

There's an app for that: Apple iPod Touch helps adults with autism function in the workplace

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Only 15% of adults with autism spectrum disorder (ASD) in the United States have some form of paid work. Difficulties related to cognition, behavior, communication, and sensory processing can impact their ability to attain and retain employment. Now investigators report the task management and organizational features on personal digital assistants (PDAs) can help people with ASD function more successfully in the workplace. They have published case studies in the *Journal of Vocational Rehabilitation* demonstrating the use of Apple iPod touch PDAs as vocational supports.

"Strategies that provide enlightened workplace supports are clearly needed in order to help people with [ASD](#) find useful work and perform successfully on the job," says lead investigator Tony Gentry, PhD, of the Department of [Occupational Therapy](#) at Virginia Commonwealth University in Richmond, VA. "Adults with ASD often have valuable assets and strengths that are sought after in the workplace, such as logical and mathematical ability, exceptional [computer skills](#), or photographic memory."

The cases involve participants in a 4-year randomized trial examining the use of [iPod touch](#) PDAs as job coaching aids in the workplace. Each individual was given a vocational placement and paired with a job coach. An occupational therapist programmed an iPod touch with an individualized suite of applications to provide support that included task

reminders and lists, video prompts, tools for self-managing behavior, and other supports. The occupational therapist trained the participant and the job coach in using the device as a vocational aid.

One participant, Jeffrey, worked as a daytime custodian at a fast-food restaurant. He had difficulty moving from one task to another, and couldn't remember the multiple steps involved in retrieving and stocking condiments and cleaning the bathrooms. When he became stressed, he would display "calming behaviors," such as spinning and humming. The occupational therapist set reminder alarms on the iPod touch® to cue Jeffrey to move from task to task during his shift. Using the Notes application, step-by-step checklists were created for each of Jeffrey's tasks so he would be sure to complete them properly. Within a week, he was successfully responding to the reminder cues and checking his task notes. A year later, Jeffrey continues to use his iPod touch® on the job, and is recognized as a reliable employee.

For Grace, a 60 year old woman with a diagnosis of autism, mild cerebral palsy, and epilepsy, the iPod touch® helps manage her commute on a specialized transportation bus. If the bus was late, Grace worried that it had missed her, and she would frequently leave her purse on a park bench and step into the busy street to see if it was coming. Now, reminders alert her to go to the bus stop and to call the transportation company if the bus is late. Podcasts of some of her favorite radio shows and music help alleviate her anxiety while waiting for the bus. A custom-made video shows Grace how to wait for the bus safely, and the steps to take if the bus doesn't arrive. Her iPod touch® also helps her move from task to task and manage her duties at work. After six months, her manager reports that Grace works independently and ably.

A third participant, Lily, has Downs Syndrome and ASD. She does housekeeping work in the Mother Infant unit of a hospital. Lily does not

read, tell time, or navigate a calendar independently. She becomes frustrated when her performance is corrected or when faced with unforeseen changes in the workday, responding with inappropriate behaviors such as crying or stomping. Because Lily is a nonreader, a verbal application called VoCal provides spoken word alerts to remind her to clock in to work, switch tasks, take breaks, clock out, and recharge her iPod touch®. The Storykit application uses verbal prompts and pictures to show Lily how to complete tasks and to remind her of appropriate behavior to follow when faced with unusual transitions in the workplace. If Lily completes a workday without an inappropriate outburst she receives a reward, such as free time to play games or songs on her iPod touch®. Her progress is tracked with the iReward app.

The device led to improved work performance and fewer behavioral challenges for Lily. However, after a month she lost the device and she quickly backtracked. Once she received a replacement device, she quickly regained near independence in workplace performance.

Dr. Gentry notes that a wide range of variables in personal characteristics, work settings, and duties make it difficult to make any generalizations from these three cases. However, they do demonstrate the versatility of PDAs as workplace supports for people with ASD. "This is an exciting time for anyone in the fields of education, physical rehabilitation, and vocational support, where we are seeing a long-awaited merging of consumer products and assistive technologies for all," he says. "Field-based research in real world environments is essential to help us determine how best to use these tools to help our clients live more rewarding lives."

More information: "The Apple iPod touch® as a vocational support aid for adults with autism: Three case studies," by Tony Gentry, Stephanie Lau, Alissa Molinelli, Amy Fallen, and Richard Kriner. *Journal of Vocational Rehabilitation*, 37: 2 (September 2012). [DOI:](#)

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