



ANGIE

Angie is a bright, happy 5-year-old Korean-American girl, who has mild cerebral palsy due to her premature birth. When she began preschool at the age of 3, she was completely nonverbal. Angie's inability to speak hindered her ability to communicate with her family members, her teachers, and her classmates and also hindered her ability to learn and develop literacy skills. She needed to find a way to communicate her thoughts and ideas, allowing her to become an active and engaged participant in her classroom and to gain access to the general education curriculum at her school.

Angie's teacher contacted the county's Interdisciplinary Augmentative Communication and Technology Team (InterACT) for assistance in addressing Angie's communication needs. The InterACT team, which operates at the county level, includes speech pathologists, special education teachers, occupational therapists, and support personnel who are all trained in assistive technology and augmentative communication. The role of the InterACT team is to provide consultation to school staff in the district in the process of selecting and using assistive technology—in particular, augmentative communication systems. The success of the InterACT team is due in great part to the extent to which they **support stakeholder collaboration**, by involving every-one who works with Angie in the decisionmaking process. InterACT team staff work very closely with Angie's teachers and her family members on an ongoing basis, to ensure that the assistive technology she uses continues to meet her needs.

For example, InterACT staff work closely with Angie's teachers to make sure that her augmentative communication system includes the vocabulary that Angie needs in order to progress with her language development and have access to the general education curriculum. Staff also work closely with Angie's family members to make sure that her system includes the vocabulary that Angie needs in order to communicate and function independently at home. Angie's parents, siblings, and educators all work together to **monitor** her progress, remaining **focused on her learning needs** and what it will take for her to meet those needs.



Monitoring impact

“At the very beginning of the year Angie was very fearful about a lot of things and she would easily cry...and need to be comforted and calmed down...[now] you seldom find Angie fearful about anything. As a matter of fact, every time I walk into the room Angie has me come over to her. ‘Come, come here, see what I’m doing.’ And there is an independence that has grown in her...I’ve seen a tremendous progression in the growth of her independence from the beginning.”

Judy Theiss, principal

What makes the collaborative relationship between the professionals who work with Angie and her family members especially critical is the cultural differences between them. Angie’s parents speak Korean, which has raised additional challenges with respect to her language development needs. Angie’s teachers and staff on the InterACT team work with her parents and her sister to program specific Korean phrases into her communication device so that she can participate actively in her family life at home. In addition, Angie’s teachers recognize the need to **acknowledge diversity** and be sensitive to the differences between American and Korean cultures, specifically with respect to the collaborative relationship between parents and professionals. Angie’s teachers note that in many cases, Korean Americans tend to show a great deference to professionals, and it is important that they be reminded that they do play just as important a role in Angie’s education.

In Angie’s school district, county leadership has been involved in an ongoing effort to **build capacity** in the area of assistive technology. The InterACT team has been in existence since 1983 and has grown tremendously over the years in terms of its staff, its expertise, and the role it plays in providing support for students with disabilities throughout the district. When the InterACT team was first created, it consisted of one person assigned half a day a week, and it has now grown to comprise a 13-member staff.



Acknowledging diversity

“It’s very important for these children to be able to communicate in all settings...so the devices do go home with the children.... They can communicate with their siblings, their parents. Angie’s family is very strongly connected to the Korean community with lots of parties and church gatherings. Angie does use her device to be able to participate fully.”

Kathleen Abram, InterACT team director

InterACT is now a line item in the district budget, which includes support for staff, assistive technology equipment, and any other materials necessary to appropriately support the needs of the children in the district. Assistive technology has become an ingrained part of special education services. In fact, Angie’s kindergarten class includes 5 other students who use augmentative communication systems, and with the support of the InterACT team, her teacher has developed the expertise required to program and troubleshoot the assistive technology herself.

Another key to Angie’s success has been **leadership**. Professionals working in Angie’s school district are committed to making assistive technology work, and are united under a common vision. In particular, the principal at Angie’s school plays a critical role in advocating for the use of assistive technology with children with disabilities and in making sure that the necessary resources and supports are there for students, teachers, and staff.

Leadership, capacity, and teamwork are only a few of the many factors that have made Angie’s experience with assistive technology a success. Because of the support she receives, Angie’s communication and language development skills have greatly improved, setting her on a path towards greater independence in her life at school and at home.



AARON

Aaron, a 13-year-old boy who loves to have fun and laugh, has multiple disabilities that have interfered with his mobility, vision, fine motor, gross motor, and communication skills. He attends his neighborhood middle school where he uses a wide range of assistive technology that has helped him to reach his educational goals. For example, a power wheelchair helps Aaron move around independently at school, computer software with large text and speech capabilities assists him in reading, and an alternative keyboard with large keys and a keyguard allows him to write and interact with the computer independently. Also, texts with large print allow Aaron to see his textbooks easily.

When Aaron first moved to the county where he lives now, his parents found a school district that was extremely welcoming of Aaron and eager to try new and innovative strategies to help him succeed. Aaron's parents were particularly impressed with the county's special education department and the **strong leadership** that conveyed a sense of vision and direction for everyone working in the district. They found the special education director in particular to be a great advocate for all of the students and someone who was open to assistive technology and the potential it had for improving the lives of students with disabilities.

When Aaron was in the second grade, expectations for him in school began to increase. This was especially true of written work, which is something Aaron has difficulty with due to his limited use of his hands. Aaron had a team of professionals who were working with him, including special education and regular education teachers, a physical therapist, an occupational therapist, a teacher of the visually impaired, a speech therapist, and an instructional assistant, who at this point began to discuss with Aaron's parents the possibility of using assistive technology. This **stakeholder collaboration** was critical in creating Aaron's success with the assistive technology he now uses. Without the involvement of everyone on this team, Aaron would not have been able to realize the benefits of increased independence and access to the curriculum that he now has.



Focusing on supporting student learning

“I think leadership and the administrators in a...it increases their productivity. There are a lot of students who are very capable on the computer. Some students don't have that great skill. They're not very quick on the computer but...this gives them the opportunity to practice and get quicker.... Stacey has been able to write more and for a longer period of time.... She has a difficult time with writing paper and pencil but when given...[the wordprocessing device] she can type and type and type.”

Erin Woodward, special education teacher

Aaron benefits from a school system that has **built the capacity** to provide ongoing support to staff and students using assistive technology. A countywide assistive technology team, which is funded as part of the special education department, exists to assist with all Individualized Education Program (IEP) teams by providing assistive technology evaluations, consultations, and training. The assistive technology coordinator and other members of the team regularly provide training at schools. They also take responsibility for constantly staying up-to-date on the latest advances in assistive technology. Given the rapid developments in technology, it is critical that professionals be aware of these changes and think about how these changes can benefit their students.

In Aaron's case, the personnel working with him conducted ongoing **monitoring** to ensure that his assistive technology was updated as necessary to reflect both his changing needs as well as advances in the technology itself. For example, as the challenges in math class grew, Aaron changed from using just manipulatives to also using a calculator with large keys and a large display. As he became better at using his limited vision and manipulating the keys of the calculator, he also began to use a regular calculator.

Aaron's parents and educators all expressed fear and trepidation around assistive technology at first. However, when they began to try different tools and learned about the ways in which Aaron could benefit, they were quickly able to **lessen their fear and become more comfortable**.



Reducing fear and becoming comfortable with technology

“In the beginning, I was really kind of shy, the technology part, because I didn’t feel like I knew enough of it. But as the time went on and I was able to hook him up and get him going, and seeing the excitement when he was able to type, and it helped me to get excited, and you know, relax a lot.”

Vicki Lyles, instructional assistant

They found that many of their fears were unfounded. For example, Aaron’s parents used to worry that by using a power wheelchair, Aaron might become too dependent on the assistive technology and lose the motivation to become independent. However, what they and Aaron’s educators have learned is that in fact the opposite is true. Children intuitively want to become independent, and so if they are given the tools, such as a wheelchair, to feel independent, their motivation to become independent will actually increase.

Aaron’s success with assistive technology could not have occurred without the support and teamwork that surrounds him every day. Aaron’s parents, siblings, and teachers all believe in and hold high expectations for him and are willing and eager to try whatever it will take to help him achieve his potential. With the help of assistive technology, Aaron’s independence, ability to master the general education curriculum, and confidence will continue to grow.



STACEY

Stacey, an active and energetic girl in the sixth grade, was diagnosed with an educationally significant hearing loss when she was seven years old. Stacey was identified with hearing loss through a screening provided by the school district and was subsequently referred to her pediatrician and an ear, nose, and throat specialist for confirmation. While Stacey's doctors attended to her medical needs related to the hearing loss, specialists at her school were able to step in and provide the necessary hearing amplification that enabled her to participate in school and gain access to the general education curriculum along with her classmates.

Stacey is fortunate to live in a school district with a strong system of support for students with disabilities. In addition to personnel with specialized expertise in a range of disabilities and instructional methods, the county employs an Integrated Technology Services (ITS) team that handles requests for assistive technology. Any teacher who feels that assistive technology could benefit either an individual student or an entire classroom can make a referral to the ITS. The ITS consists of over a dozen staff with expertise in the use of assistive technology to improve outcomes for students with disabilities and is available to provide assistance with the selection of appropriate tools, training in the use of tools, and ongoing consultative support and assistance for teachers, students, and staff, as necessary. With ITS support as well as the help of service providers with expertise in a range of disabilities, Stacey's school district has been able to **build capacity** to help all service providers who work with Stacey to understand and meet her needs.

When Stacey began using the FM amplification system shown in the video, she, her teachers, and her parents benefited from the capacity described above. A district audiologist and deaf/hard-of-hearing itinerant teacher came to Stacey's school and conducted training with everyone who worked with Stacey. They provided hands-on demonstrations of the FM system as well as explanations about Stacey's hearing loss and how it affected her ability to access the general education curriculum. They also sat down with Stacey's parents and helped them understand the challenges that Stacey faces as well as what they could do to help her overcome some of those challenges.



Focusing on supporting student learning

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Erin Woodward, special education teacher

The team-based approach that characterizes the resources available for Stacey reflects a commitment to **supporting stakeholder collaboration**. In order for the assistive technology to be most effective in helping to improve Stacey's life, her parents, her teachers, and everyone who works with her must be involved in its implementation.

Providing support for Stacey's use of assistive technology is an ongoing process. As she has grown older, the nature of her hearing loss and her learning needs change, so the assistive technology she uses in school needs to change as well. The team of staff who work with Stacey conduct frequent evaluations in order to **monitor the impact** that the assistive technology has on her learning. For example, Stacey's audiologist and hearing itinerant teacher routinely conduct formal and informal “functional listening assessments” to determine the ways in which her hearing loss is affecting her ability to receive instruction and engage in classroom activities.

As her educational needs change, Stacey's teachers and support staff adjust the assistive technology as necessary. Stacey's hearing loss has had an impact on her language development and literacy skills, which is one reason why her special education teacher has provided her with a portable word-processing device that helps her with spelling and assists her in maintaining focus during lengthy writing tasks. The most important aspect of monitoring is to maintain **focus on the student's learning** in order to ensure that the assistive technology is helping Stacey accomplish her educational goals.



The specialists who work with Stacey know that one of the biggest barriers to implementing assistive technology in classrooms is resistance from users. As she explained in the video, Stacey herself has shown some resistance to the FM system. As she has grown older, she has also grown self-conscious about having to wear the device and worries about making friends and fitting in with her classmates. After discussing these worries with her, Stacey's audiologist, hearing itinerant teacher, and guidance counselor came up with some strategies in order to help Stacey and her classmates **reduce their fear of and become more comfortable with the technology**. One way in which they have addressed these concerns is by directly involving Stacey in peer education. Stacey was given the opportunity to get together with five or six classmates at a time, show them her FM system, and explain what it means and how it works. With the support of her teacher, Stacey met with small groups like this about ten times. This strategy helped to build her confidence and reduce her feelings of embarrassment and discomfort, as well as the discomfort and hesitation of her peers. Since then, her comfort level has increased to the point where she felt comfortable addressing the entire class, as a whole, together with her hearing itinerant teacher.

Because of the supportive environment that surrounds Stacey and the commitment and teamwork of all who work with her, Stacey has been able to experience remarkable benefits from the assistive technology that she uses in school. Her ability to pay attention, maintain focus, and follow directions has improved greatly; consequently, her academic achievement has as well. And with the help of her teachers and other support staff, Stacey has been able to overcome her resistance to the technology and build a confidence that has enabled her to make friends and develop positive social relationships with all of her peers.

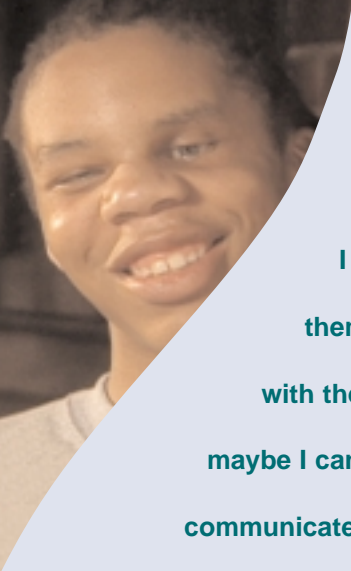
A young man with short hair, wearing a grey sweatshirt with the word 'CHAMPION' on it, is riding a blue bicycle. He is looking forward with a neutral expression. The background is slightly blurred, suggesting motion.

SEAN

Sean, a junior in high school, is a popular and outgoing teenager. Sean lost his sight at the age of 10, due to retinal blastoma. With the help of assistive technology, Sean is able to participate in regular classes all day long at school, socializes with all of his classmates, and learns and is assessed with the same curriculum standards as his nondisabled peers.

Sean uses several different types of assistive technology that enable him to access the general education curriculum at his high school. Everything that Sean needs to read or produce can be translated into Braille at the school's vision center. A special software program installed on Sean's laptop translates text into speech so that Sean can read. Also, Sean uses a Braille scientific calculator that allows him to conduct and comprehend graphing exercises and understand fractions and decimals. For Sean, the most important goal is to be learning the same content as his nondisabled classmates. His teachers treat him the same and have the same high expectations of Sean as they do of their other students. For Sean and his teachers, the **focus is on supporting his learning**, not on the assistive technology. So, for example, his English teacher makes sure that Sean has access to and reads all the text required for the course, while his geometry teacher is careful to explain concepts in a very detailed manner that goes beyond mere visual description.

Sean's school is equipped with a vision center, staffed by specialists in vision loss and assistive technology, as well as a technology team that handles most requests related to the general use and maintenance of assistive technology. Staff at the vision center work collaboratively with staff on the technology team to ensure that students using assistive technology are receiving the support that they require. They also are active participants in the decisionmaking process that goes into selecting appropriate assistive technology for a particular student.



Supporting stakeholder collaboration

“Any time that a teacher brings in a project...

I usually compare notes with them first.... Some of them are very involved, and I may need to communicate with them as to whether we can take out some of the lines, maybe I can add something, enlarge the project...we have to communicate with the teacher on everything practically we do... we're in constant communication with them.”

Maynard Simmons, vision teacher

This decisionmaking process is driven by **stakeholder collaboration** around the student’s needs. This means that Sean, members of his family, several of his teachers, and any other staff who work with Sean are all involved in discussions about using assistive technology to support his learning needs and goals.

Collaboration also occurs after the initial selection process, as support staff work collaboratively with teachers, engaging in constant, ongoing communication with them. The goal of the collaboration is to provide assistance on a consultative basis, to ensure that teachers know how to use the assistive technology, understand how it enables their students to gain access to the curriculum, and are able to make informed evaluations about whether or not a student is benefiting sufficiently from the assistive technology. It is important that staff who work with Sean **monitor the impact** of the assistive technology on his education. If a teacher feels that Sean is having difficulty with his schoolwork, he or she will work with staff at the vision center to make sure that the support Sean receives from the assistive technology remains relevant to his learning needs.


The capacity that exists at Sean’s high school is extended even further when teachers work collaboratively with the specialists. The more teachers practice using assistive technology with their students with disabilities and the more they learn about the assistive technology, the more likely they are to **become comfortable with the technology and reduce their fear**.



Building capacity

“With Sean in the class, I took longer to prepare, but it was worth it in the end. Now I have preparation done, in case I have another blind student, I’m somewhat prepared for them.... It’s prepared me and made me think a lot more about what it is I have to do before I walk in the classroom, before I start teaching.”

Patrick Daniels, high school English teacher



Once that fear is gone, teachers feel much more comfortable with assistive technology and become more open to trying new things. They are also then much more prepared to use assistive technology with students in the future, which helps to **build the capacity** of the school even further.

Sean’s loss of sight hasn’t prevented him from benefiting from the same educational opportunities as his nondisabled students or from following his dreams to become a lawyer. All of his teachers continue to hold high expectations for Sean, and collaborate to make sure that the assistive technology that helps Sean keeps him on track to succeeding inside and outside of school. Not only has assistive technology opened doors for Sean at school, it also has enabled him to take on a challenging internship program at Legal Aid, potentially opening doors for Sean’s post-highschool goals, as well.