

Technology brings freedom to disabled students

February 12, 2001 - Some children can't talk above a whisper. Some can't straighten their bodies enough to sit in a classroom chair. Some have trouble seeing or hearing, and others have trouble sitting still.

Two decades ago, children with disabilities had to make do with what could be invented on the spot or modified from existing items if they wanted to learn like their nondisabled peers. Now, technology is making miracles happen in the classroom and in their lives.

"The technology makes everything so much easier," said Stephen Grover of New City, whose 4-year-old son, Stephen, is in the early intervention program at Jawonio with a medical condition similar to cerebral palsy that leaves him unable to speak clearly or move his body easily.

By flipping a switch, the preschooler can signal his preference between two choices, say soup or applesauce. He also uses switches to play games on a computer, and can use switches on his new motorized wheelchair to move himself. Small things, his father said, but huge steps toward giving a child locked within a poorly functioning body some autonomy.

"A lot of his communication is body language and it's very basic. We know when he likes or doesn't like something. Even with high tech at this point, his communication is very basic. But there's more of a possibility with the high tech he can go farther, his brain function will become better," Grover said.

The art of finding, inventing, modifying and creating ways for disabled children to learn or communicate is called assistive technology, with an emphasis on the word "assistive." It can be as simple as moving a nearsighted child to the front of a classroom or replacing a low-watt lightbulb with something brighter, or it can be as complex as a computer that responds to eye movement.

"Federal law mandates that districts ensure that all children have access to the curriculum, to a free and appropriate education," said Mary Jean Marsico, director of special education for the Rockland Board of Cooperative Educational Services. "With that mandate comes the responsibility to look at the child, the instructional environment, the resources - inclusive of technology - that could support the child in ensuring their access to the curriculum."

Special-needs children always have had the right to an education, but it has only been within the past five years that a concerted effort has been made to bring them into the regular classroom to be educated along with children their own age.

Federal and state law has become increasingly specific over the years on what school districts must do to provide the least restrictive atmosphere for special-needs children in public schools. It is not unusual any more to see children in wheelchairs or walkers in school corridors, or to have a special-education teacher or aide in a classroom helping a child with schoolwork.

"Schools have to provide adaptations, accommodations or devices that will help a child attain their educational goals," said Katherine Glade, assistive technology consultant and speech pathologist with Rockland BOCES. "That means everything from adapting a pencil to a piece of computer software. We have to look at what difficulty the child is having, look at what's in place already and work from that. Maybe the solution is something low-tech ... such as adapting a seat or lowering a (computer) keyboard or raising a monitor or a new mouse."

There are about 5,700 children in Rockland, from prekindergarten through high school seniors, classified as having special needs. About 10 percent of them are enrolled in special schools that can accommodate **severe disabilities**. Nearly 9 percent spend all their time in regular classrooms. The rest supplement their class time with special programs.

Some of the youngest children attend classes at Jawonio. Jawonio is a nonprofit agency that serves about 5,000 Rockland adults and children with disabilities and special needs each year, offering programs ranging from speech therapy to early intervention and preschool programs for severely disabled children. Jawonio currently has 88 children in its preschool program and more than 200 in the early intervention program. Assistive technology is the norm, said Jerry Stiller, the organization's director for clinical and educational services.

"There's this natural way to use technology to achieve their goals by integrating it into the classroom," Stiller said. "Take **power wheelchairs**. Now, by the time our kids are getting into kindergarten, they know how to drive. They can already (have access) to the schools and can get around. Learning is hard enough, socialization is hard enough, getting around is hard enough. Anything we can do that takes away the struggle and lets them focus on education is good."

Low-tech aids have long been a standard for special-education teachers. Among them are picture boards where children can indicate a choice between objects, and three-dimensional representations of activities that a child can hold to indicate they would rather eat lunch than read a book, for instance. These aids remain a staple in the classroom because they are easily understood and give a non-verbal child a chance to make his or her wishes known.

Children with more **severe disabilities** need more specialized aid.

"We look for the (child's) strengths," Marsico said. If a child has the ability to move a foot, a hand or the head, BOCES helps devise machines or modifications of current technology that lets them use that foot, hand or head movement to access a computer program or a wheelchair.

Rockland BOCES has made a concerted effort to keep current with the cutting edge of science and technology, so that any new piece of hardware or software that can be used to help disabled children can be evaluated and incorporated into the classroom, Marsico said.

"We believe very strongly Rockland County has been very much a leader in trying to get things going" in assistive technology, Marsico said. "We spent time with the Westchester Institute for Human Development and Helen Hayes Hospital. If we feel we're at a loss in terms of devices or recommendations or conclusions, we'll pick up the phone and have Helen Hayes finish the evaluation with us. They're often aware of some things that we just don't know exist."

A software program that helps children read is one of the technical assists helping the 44 kindergarten- through fifth-grade children at the BOCES Hilltop School.

The children, many of whom have severe emotional, mental or physical problems that make it difficult for them to concentrate on or retain lessons, have made tremendous progress using a multi-sensory computer program that includes books they can take home and read with their families, said Pam Charles, principal at the school and supervisor of district-based programs, including assistive technology.

"It's a (program) that's never been used with a special-education population. It provides a direct link between the parent and the school," Charles said. "The instruction is more layered. It's tiered. The reading gains have been amazing."

The 163 students who attend the Jesse Kaplan BOCES school use more traditional technologies to solve their educational roadblocks, Principal Linda Vaughan said. Modified computers, motorized wheelchairs and the like are commonplace in the classroom.

But technology is not sitting still at Kaplan. Teachers at the school are being trained in a device dubbed "Eagle Eyes" by its developers at Boston College's departments of Education and Computer Science.

Geared to the most severely disabled students - children with limited communications skills and little or no control over their body - Eagle Eyes uses sensors placed around the eyes that pick up eye movements and translate them into computer commands and cursor movement. The first devices are expected to be in the school during the spring on an experimental basis.

Kaplan educators also are learning what they can of a new speech enhancer that is so sensitive it can pick up even minimal lip movement and produce a spoken word. For children with severe breathing problems, including those whose lung capacity is so limited they do not have enough breath to make their voices audible, the enhancer can give them the voice they never had.

"It's not robotic speech. It's the child's voice," Marsico said.

Marsico said that she would like Kaplan to be a pilot site for the device, if she can arrange it.

"When a child can tell you what they want, they can make choices. This type of technology puts the 'I' back into the plan. It gives the child the ability to say what they need," she said.

Stiller also said that giving a special-needs child a device that puts him on a similar footing with peers breaks down one of the many walls that isolate anyone who is different.

"Some kids can't be heard, can't be seen. Somehow, a kid in a wheelchair that can get from one place to another becomes seen," he said. "That means someone doesn't have to be there to transport them. He doesn't have to ask someone to help. It gives them that self-esteem that being truly independent, like their peers, gives. It sets the tone for the rest of their school careers."