Using iPods to assist workers with autism

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Jeffrey is a daytime custodian at a fast-food restaurant. And he has autism. On the job, he found it difficult to switch from one task to another or to complete complex tasks. Trying to calm himself, Jeffrey would sometimes spin in place or hum, disturbing customers. At risk of losing his job, he was trained to use an Apple iPod Touch as part of a study conducted by researchers at Virginia Commonwealth University.

Working with an occupational therapist, Jeffrey was introduced to specific applications that cued him to switch tasks and provided step-by-step instructions for complex tasks. Within a week, according to case studies recently published in the Journal of Vocational Rehabilitation, Jeffrey was successfully performing his job duties with support from the device. A year later, Jeffrey continues to use his iPod Touch on the job, has increased his hours and is recognized as a reliable employee. His anxiety has lessened, and he no long exhibits troubling behaviors.

Tony Gentry, Ph.D., OTR/L, associate professor in the VCU Department of Occupational Therapy in the VCU School of Allied Health Professions, has been conducting research in the area of assistive technology for 12 years. He's currently in the fourth year of a five-year research study involving 50 individuals with autism, including Jeffrey.

Grace was another participant featured in the case studies recently published. She is a 60-year-old woman who was diagnosed with autism, mild cerebral palsy and epilepsy. In addition to needing cues for job duties and video-based prompts to find her way about the many floors of the workplace where she works as a file clerk, Grace needed help safely

getting on and off the bus. For instance, she would sometimes leave her purse on a park bench and step into the busy street to see if the bus was coming. A custom-made video showed Grace how to wait for the bus safely and which steps to take if the bus didn't arrive. After a few weeks, her manager reported that Grace worked independently and managed to safely use the bus.

"People diagnosed with autism spectrum disorder may have difficulties with cognition, behavior and communication. We're trying to find out whether using an iPod Touch with specific applications can help individuals with autism in the workforce," said Gentry, who is the principal investigator on the project.

In the randomized study, individuals are given vocational placement and paired with a job coach. One group receives the devices and training within the first month of work; the second group is given the iPods and training after working for three months. Researchers are comparing the need for job coaching support and independence between the two groups. Both groups are tracked for at least six months after job placement.

"What we've seen so far is that the amount of job coaching and support during the first three months of employment shows a significant difference, with those who have the iPod Touch doing better," said Gentry. "We don't know if these results will hold up once all of the subjects have completed the study, but the trend looks promising."

A full report of the findings will be released sometime after the study comes to an end next year.

The study, "PDA-Enabled Job Support for People with Autism," is funded by the National Institute on Disability and Rehabilitation Research as part of a multi-project grant managed by VCU's

Rehabilitation Research and Training Center (VCU RRTC).

The Virginia Department for Aging and Rehabilitative Services (DARS) collaborates with Gentry and supplied vocational placements, job coaches and iPod Touch devices for the participants. Skilled job coaches from DARS are a key component to successful implementation of this technology.

"Historically, DARS has been on the forefront of supporting employment opportunities for individuals with disabilities," said Richard Kriner, a DARS autism research project coordinator who co-authored the journal article with Gentry. "DARS is committed to ensuring our clients have access to the latest technologies and 'best practice' employment supports. Our partnership with Dr. Gentry and VCU RRTC is just one way we stay abreast of evidenced-based practices and help shape positive futures for Virginians with disabilities."

The agency is hoping this research will lead to a model that be expanded throughout the state.

"As more young people are diagnosed with autism and face employment challenges, the Virginia Department for Aging and Rehabilitative Services continues to seek new ways to assist them to develop job skills and potentially enter the workforce," said DARS commissioner Jim Rothrock. "DARS is taking 'lessons learned' from this and related projects and demonstrating their application for vocational rehabilitation to help clients turn their dreams of employment into reality."

As director of VCU'S Assistive Technology for Cognition Laboratory, Gentry works hard to keep up with ever-changing technology and the applications available through these new devices.

"Technology is changing so fast, and I imagine it will continue to change

at a dramatic pace," Gentry said. "Half of my work is keeping up with what's new in terms of technology, and how we can use these latest devices to create even better cognitive and behavioral aids."

  More information: The study, "PDA-Enabled Job Support for People with Autism," is funded by the National Institute on Disability and Rehabilitation Research.

Provided by Virginia Commonwealth University