

ASHBURN, Va. – Onscreen, Michael Mendoza's digital avatar stands before a wonderland of cakes and sweets, but his message is all business: "I. Get. *Frustrated* when people push me *and* call me — and call me — a teacher's pet!"



By Jack Gruber, USA TODAY

Technology resource teacher Adina Popa works with student Michael Mendoza using the Xbox Kinect. Motion sensors have become a big deal in the world of autism therapy and education.

In another classroom at Stuart W. Weller Elementary School, nearly an hour's drive west of Washington, [D.C.](#), two students stand side-by-side, eyes riveted on a big-screen TV. They jump, duck and swing their arms in unison, working together as they help their digital doppelgangers raft downriver.

In real life, 9-year-old Michael has autism, as do his two classmates. All three have long struggled with the mental, physical and social rigors of school. All three now get help most days from video-game avatars — simplified digital versions of themselves doing things most autistic children don't generally do. In Michael's case, he's recording "social stories" videos that remind him how to act. In his classmates' cases — their parents asked that they not be identified — they're playing games that help with coordination, body awareness and cooperation, all challenges for kids on the autism spectrum.

Can off-the-shelf video games spark a breakthrough in treating autism? That's the question researchers are asking as educators quietly discover the therapeutic uses of motion-controlled sensors. The devices are popular with gamers: Microsoft this week said it had sold more than 19 million Kinect motion-sensor units since introducing it in November 2010.

Now autism researchers, teachers and therapists are installing them in classrooms and clinics, reporting promising results for a fraction of the price of typical equipment. Could a teacher armed with a \$300 Xbox and a \$10 copy of *Double Fine Happy Action Theater* do as much good as months of intensive therapy?

"Nobody thought of it as a therapeutic device," said Marc Sirkin of Autism Speaks, a New York-based advocacy group. Earlier this spring, when he first got wind of computer engineering students at the [University of Michigan](#) hacking the Kinect to develop autism games, he bought a ticket on a red-eye flight to see for himself. "It turns out you don't have to look very far, you don't have to scratch very deep, to go, 'Wait a minute. There's something really cool here.' "

Microsoft's Radu Burducea stops short of calling the Kinect a therapeutic device, but says he hears every day about teachers and therapists adapting it in new and creative ways: math instruction, book criticism, counseling and physical coordination, for instance.

"We've lost control," he admitted, "and thank God that we have."

The U.S. Centers for Disease Control and Prevention reported in April that about one in 88 children are on the autism spectrum, a 78% rise from 2002 to 2008.

In many cases, researchers have found, autistic children easily interact with an onscreen avatar that mimics their motions — the game world is more predictable and less threatening than real life, said Dan Stachelski of the Lakeside Center for Autism in Issaquah, Wash. As a result, teachers can help even the most isolated child interact with teachers and peers. In one case, Stachelski said, a student playing a Kinect game for a few moments moved his arms up and down in unison for the first time, "something our therapist was trying to do for six months."

Lakeside preschoolers now regularly compete in [Dance Central](#) dance-offs, and more recently, eight students shared a tiny classroom space with the help of [Happy Action Theater](#), a sort of rule-free, multiplayer digital sandbox. [Tim Schafer](#), the game's designer, said his team built it with "zero assumptions" about players' abilities. "We were thinking of a birthday party full of toddlers," he said. "The main mantra was, 'No failure.' "

At the University of Michigan, software engineering students this spring designed several Kinect games for children with autism, an assignment from instructor David Chesney. Among the titles in testing: *Tickle Monster*, in which kids tickle imaginary creatures onscreen and learn about both appropriate touch and facial expressions. "For kids with autism, there's a certain social awkwardness and a lack of ability to recognize emotion, and to respond to emotion and verbal cues in an appropriate manner," he said.

Teachers at Weller had worked for years to help autistic students cope with the everyday demands of school — following directions, staying in a prescribed space, getting along with

one another and working together, among others. Even talking to one another is often a challenge, teachers say.

A few weeks ago, Michael's teachers invited him to step in front of an Xbox equipped with a Kinect. He has since recorded four "social stories" that help him cope with social dilemmas as they happen. Teachers create digital QR codes that students access with a smartphone or iPad and up pops the student's video.

One teacher, Adina Popa, recalled that an autistic classmate recently watched Michael's "getting frustrated" video and reminded him of his own prescription: Tell a teacher, don't push, hit or use "inappropriate" words.

"That was a very neat conversation," Popa said.