm for education and employment for young people with disabilities. I started TechKidsUnlimited.org with my son who learns differently.

At TechKidsUnlimited.org, youth and teens learn open-source or free software in workshops and often continue experimenting with the program at home. For example, high support student J.L. learned the complex, 3D game development software Unity in a recent TKU workshop, where students were learning Unity to make a game that was then deployed to a 3D Oculus Rift headset. Staff noticed that by the second day of the workshop, he had gone way ahead of the other students who were still trying to master this complex, industry-standard software. When asked, he mentioned that he went home and downloaded the free software program onto his own computer—which took an hour—and then opened his account and continued working on his project throughout the evening. This inspiring anecdote made it clear that many students with ASD really have an innate ability and talent to learn and create with today's tools of technology.

Educational technologists and media theorists, such as media theorist Douglas Rushkoff, compare learning to program with learning to read way back in the Renaissance. The ability to read was primarily contained to the monks and clergy, which meant they controlled the knowledge of the world. Similarly,

should only the smartest math students and most gifted science students hold the secret to programming? With the advent of the Gutenberg Press, literacy rates soared just by placing the book—the Bible—into the hands of the masses. The same can be said for introducing students of the 21<sup>st</sup> century to programming, where they can then become producers and makers. Getting students to geek out by teaching them to learn how to make games, apps, websites, and more using step-by-step coding curriculum and intuitive software is gaining momentum. Students with autism should not be ignored and left out of this conversation.

The hope is that in the next 10 years, we're going to have a lot of more jobs in the tech sector to fill, and students with ASD will become tomorrow's gainfully employed if they are given the opportunity to explore tech as youth. By working with students on the spectrum ages seven and up to learn to use state-of-the-art software and hardware, students with ASD can become the techies of tomorrow.

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