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# Virtual Home Visits: They Help Surmount Early Intervention Barriers

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## Virtual Home Visits: They Help Surmount Early Intervention Barriers

*An Interview with Sue Thain Olsen, M.Ed., Director, Exemplary Services, Center for Persons with Disabilities (CPD), Utah State University & Amy Henningsen, OTR/L, Occupational Therapist, Up to 3 Early Intervention Program, Center for Persons with Disabilities, Utah State University*

Barriers related to geography, time and transportation have long bedeviled IDEA Part C early intervention programs serving remote rural areas. These federally-funded programs are obligated to serve all eligible infants and toddlers in their areas regardless of degree of difficulty. Now, however, technology-based virtual home visits offer a way around those barriers in a way consistent with the current burgeoning digital culture. Though non-traditional, the new approach meets the criteria for service provision in a child's most natural environment, according to Sue Thain Olsen, director of the Division of Exemplary Services at Utah State University's Center for Persons with Disabilities.

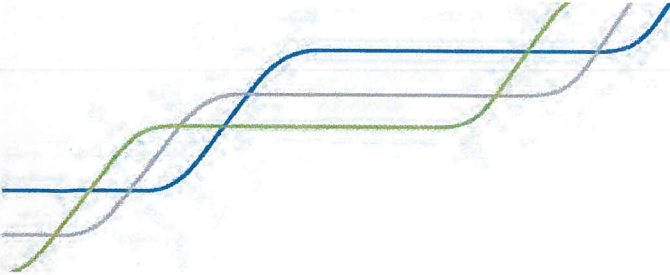


Ms. Olsen is also the co-principal investigator for the CPD's two-year-old technology based Steppingstones grant, administered by the Department of Education's Office of Special Education Programs (OSEP). She coordinates this program with Barbara Fiechtl and Dr. Sarah Rule. The study, a formative evaluation process aimed at improving programs, measures the feasibility of using technology to provide virtual home visits to infants and toddlers in the most remote rural areas of northern Utah.

"Technology, won't replace face-to-face contact with our families, but technology will supplement that contact and increase the frequency of services and contacts," declares Ms. Olsen.



"We're responsible for covering a geographical area 200 miles east to west, and 80 miles north to south," she explains. "The territory is carved up by two mountain ranges. Travel therefore becomes very complicated. This is rough country made even rougher by severe winters. USU – and



the CPD – is located in the geographic center of this expanse in the territory's biggest urban area, Logan, Utah, where most of our staffers are located."

### **A Full Day of Travel for Each Home Visit**

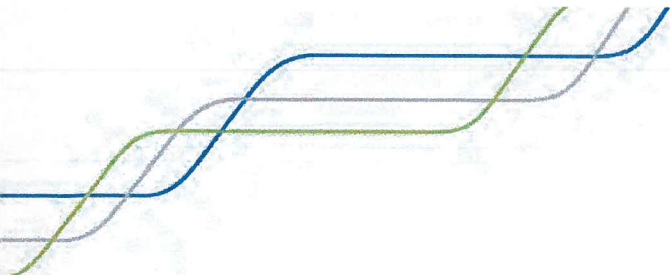
When Ms. Olsen's staffers travel to visit early intervention families in counties east or west of Logan they allow for a full day of travel. "We typically travel an hour or two in both directions to reach our families," she notes. Ms. Olsen, who has administered the Up to 3 Early Intervention program since 2000, says she quickly saw "that we could not provide the same level of service to children and families in outlying areas that we provided to children who live within a 30-minute drive from us or who live in the same valley where Up To 3's offices are located. We are tasked with ensuring equity and individualized services. If a child needs something we should be there to provide what's needed. Logistically, however, we were unable to achieve that part of our mission."

USU's special education department at the time was conducting distance learning, she recalls. "We wondered whether a distance learning concept would be useful in providing services to our families in remote areas. It was really Barb's idea. In 2007 we explored distance learning-type alternatives."

Back then, however, she notes, social media was not as popular. "Facebook and Myspace existed for fun networking but we needed something more prescribed. USU was using Breeze, a former Acrobat web conferencing program now known as Acrobat Connect which would enable us to do two-way audio and two-way video. We were encouraged."

Her team then mounted an unsuccessful attempt to garner a Steppingstones grant. "Consequently, we tried a pilot study in Up to 3. The study involved four families who lived close together and had in-home computers. Early intervention staffers are accustomed to sitting on the floor with kids and talking face to face with parents. We needed to find out if we could coach families well enough so they could implement the developmental strategies without watching us model the process."

The first field testing produced good results, Ms. Olsen says. "We learned to move our computers out of offices and put them in families' kitchens and family rooms so that we could connect with children during mealtime or play. We also learned teaching



strategies like using a rag doll so the physical therapist could use the doll to demonstrate sitting positions."

As a result of her staff feedback, she recalls, "we examined the ways to increase our verbal input to families in terms instruction. We learned that we had to coach and mentor to build the parent's skills, because virtual home visits preclude physical modeling. Our staffers are not physically present in a family's home and are thus unable to demonstrate in person. We need to provide positive support and positive feedback while offering instruction. We learned to talk parents through new procedures, for instance talking a family through the steps to get their child to pull to stand at their couch."

### **Securing a Grant: The Second Time's a Charm**

Olsen, Fiechtl and Rule obtained a Steppingstones grant on the second try, in August 2008. "During the first year we tried our approach on families that lived close by so that if we had to perform technology fixes we were near enough to drive to families' homes and show them how to put the software on their computers and hook up their mics and cameras." In that



initial phase, she explains, "our plan was to start simple with the least amount of technology support and increase as we identified needs. We mailed out the cameras and mics to families who had computers with written instruction for downloading software. Most parents did well but we had a few families that we needed to provide instruction to over the phone while they completed the tasks. We also learned that some families had good computers in their homes while others, usually young parents with very young children, often had old, slow computers that were unable to support high-speed Internet." In short, she adds, "we learned not to assume that just because a family has a computer that the equipment would work and would support the bandwidth we needed to stream the video and audio simultaneously without freezing and echoing. Those visits, when there were computer glitches, were miserable and frustrating" she commented.

We've used four video/voice Internet communications during the grant's two years," she notes: Breeze, Skype (<http://www.skype.com>), ooVoo (<http://www.oovoo.com/>) and VZOChat, with Skype "being the most popular among our





families and staff. In the process, we've evolved technologically from stick mics to laptops equipped with camera and a mic. The technology is moving very rapidly and is becoming relatively inexpensive. In the first year of the grant we spent \$80-\$100 a piece for cameras, because we wanted good resolution. We can now buy a wide-angle camera, with a mic, for \$30-\$40."

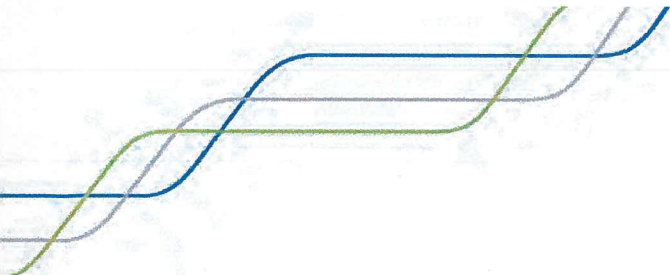
In the grant's next phase, she says, "we want to replicate our programs on a real-world basis in Utah." However, those programs, she emphasizes, will not operate under the supportive umbrella of Utah State University. "The programs will need to access easy to use and affordable systems. For example, early intervention programs and families can download Skype for free. Skype is user-friendly, is constantly upgrading and has very good technical assistance. If a user encounters a problem like an echo he/she can email Skype and receive a remedy in a return email; ooVoo and VZOchat have similar supports."

### **Gaining Internet Access: Improvisation Is Sometimes Necessary**

Already the Steppingstones VHV program has fanned out into the state's rural areas to serve families that live 25 miles or more from the CPD base in Logan. "There are families for which income – and, thus, Internet access -- is often a problem," Ms. Olsen notes. "We found families using 'novel' Internet access," she says. "One family was accessing wireless service from the large truck stop next to their home. We were able to get them hooked up with a satellite IP," she states. "The grant pays for monthly Internet services for families who do not have any. It's still cost effective; we recoup the cost of Internet service in travel time and mileage reimbursement."

"We've learned that our most rural areas lack good, reliable Internet providers, which presented us with more logistic problems. The family that resided next to the truck stop lived about 120 miles from our center. The Internet provider who installed the satellite dish on the house was exceptionally slow to send someone to fix an equipment problem, whereas local IP's are able to resolve signal problems within 24 hours of the request."

To solve some of those problems, she explains, "we've begun using wireless technology supplied by cell phone providers, such as Verizon and Sprint. The technology is handy but the speed is slow and the signals are not always very strong."



Recently, she adds, "we discovered that one of our wireless service providers now offers a faster speed wireless card. We'll experiment with some new wireless USB cards and see how it works. Although Internet service is not often available for families on the rural and frontier areas they do typically have cell phone coverage. We're hoping that the wireless cards will offer faster speeds so that we no longer have to contend with frozen screens when we attempt audio and video streaming."

### **Bridging the Technology Gap: Laptops on Loan**

In addition to problems with high speed, broadband Internet access, the project has had to address the lack of adequate computer access by participating families, Ms. Olsen explains. The VHV program is attempting to employ state-of-the art technology on very old computers used by those families. Laptops may finally bridge this technology gap, she hopes.

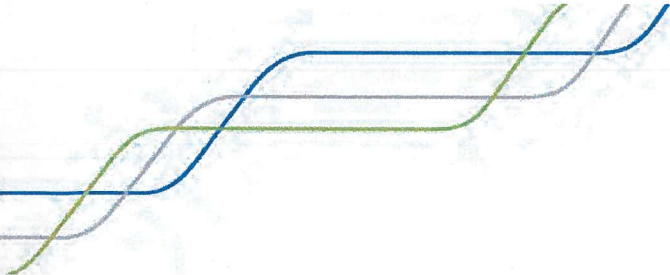
The condition of family computers brought to CPD for repair was one of the major factors that convinced Ms. Olsen and her team to move to loaner laptops. "The state of some of the family computers that were brought in for repair defies description. Some were filled with kitchen grease or with dust that was an inch thick. Many families simply are unaware that this equipment must be kept in good repair."

"We've bought our own laptops that we loan out to families. We purchase the laptops and set them up with the cameras and mics if needed. Most any laptop purchased today will come with a camera and mic that offer good resolution. We still might use an external camera to allow the parent to place the camera at an angle that a built in camera won't allow. At times there is still an audio echo but the desktop application improvements have almost resolved that problem.



During this past year we've found that we have to lock out families' access to the web because they occasionally surf too much, which opens our laptops to spyware and viruses."

CPD IT personnel have installed anti-virus protection on all the loaned laptops, she says, "but some of our younger families choke the online storage capacity with music downloads, causing the computers to crash. Although we've limited their use of the laptops, they are still able to email and Skype so they Skype with whomever they wish to Skype with. Which is a nice perk for families."



The loaned laptop approach and use of the VHV model, she notes, “has done wonders for us in terms of cost savings for mileage and transportation, which are no longer negative factors for us.”

### **The Decision Point: When to Implement Virtual Home Visits?**

Ms. Olsen explains that decisions about home visits are based on Individualized Family Service Plans (IFSPs). “The team that assesses child and family needs works with the parents when deciding the frequency and intensity of the service visits. Nevertheless, she states, “often the team members realize that the intensity of visits needed will be impossible due to travel and time.” Such an admission instigates a conversation, Ms. Olsen says. “This is when we suggest using our virtual visit system, which empowers a weekly virtual visit.”

This year's brutal winter weather, she says, created both problems and opportunities. “We had a family that was living in a very remote area. The staff had to drive down a long dirt road to get to the house that was never plowed. This was an obvious problem. The mother told our staff, ‘You'll never be able to get here in January or February because they don't clear our roads, so I guess we won't see you during those months. I don't want you to come out then because you'll get stuck or get hurt.’ The staff saw this as a perfect opportunity and solved that problem – with virtual home visits.”



Screenshot of Virtual Home Visit

Also this winter, she relates, “we had had a couple of children who are so medically fragile that they required multiple services, including vision, physical, speech and occupational therapies. The parents said to us, ‘We can't have all these germs coming into our house during RSV season.’” Respiratory syncytial virus (RSV) is a common virus that leads to mild, cold-like symptoms in adults and older healthy children. The virus, Ms. Olsen emphasizes, can be more serious in babies, especially to those in certain high-risk groups. Infants under age five are most severely affected and often experience the most difficulty breathing.

“We also presented the family of this child with the virtual visit option. It worked. We get surveys back from the family stating, ‘We are glad we don't have you germy people coming through our door anymore.’”





## The Tradeoff

Mileage wise, Ms. Olsen says, “for my budget VHV represents a tradeoff as well as savings on salary for those occasions on which staff would normally be on the road. I’ve invested those savings in technology, specifically laptops and Internet connection for families who don’t have any.”

Still, she cautions, “Internet services cost anywhere from \$35/month to \$110/month depending on the provider, plus installation. We’ve been able to establish some partnerships with the Internet providers and they waive installation and contract requirements. About one-third of our families lack Internet in their homes. Over time I anticipate that the percentage will decrease as the digital population grows up and IP services outreach.”

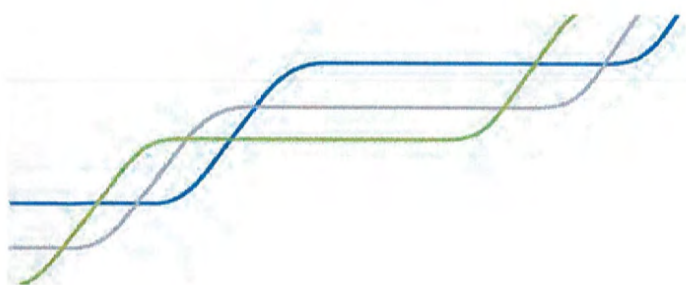
Moving forward, she adds, “I guesstimate that 50% or more of the families in rural parts of this state will have Internet. Unfortunately, Internet access here remains expensive because ISPs do not want to cover remote areas. We’re hoping our wireless USB cards will prove successful. What’s important in this process is the selection of a company that has coverage of remote areas. Fortunately, a few of them are coming up to speed.”

The tradeoff, she adds, “is that we only see the child once or twice a month without VHV. On the other hand, we ask ourselves, are the quality issues we experience in the delivery pattern, like echoes, for example, worth it? The answer is, yes, because it often comes down to a virtual visit or limited visits. It’s like having a car that doesn’t run so well but without it you’d be walking. We’ll be living with those issues until the providers are more available and their services economically feasible.”

## “I Hope the Virtual Home Visit Concept Makes Everyone Happier”

Federal law, Ms. Olsen notes, states “that we must serve everyone. We can’t have a waiting list. It’s our job to find children to serve. Now we can serve them more appropriately with a higher level of service, thanks to VHV.”

For example, sometimes face-to-face home visits encounter unanticipated roadblocks. Occasionally, she says, families are not at home when service providers arrive after driving for 90 minutes. “When that happens it is very disconcerting for everyone involved. We had some attitude issues with service providers who became



disgruntled and discouraged when a family was not present at the appointed time. The trouble is, if the provider calls to remind a family of their visit and they don't answer, the provider can't cancel the visit, the best they can do is say, 'I'm on my way and will be there in an hour – and I hope you're there.' I think that occasionally families believed that they were putting us out and that providing service to them – which is free -- was a burden for us. The result was that many of those families dropped out of services because it was a struggle for us and became a struggle for them. I'm hoping that the VHV concept makes everyone happier."

In year two of the grant, she continues, "we began conducting three-way meetings with our school districts. When a child reaches age three we end our services to that child. The child, if eligible, enters district programs. We must hold a transition meeting at least three months prior to a child's third birthday. The meeting includes the child's parents and the early intervention program's service coordinator and a school district representative. With families that live a distance away we were rescheduling meetings two or three times before a meeting actually took place. In these cases we usually ended up meeting just days before the child turned three years old. Three-way virtual meetings could put an end to those rescheduling problems."



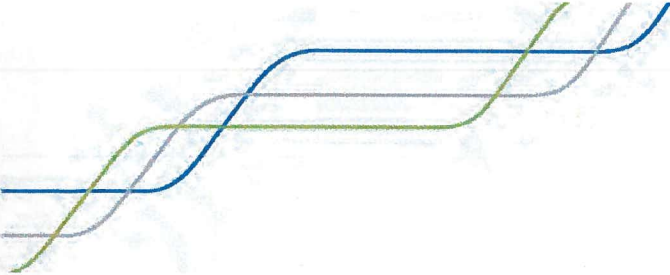
Recently, she notes, "we've conducted meetings via Acrobat Connect Now, a very efficient desktop conferencing meeting system that allows us to share our desktop, show our forms up and speak with the parents and school district as we complete those forms. We do digital signatures so that all participants realize that this is a legal document. In short, we get our meetings held in a timely fashion, which we were unable to accomplish earlier."

### **"Virtual Home Visits Fit the Current Culture"**

While families appear to favor the virtual home visit concept, service providers' views are mixed, Ms. Olsen says. "With our Steppingstone grant, our families complete a post-visit survey, as do our therapists and service providers. Our parents are generally more favorable toward VHV than our service providers."

Surprisingly, she notes, for many families there may be some comfort derived from not having someone visit the home time





and again. They're maybe relieved not to have to prepare the home for a physical visit. A virtual visit is non-intrusive. If I was one of our parents I think I'd prefer a virtual visit for that reason. I want to emphasize that our parents are always accommodating and gracious when we come into their homes either physically or virtually. Our parents rate virtual home visits higher than our therapists rate them, probably because the nature of therapy is hands-on and face-to-face."

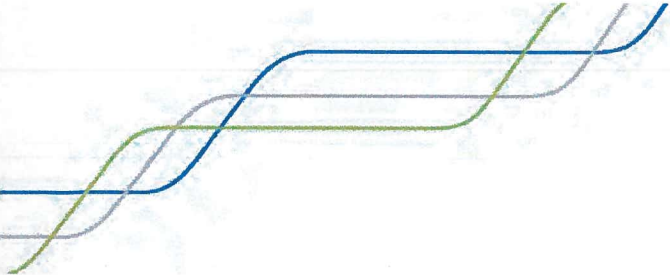
As effective as virtual visits are, she continues, there is an inevitable loss of closeness. "There needs to be a high level of connectivity. That need is one reason why we regard virtual visits as supplemental and not as a replacement for home visits. Early intervention staff like working directly with children and families. Motor therapists need to hold infants and toddlers to understand their tone and movement patterns."

In Australia, she points out, there is a nationwide program serving children with hearing impairments. Because of the remoteness of so much of that country virtual visits are all that are possible. Face-to-face home visits have been completely abandoned. For families there, virtuality is all they know.

The age-range of the VHV program's parents is a factor in their home visit preference, Ms. Olsen explains. "In Utah, couples often marry young and have children quickly. The majority of parents we work with range in age from their early 20s to mid-30s. Parents in their 20s think virtual visits are fine and cool. They are very techno-friendly. They think nothing of Skyping, for example. They were Skyping before they encountered us. Families headed by thirty-somethings are similar. That age range has grown up with computers."

"Virtual visits fit the current digital culture," she declares. "That's another advantage for the program. And our service providers are now younger as well. I'm hiring twenty-somethings out of college who are very comfortable working with computers. The timing is right for this."

The ability of families to cope with the VHV technology varies widely, Ms. Olsen says. "Some have new computers in their homes and are facile with the equipment. Others aren't and don't yet know how to access the Internet. When we call families to see if they wish to participate in the VHV program we ask questions about their familiarity with computer technology, connection to Internet and experience with



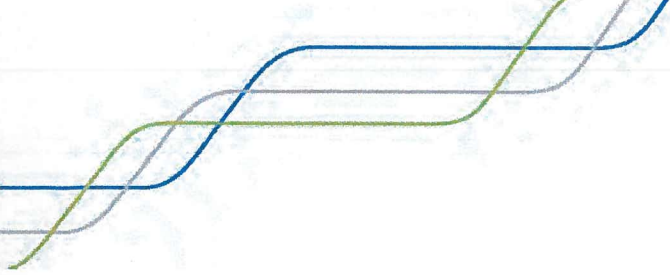
use of social media. Even if there is a lack of familiarity we have learned that we can coach families through the entire process, from sign-on to sign-off, by phone." We have also developed some online tutorials that a parent can watch that takes them through the steps of installing their cameras and mics and downloading the desktop software. We schedule practice sessions with them prior to their first visit to test their system and answer any questions."

Overall, she says, virtual home visits make families feel more connected to their service providers. "We haven't yet finished pushing out the qualitative data. However, we have a few families who live in remote areas that were taken out of the study at the end of year one. They wanted to continue because they liked the VHV approach and ease of access to their child's therapists. That's very telling. We didn't reinclude them in the study but they do get virtual home visits."



If Sue, Barb, or Sarah had any doubt about the timeliness of VHV, that doubt was dispelled when the team presented at the Division for Early Childhood (DEC) conference in October 2009. "The room was packed. The attendees were there because they were interested in the technology and because they were interested in the same issues we were interested in. As the economy becomes tighter we have to be more creative in how we deploy and implement VHV technology," she declares.

The lone fly in the ointment at this point, Sue points out, is not knowing whether the U.S. Department of Education's Office of Special Education Programs (OSEP), which also administers the Steppingstones technology grants, will view the VHV approach as meeting the natural environment criteria. "Putting virtual home visits on an equal footing with home-based visits is crucial," she declares. "I'm not sure the question has been posed to OSEP yet. To my knowledge Utah is the first state investigating the use of distance "home-based" service. We have support from Utah's Part C lead state agency – in our case, the Department of Health – we hope to give them sufficient evidence to support the efficacy of the service methodology. The Part C re-authorization will occur in the next year or so. Perhaps that's when the virtual home visit option question will be posed."

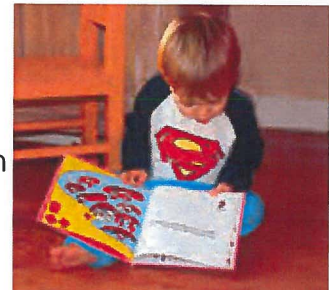


Ms. Amy Henningsen is an occupational therapist and AT practitioner in the CPD Up to 3 early intervention program and the Utah Assistive Technology Program. She has been a VHV therapist and views the opportunities that technology provides as an essential element for early intervention children.

AT training, she points out, would make VHV even more effective for early intervention families and service providers. Such training is missing in early intervention in Utah, Ms. Henningsen adds. The UATP conducts AT training webinars. "The technology produces live seminars with an interactive feature that enhances audience participation. Use of this technology has increased the capacity of the day-to-day early intervention provider. That's very important in a state like Utah. To be able to bring people together for AT trainings is difficult, so the virtual connection is vital. "

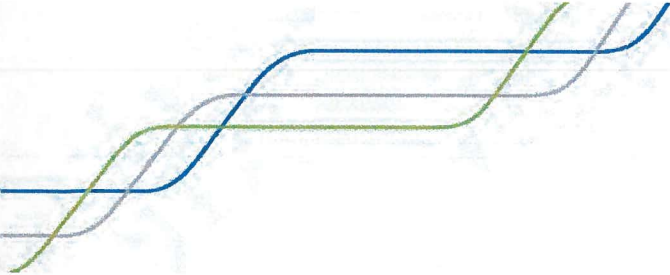
### **Communications Technology for Verbal and Non-Verbal Children**

Sue Olsen and Amy Henningsen each work with verbal and non-verbal infants and toddlers. For both women, communication strategies and technology are an integral part of their practice. "Communication is part of everything I do with a child," Ms. Henningsen comments. "We start with children who have no functional communication skills and then work forward from there in encouraging a child to interact with his/her environment. Technology helps get their attention and hold it. So we can apply coaching techniques within the framework of the basic intentional communicative behaviors common to all children."



Ms. Henningsen comments that Ms. Stacey Sessions, CCC-SLP, is an augmentative communication specialist who works with the children through the Techno Tots class. "There we perform an extensive evaluation in the areas of communication, positioning and mobility, environmental access for play and learning, and early literacy. We begin with basic skills and then advances to higher, more sophisticated technologies as apparent for the individual child and family."

"We matched a little boy with a neuro-chemical disorder with one of the higher electronic communication devices - a dynamic screen. The boy could touch the screen and move from one communicative page to another. He was able to



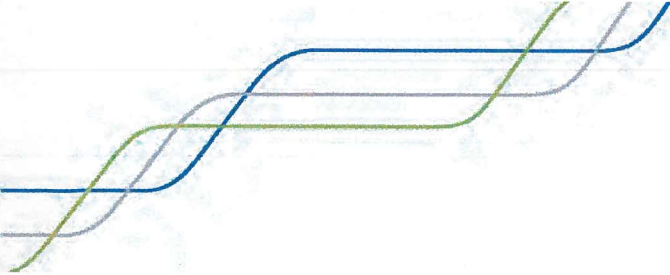
navigate his own communication system. In that situation we actually had a family whose members were very proficient at using the computer. We showed the family members how to program the device, the features they ought to include, how to make pages and perform related tasks. The parents took it and ran with it. Their child had physical limitations but normal cognitive ability." The technology she employs, she explains, ranges from one-step communicators to sophisticated high-tech speech generated communication devices such as the PRC SpringBoard ([www.prentrom.com](http://www.prentrom.com)), the Dynavox Dymomo ([www.dynavoxtech.com](http://www.dynavoxtech.com)), and others.

### **Technology Combats Helplessness, Promoting Independence**

According to Ms. Henningsen, the use of assistive technology can be a significant motivator for very young children who lack the ability to access their environment without the assistance of a parent or caregiver. To address these needs and to fulfill the legislative requirement to evaluate and to provide assistive technology services and devices, the Up to 3 program offers the Techno Tots home-based and center classes.

For those children with severe physical, cognitive, or communicative limitations, technology offers access to the world of play and learning and a means to communicate their basic wants and needs. "During those first two years of life novel things that blink and make noises are fascinating for young children," she says. "When kids are unable to access their world it is very sad, especially for those children who are bright and sharp but who are unable to act on the busy boxes or toys that have lights, sound and music." Without this stimulation, she insists, helplessness too often becomes a critical aspect.

"If children are unable to cause anything to happen in their environment they give up. Later on these children can be provided with multiple ways of accessing their environment, but unfortunately they have learned early to depend on others to meet their needs. Their lives become based around social interaction. At Techno Tots, children who are unable to walk can learn to operate a power wheelchair; children who are unable to speak or express their desires are introduced to communication boards and/or electronic communication devices; children who are unable to play independently have access to adapted toys and switches that activate battery operated toys or computer programs."



She adds, "assistive technology is so empowering because otherwise they have no means to control their environment. This past year, we were able to introduce a little boy to the use of an electronic communication device and a powered wheelchair. We began operating the wheelchair with a single switch so he could go forward and stop. When he graduated from our program we had acquired a powered wheelchair for him that he uses at home. He is three years old. Now when his mother summons him, he'll go the opposite way! It's the first time in his life he has the ability to say 'no and run the other way.' He's a teenager at age three!"

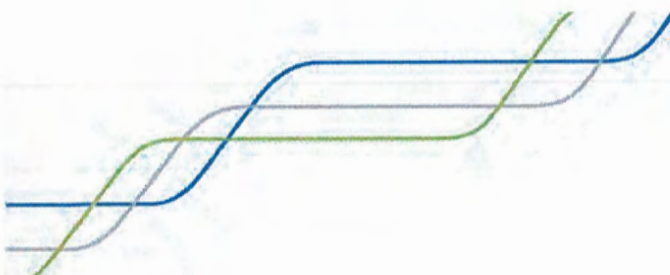
Ms. Henningsen's group also uses technology to promote early literacy skills using adapted books and computer access. "For infants and toddlers words don't mean much. We use digital photos of family members and familiar things within their own environment. We can put the photos into a PowerPoint format. We have an AT program here and AT classes through special education and the department of communicative disorders. The college students participating in those programs and classes assemble PowerPoint books. We teach the students how to adapt a mouse so a switch can be plugged into it. Then when the child hits the switch they can turn the pages actually 'read' their own story book. We also help families create a CD for home use. This helps integrate computer access into a family's daily life."

Transitioning to Part B: "There Are Things That Need to Happen"

Preparing infants and toddlers to move from IDEA Part C to Part B services for school age children, is an ongoing challenge for Sue Olsen and Amy Henningsen. Says Ms. Olsen: "When I returned to the early intervention field following a short absence I realized, from an administrative point of view, that we were sending kids out of our program who didn't walk, didn't have a form of mobility and we hadn't done anything about it."



"We had not been proactively supporting families and addressing children's mobility needs. Sometimes it seems that we're stepping on a family's dreams but we have to continue telling parents, 'It's not that we don't expect the child to talk or walk but there are things that need to happen so that a child can participate in school and playground activities or go to the park with your family.' One of our goals for the program is to have these conversations with families – and sometimes the conversations are difficult. However, if we develop the right relationship with the families they will know that these difficult conversations are in a child's best interest."



Their goal, Ms. Olsen states, "is to ensure that every child leaving our program, if possible, has some kind of mobility device, whether a walker, a scooter or a chair or stroller and that the child possesses a communication device providing assistance ranging from signing to a picture exchange to augmentative communication. Meeting this goal challenges us every day. We know that when the child goes into Part B he/she will leave the family's home and enter a very different world." In that new world, she emphasizes, "a child should not be carried off the bus or down the school corridor. If a child has to be carried, how does that make him/her appear to peers? Even at age three, kids begin to wonder how other children can do things by themselves while he/she remains stuck."

### **Increasing Families' Knowledge of AT Options**

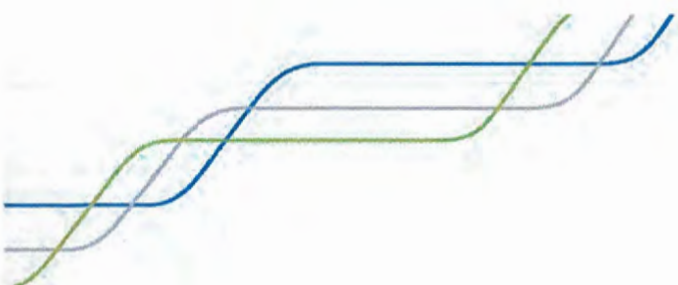
Early in a child's life his/her family members are likely not very knowledgeable about their child's disabilities nor about assistive technology options. Amy and her colleagues teach family members to advocate for their child in both areas.

"Parents of kids with significant disabilities are taught advocacy skills immediately upon completion of a child's diagnosis; parents of children with milder disabilities are taught these skills a little later. Our service coordinators advise families about how to advocate for their children. We let parents know that we expect them to ask the hard questions. We have to be brave enough to tell families that we expect them to advocate even when their advocacy might prove to be problematic for us."

Amy has learned, she says, that the shock of having a child with disabilities forces parents to deal with difficult truths. "These parents soon learn that the strength and determination they need to deal with their child's issues was always there, waiting to be called upon. Our task is to nurture that. This tough love approach toward parental advocacy, Ms. Henningsen says, "ensures families that they should expect their child with a disability to have all the same advantages as their other children who don't have disabilities. That's sometimes a tall order."

CPD, Ms. Olsen explains, maintains a post-high school program for youths ages 18-22. "They come here to learn job and life skills and to work at the university. Fortunately, Amy and I have been around so long that we can remember when those kids were in our early intervention programs. Their parents continue to advocate for them,





encouraging them to go to work and have jobs. The parents are still plugging away. So are we."