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Solutions

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Supporting the Transparency of Switch Access to Assistive Technology

(especially for students with the most complex bodies)

In our current everyday lives at school and at home, our world supports the use of assistive technology more than it ever did. The use of computers, augmentative communication devices, powered chairs, iPads, smartphones and smartboards can be observed in use with all students. Access to these technologies presumes a direct selection approach. Hands and fingers are supposed to work to access these keyboards and screens. For children who have the most complex bodies, access to these technologies has needed to be through switch access. However, the use of switches and their impact on the child's ability to perform the task the technology controls is still fraught with challenges.

In most cases, switches have taken center stage. They, themselves, have become the activity, or have become more important than the activity itself. But switches are not the activity and shouldn't be the a primary focus of an activity. The activity is what the child needs to be engaged in, learning and exploring.

Through the use of electronic switches, transparency can more readily be encouraged. In short, the switch is not the focus of the activity, but can become transparent to the activity. Using zero force, electronic switches can also assist a student in managing multiple switch sites, not just one site.

Just changing from a mechanical to an electronic switch, however, is not transparency. Nor does it mean that a replacement of one switch for another is supportive of transparency. Transparency is more than just making the switch less important.

Switch access itself, its assessment and its use within access to assistive technology and its limitations needs to be understood.

AT assessment appears to now initially focus on switch access; it's almost become a "standard of practice" when assessing children with complex bodies. Understandably, this paradigm is suggested in many texts on the assessment process for use of assistive technology. These texts share a process of assessment by starting with looking at or assessing the method of access first. However, this process was not developed for children, but rather was a process originally developed for adults who had a degenerative, weakening disease or who had an acquired injury. These adults had already been readers, spellers, writers and ambulators. This original access was to writing and reading and to the primary use of a computer. Switch access sites were easy to find, as these adults had very limited movement. They were not growing or changing, but already had very limited movement.

This "standard" paradigm of assessment is not adequate when looking at children - children who are developing, growing and who are inexperienced. Switch access

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KAREN KANGAS has worked as an OT since 1973 in many and varied settings, including the school system, group homes, early intervention programs, integrated day care, home health, rehabilitation centers, residential facilities and long-term care facilities. In 1985, she was invited to develop programs to support inclusion and increased independence through the use of seating and access with assistive technology through the PA Board of Education, Bureau of Special Education and then, subsequently, in 1990, at Pennsylvania State University's University Hospital Rehabilitation Center.

She has been actively teaching since 1985 on Seating and Positioning; Alternative Access and Powered Mobility; Assessment and Integration of Assistive Technology all over the country, as well as in Canada, Sweden, Israel, Ireland, Scotland, the United Kingdom and New Zealand. She teaches a summer graduate course on pediatric seating at Misericordia University.

She is currently in private practice, within which she continues to treat both children and adults directly, provides consultation to local teams and their children, as well as provides education through clinical workshops. She is currently writing and developing a course study on Seating, Mobility and Access, as well as completing a book on seating, access and powered mobility with children.

LISA ROTELLI is currently the Director and Education Coordinator/Consultant of Adaptive Switch Labs, Inc. in Spicewood, TX. Lisa originally trained in physical therapy and worked in rehabilitation in California rehabilitation centers. She became very interested in seating and specifically in powered mobility and became a manufacturer's representative for the state of California, as one of the first women in the industry in this field. She has been a key developer, inventor and small manufacturer at Adaptive Switch Labs for alternative access to powered mobility for the last 14 years. At Adaptive Switch Labs, she continues to support the use of alternative access, develop new products and regularly teaches therapists and medical suppliers, as well as manufacturers, on product use, programming of powered chairs and client support.

Lisa and Karen have worked together for over 10 years, especially directly with therapists in "hands-on" workshops and directly with children.

cannot be how we first support an involvement with assistive technology when we are working with children. Children who have never read, spelled or written, and many who have never walked or used their hands for exploration, cannot be assessed for access as a first step of assessment. Children, all children, grow and develop. All children learn. But learning environments are critical to the support of learning. Rich, exciting environments support exploration and provide children with opportunities to demonstrate interest and intention. A switch alone, as an activity, can never do this.

Switches, their placement, their configuration and their expectation of use can really alter actual learning. Making the switch work, and counting switch hits, can become the activity of focus. Or, waiting until "switch" access is consistent, becomes the precursor to all other learning activities. This needs to change.

With electronic switches, no force (pressure) is required. They can be placed very close to the body and activated with a simple movement towards them. They do not have to be "held" or "hit" or "targeted," but rather can be placed very near the body, with a simple movement causing activation and release. This allows the child an opportunity to focus on the activity the switch is controlling.

With switches that require force, five steps are actually required to manage them. First the switch must be located; most frequently this is by looking at it or with vision. Then after the switch is located, it must be touched, then it must be pressed, then it must be held and then released. Only the "holding" varies with the activity. The "holding" is long if making a powered chair go, and the "holding" is quick if choosing a location on a keyboard or AAC device. These five steps have to be managed, and to manage them, they require isolated and graded movement. Since children with complex bodies find graded movement difficult, they frequently "wind up" and "throw" their hand to "hit" a switch. Or if the switch is placed at the head, they almost "bang" it to make it work. Since "hitting" or "banging" is not a motor pattern easily repeated, software changes or physical configurations of activities are dramatically altered. Scanning arrays are made to be extremely simple, targets are made to be large, scanning time is lengthened. This arbitrary, "fake" or "altered" software becomes boring or hard to predict due to its speed or lack of variety and interest. Automatic scanning with a single switch becomes the only method utilized

Close up of Douglas, a teenager from MN, in his powered chair with his AAC device on, a PRC Vantage. He uses electronic (proximity) switches within his headrest for both driving, and for accessing scanning for his AAC device.

for access. Yet, automatic scanning is not simple, but is the most challenging cognitively; it requires waiting and interrupting, waiting, and quick responding, and to work, the scanning array must be known so that timing can be anticipated.

An electronic switch requires no force, no pressure. Location of the switch does not have to be visual, but can be placed very near a body part. A simple movement towards the switch (touch only) will activate the switch, and moving away releases the switch. This simple movement of the body part, requiring no pressure, allows the child to focus on the activity. The movement is easily repeated. In short, most often, more than one switch can be used, as multiple sites are available. With two switches, the activity no longer has to be timed, and the array does not have to be boring. With the motor component of the switch activation made simple, the child

can more readily focus on the cognitive challenges of the activity, and the motor components, in regard to the activity, can be explored. This does not mean that "replacing" a mechanical switch with an "electronic" switch assures switch consistency and/or mastery of access.

Repeating motor acts while engaged in activity is not a simple task for anyone human. Instead, motor and cognitive demands become clear as activities are explored, become anticipated and are practiced. No one expects children to not make mistakes, but rather, everyone expects children to be engaged in activity. That engagement, as it increases in time and the repertoire of activities increases, supports a child in learning how to manage the activity and how to participate within the activity.

If switch access is the only focus, then the child misses out on the large range

of experiences required to actually learn, much less demonstrate learning.

To manage any form of access to AT, practice is needed. Practice, practice, practice, not of simply hitting a switch, but using a switch as a part of an activity. With single switch, automatic scanning that has been arbitrarily "slowed down," practice is waiting, not practice using the switch a lot.

Use of electronic switches also allows the child to perform lots of switch hits, easily. Use of electronic switches also allow switch placement to be near the head. With children with complex bodies, use of hands is a big challenge. But electronic switches placed within a headrest can allow a head to be supported, yet with a slight movement (without force), the head can control a switch. The child's head and eyes can be on the device, computer, keyboard and/or screen, and slight movements clearly manage the cursor or scan. The hands are also free to be engaged in object play, which can support the wholeness of the activity itself.

Through the use of electronic switches, we have been able to seat many children in powered chairs, and they have quickly been able to activate and release the switches in a very concrete, yet interesting activity. Children who only appeared to have limited movement, can manage more than one switch, and want to. This same type of inspiration and interest needs to be supported in the use of the computer, in literacy activities and in writing activities. Too frequently, children with the most complex bodies are placed in front of an activity, or device, and prompted to "hit" a switch on a simple and boring and slow array. We need activities of interest, wherein the child can use their switches a lot, practicing their use, not just for "accuracy," but out of interest, practicing the activity and practicing the switch use, and making mistakes, as all children do. Instead, we are "counting" switch hits for accuracy, but have an activity that requires very few switch hits. This is the reverse of a process of how all children learn.

Obviously, we all know that just holding a crayon does not mean legible writing is available to a child. But we do not ask a child to just keep picking up a crayon, hold it, make a line, then drop it, pick it up again, then drop it, then pick it up again, then drop it. No, we teach a child how to write her name. She may make mistakes, and a lot of them, but the desire to write her name, to see her name, to produce her name, supports practice in the use of the
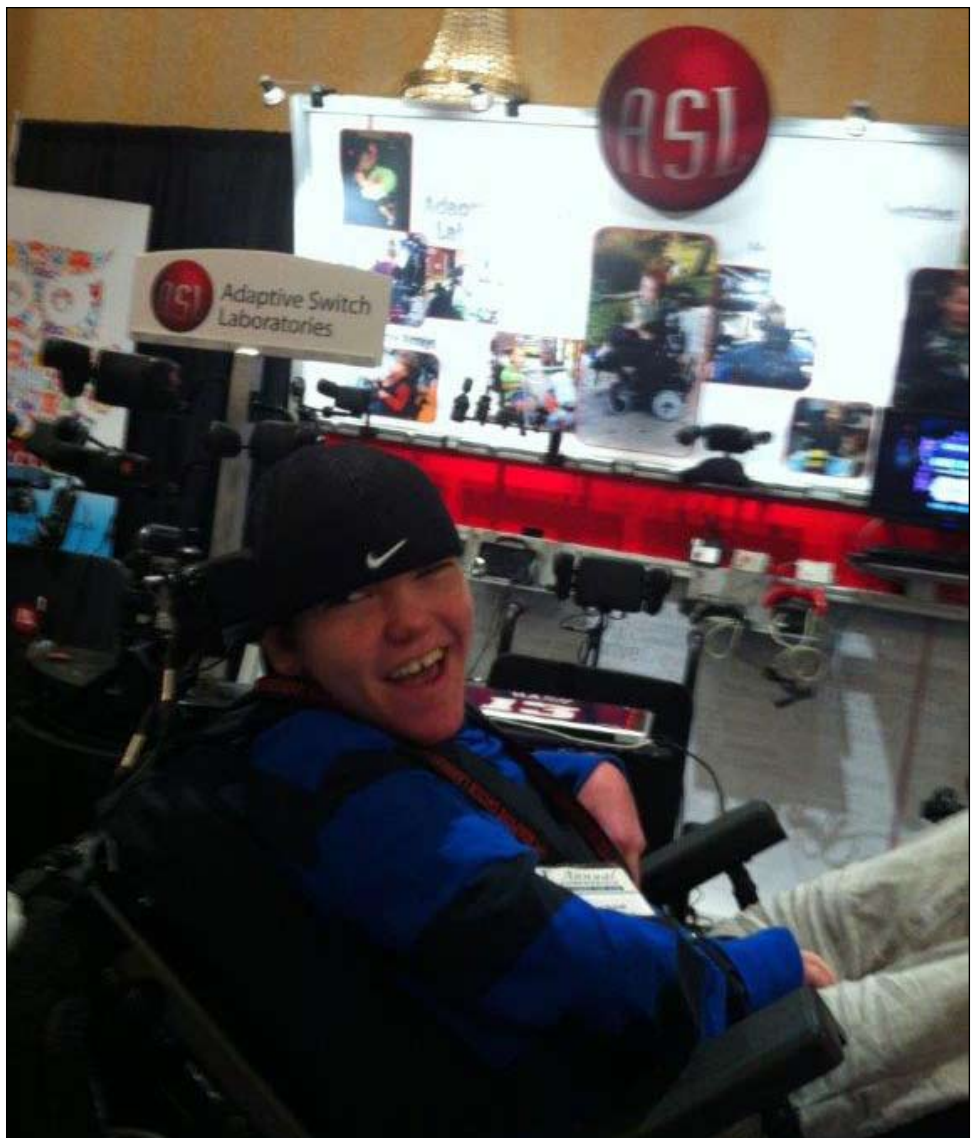
Douglas at CTG, at the Adaptive Switch Labs booth, using his electronic switches to play PlayStation.

Douglas driving in the hallway at CTG, using electronic (proximity) switches at his head for driving.

crayon and subsequently more control of the crayon. Children need practice, lots of practice within an activity.

Children with complex bodies have complex days and complex lives. This complexity often consumes a lot of time not directly relating to learning, but often relating to survival, to feeding, to breathing, to seizure management. It is time consuming. However, it is even more critical, in the time available for learning, that children have lots of opportunities, lots of experiences and more opportunities. We need to spend more of our time creating activities and environments that can support this practice, creating many opportunities for task engagement, not simply spending our time trying to find the correct switch site.

When more than one switch can be managed, more opportunities to be engaged with various types of assistive technology become possible. A child can experience mobility in a powered chair. With two-switch scanning, a child can explore apps on an iPad and use an AAC device without waiting. With three-switch use, the child can use mouse emulation and, then with the ability to use a mouse, a child can explore much or most of all activity on a computer.

This issue of transparency to activity through the use of electronic zero force switches can be the easy part. The switch is then not the activity, the scanning is not the activity. The activity gains its rightful important place with activities supporting literacy, writing, listening and communicating.

Just supporting the switch to be transparent to the activity is not THE answer. Seating for function needs to be supported. Switch mounting and configurations for various activities must vary and must be planned. Activities, themselves, need to be developed and supported with true scanning efficiency.

This journey, this road to learning, this road to independence, this opening of doors and opportunity, this journey is a challenge, but an adventure. It needs to be an adventure, and adventures are fun and hard, easy and scary, but also exciting. As activities abound, exploration and opportunity abound. Managing scanning is not easy, managing switch access is not easy, but it can be easier, and it can be shared through transparency with interesting activity. This can bring sunlight to this journey.

Isabella, 3 years old, with BFF Elmo, using electronic switches to drive.

EQUIPMENT KAREN AND LISA USE AND WHERE IT'S AVAILABLE

Please note: When you are ordering this equipment, call the manufacturer and explain what you want to do, with what equipment and what configuration. This will ensure that you get the exact equipment you want that will work with your student and your hardware and software.

Proximity Switches
Mini Head array or Elite Head array with mini-laterals with fixed proximity switches (can have one, two or three embedded in head support)

From: Adaptive Switch Labs, Inc. 125 Spur 191, Suite C, Spicewood, TX 78669; 1-800-626-8698; http://www.asl-inc.com

Fiber optic switches
From: Adaptive Switch Labs, Inc. 125 Spur 191, Suite C, Spicewood, TX 78669; 1-800-626-8698; http://www.asl-inc.com

SCATIR switch (Self-calibrating auditory tone infrared) switch,

From; Ablenet, Inc., 1081 Tenth Ave. S.E., Minneapolis, MN 55414;1-800-322-0956

Mouse Emulation
From: Adaptive Switch Labs, Inc. http://www.asl-inc.com or From: TASH, Inc http://www.ablenetinc.com

The Head Mouse

From: Origin Instruments' Head Mouse and Head Mouse Extreme: http://www.orin.com ■

Technology Driving Success

Minneapolis Public Schools have found a great recipe for success in their special education ASD classrooms. Kathy Healy, Autism District Program Facilitator, and Janet MacDonald, a special education teacher in an ASD classroom, have found four ingredients to be the pillars of their program:

- **Inclusion**
- **Independence**
- **Generalization**
- **Technology**

The first three pillars act as the ingredients, while visual learning technology is the "chef," pulling them all together in a recipe for success!

INCLUSION

This term is terrifying for some and a guiding principle for others. Janet MacDonald believes that inclusion, "when done in a purposeful manner, based on students strengths and needs," is an invaluable tool to teach independence. In 2014, there seems to be no such entity as a "typical" classroom. We have students with various abilities, backgrounds and experiences. Inclusion isn't about students merely joining physical education, media or lunch periods. Rather, it involves being truly included in the classroom's daily activities and learning objectives. Visual learning technology is an essential tool for making this happen.

Consider a group of students with different goals and objectives, language levels and cognition. Now add a range of social skills that can make learning in a dynamic group environment a challenge. Visual learning technology provides several key elements that act as a game changer in this environment. Computer aided instruction is one of 27 evidence-based practices identified by the National Professional Development Center for Autism (http://autismpdc.fpg.unc.edu/). "Computer-aided instruction can allow staff to adapt the types of visuals, level of instruction and opportunities for engagement, including all learners in the classroom objectives. Visual processing capabilities typically being their dominant information processing mode and usually possessing a heightened interest in visual materials," (Furth, 1981), "the vast majority of students with Autism can profit from individualized visual content to enhance communication, help organize daily experiences and improve school performance." (Shane, Weiss-Kapp 2007; Cafiero, 2001; Grandin, 1995) In fact, any student whose primary learning mode is visual (which is often the case with students with communications disorders) benefits greatly.

VizZle (http://www.monarchtt.com), an interactive, web-based program, is one of the visual learning tools Minneapolis Public Schools is using as the proverbial "chef" to make inclusion work. Using VizZle, the educational team is able to provide dynamic experiences on interactive boards, classroom work computers and iPads. With this type of aid, inclusion works, and works well. Each student has what they need, when they need it, in a way that is meaningful to them. VizZle is also capturing the student responses as they work on Math, English Language Arts, Science, Social Studies, ADLs, Social Skills and much more. This feature enables the teacher with an opportunity for true data-driven decision-making, providing invaluable information about student success. When you observe these Minneapolis Public School students,

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LAUREN STAFFORD, M.Ed. is currently the Vice President of Research and Instructional Design for Monarch Teaching Technologies. Ms. Stafford has worked in public and private school settings for more than 15 years as an Interventionist, and Education Supervisor supporting students with Autism and Special Education needs. She is a national presenter, trainer, and collaborator with districts from around the country developing and researching innovative web-based technology.

ANTHONY GERKE is the Vice President of Professional Services for Monarch Teaching Technologies, the makers of Vizzle. Before joining VizZle Anthony was the Director of Education at the Autism Academy of Learning in Toledo, Ohio. Anthony is an Intervention Specialist with experience using visual and technological solutions to serve individuals with ASD.

KATHY HEALY is a District Program Facilitator from Minneapolis Public Schools, where she has worked for 15 years. She has written various technology grants to implement ASD strategies through iPads and interactive software programs. Kathy also teaches and coordinates the Developmental Adapted Physical Education program at the University of Minnesota.

JANET MACDONALD has been a teacher in Minneapolis Public School in the Autism Citywide Program for the past 16 years. She has been a leader in inclusion and technology throughout the district. Janet has presented nationally at "Closing the Gap" and locally in Minnesota at "Charting the C's". Janet continues to excel at the practice of inclusion using technology, especially VizZle, for students with autism.

you can see dynamic instructional interactions. Janet MacDonald is a putting all of these pillars in place. The result: Students are completely involved in all the aspects of classroom instruction. They can see it, hear it, touch it and experience learning in a whole new way. While inclusion is complex, there are several other pillars that are key in our recipe for success.

INDEPENDENCE

As a typical descriptor in almost any IEP goal or objective, independence is pivotal for all students. We strive to lead our students towards becoming as independent as possible. While this may include small steps over time, it is always a factor. This includes activities of daily living, such as navigating the school independently or working as independently as possible on appropriate rigorous academic goals. "We foster independence in Early Childhood instruction and build towards becoming independent adults," adds MacDonald. Visual learning technology becomes a catalyst for fostering this independence.

Visuals, schedules and structured routines fall under the umbrella of the 27 evidence-

Students in Janet MacDonald's classroom, working independently on math differentiated for each individual, mapping to IEP goals and objectives.

Screenshot of VizZle

base practices outlined by the NPDC. These supports, including visual schedules, visual timers and token systems, can be used to foster independence. A student using a visual schedule to understand the expectations of the day can use a technology-based tool that tells them when, where and what happens next, increasing independence and success. Visual technology tools allow individual adaptations that can be updated with a "quick click" to make sure the information is current and conveys meaningful information to enhance independence. It can also be delivered in a printed format or launched on an iPad or Android tablet!

Organizing student learning and adapting to student preferences is complex, but attainable, using visual learning technology. Helping students understand and navigate expectations leads to a reduction in anxiety and an increase in time on task. VizZle allows educators to customize student learning by adding audio, appropriate visual supports and changing settings - so students are equally independent and successful while they are learning. Lessons are dropped into a folder, launched on the computer, a tablet or a laptop at home. This access allows the information to be generalized and increases parent support.

Minneapolis Public School teachers have data to support the impact technology has on student attention and academic achievement. Students are able to practice and learn new skills at their independent level. Janet MacDonald has seen huge gains in attention to task, as well as increased independence using interactive technology. Students are engaged, active learners, with data to show how each individual is performing and working towards established learning objectives. Learning doesn't just occur in the classroom. It needs to expand and grow, generalize to other settings and people, and in other formats to ensure true skill mastery.

GENERALIZATION AND FAMILY

Generalization is our third pillar in the recipe for success. As concrete thinkers, we need to help our students truly master information. Not just exposure in our inclusive setting, but true skill mastery. This means students need to be able to do a task in different ways, with multiple people, in multiple environments, with different materials. This is where our visual learning

technology, VizZle, is supporting dynamic teams. Lessons and activities can be shared on almost any technology platform. Student accounts can be used in speech, OT or the general education classroom. It can also be shared with parents, key players on our IEP team. Minneapolis teachers send a simple VizZleGram, or hyperlink, giving parents access to the social story or math lesson happening in the classroom. This connection is critical in helping students generalize learning to natural environments. Connecting the classroom to the home and community is the long-term goal for any student, increasing the ability to apply what they have learned. Sharing those experiences with others has been a challenge in the past. With VizZle, a simple click allows learning to extend beyond the four walls of the classroom. Janet sends regular communication to parents of her students via VizZleGram to keep them connected with the lessons and resources their children are working on in the classroom. Students can share what they have learned with their parents, using a familiar, consistent platform.

VISUAL LEARNING TECHNOLOGY

Coming back to our "chef" in the proverbial kitchen, tools like VizZle, or visual learning technology, are what bring these pillars together to create a successful learning environment for students with a range of abilities and disabilities. Technology tools allow us to plan for a Universally Designed Environment so all students have access to education and are generalizing skills, while fostering independence. Group instruction, 1:1 time, and independent work routines can all be streamlined using tech tools. Gathering data to ensure your students are successful and monitoring student progress are the foundation for making decisions and differentiating to guarantee success.

Kathy Healy advocates for the team approach in professional development for teachers and other staff members. VizZle Professional Services Team Member, Anthony Gerke, provides trainings, webinars and outreach to make sure they continue to develop best practices and approaches. He also acts as a coach to support the team based on their district needs. The Minneapolis team comes together working on this dynamic structure: Collaborating, extending professional learning through

PLCs and transforming their classrooms together. They meet once a month to share visual learning lessons and discuss the impact on students. We all want our students to reach for the stars, to exceed our expectations and enjoy learning. Visual learning technology is the key ingredient to a successful recipe, to ensure that high level learning occurs for all students in all environments.

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DISKoveries

## New and Noteworthy Hardware and Sofware

By Joan Tanenhaus

ADAPTIVE EQUIPMENT FOR YOUR CAPACITIVE DEVICE

In the DISKoveries article in August 2013, I reviewed some exciting adaptive equipment by Ivo Beckers, available from Shapedad (http://www.shapedad.etsy. com). The review included several different kinds of styluses that work with capacitive touch devices, such as iPads and Android devices. These included the Steady Stylus (a T-shaped stylus in two different sizes), Strap Stylus (a longer stylus that is placed between the index finger and the thumb with a strong Velcro strap that holds it in place; it does not need to be grasped or held, but it moves in sync with the hand), Flex Stylus (a flexible metal strip with a braided cotton sleeve that can be bent to the exact angle needed) and a Mouthstick Stylus.

FOLLOWING ARE SOME EXCELLENT NEW PRODUCTS FROM IVO AND SHAPEDAD:

Head Pointer & Stylus (includes 12" tube pointer and 13" flex pointer): This universal head mount helmet with stylus pointer works with tablets and smartphones. The fully adjustable helmet fits hat sizes 6.5 through 7.8 and includes a stainless steel mounting plate with pointer of choice (four alternatives include 12" and 14" tube pointer and a 13" and 15" flex pointer).

Head Pointer & Stylus: http://www.shapedad.etsy.com
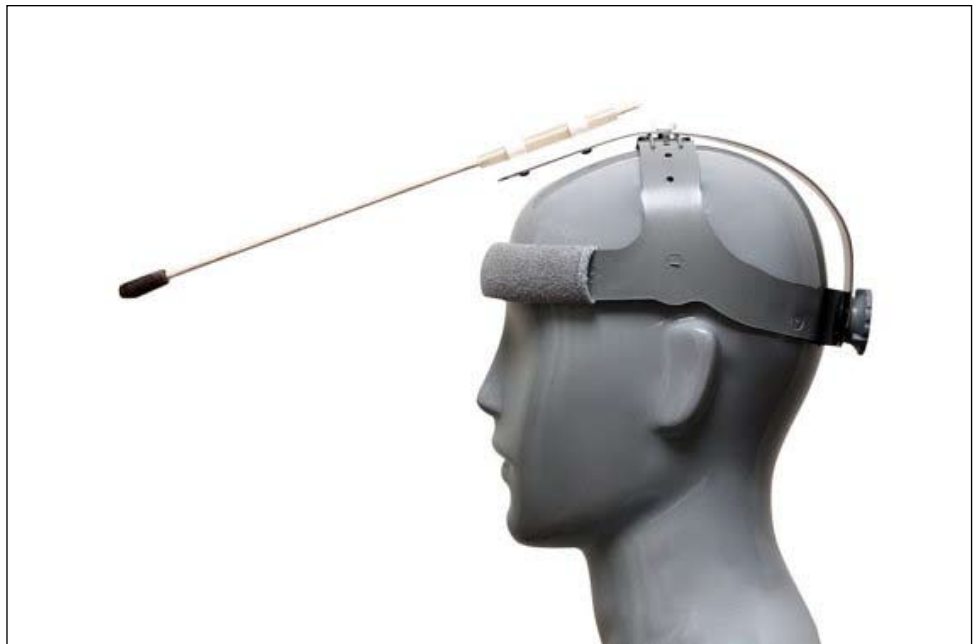
Ready to use in a minute - adjust the headband, mount the pointer and go!

Swiss Stylus: The Swiss Stylus for tablet and smartphone addresses many (special) kinds of gripping needs. It is a strong brass strip covered with transparent tubing and creates a natural extension of your finger or hand. You can hold and control it in many ways.

Finger Stylus: This is a highly conductive cone-shaped stylus that fits over your finger. No pressure or drag required.

Balltop Stylus: This ball-shaped stylus for tablet and smartphone has a solid birch wooden ball grip and strong aluminum

pointer covered with a highly conductive fabric tip. No drag or pressure required. It works for people who have difficulties holding an object, like a pen, but who are able to firmly grasp something with their hand. The grip diameter is 45mm, the stick length (including the tip) is 95mm and the tip diameter is 9mm.

Snorkel Mouthpiece: The snorkel mouthpiece comes with a professional IST Sports diver mouthpiece (MP1), a custom connector plug and a set of silicone caps for a snap fit connection with the mouth stick. The connector plug includes air holes for breathing and a built-in saliva trap to prevent saliva flow. The inner diameter of the

connector plug part of the mouthpiece is 8.5mm (0.33") and combined with the caps, it fits tight on a 6mm (0.24") stick. You can use this mouthpiece to create your own mouth stick or use it as a spare or replacement part of the Mouthstick Stylus.

MOUNTING SOLUTIONS FOR IPHONE, IPAD AND IPAD MINI:

RAM Mounts This company (http://www.rammount.com) has all kinds of mounting solutions for your tablets, phones, cameras and other devices that you want to have close by and available. They sell component parts and options that make a variety of configurations, depending on your needs. They have a full complement of holders for the most popular iPhone and iPad models, along with a large assortment of docking and locking mounts, all keeping your devices safe, secure and where ever you are.

For example, for a wheelchair, The EZ-ON/OFF™ flexible seat clamp mount consists of a universal clamp base, 18" flex rod, single-socket mounting system and custom cradle for the Apple iPad and iPad 2. The clamp base is modular in design; it can easily be attached to tubes and rectangular surfaces, ranging from 0.625" to a maximum of 1.25". The 18" flex rod is more rigid than flexible but can be bent into optimum position for perfect viewing of your iPad.

Another mounting solution is the RAM Tough-Clamp. This versatile mounting product from RAM includes a 1" ball that can be used to mount a variety of products, like camera, phone or tablet to almost any flat surface and square rails. The RAM Tough-Clamp can be mounted to any surface on a desk, wheelchair, headrest or many other locations. Simple to install, while allowing for convenient removal of your Apple product, the mounting possibilities become endless for your iPad or iPhone.

Another mount for the wheelchair, the RAM-B-149Z-AP8U consists of a u-bolt base, double socket arm and custom cradle for the Apple iPad and iPad 2. Designed into the mount is a 1" diameter rubber ball and socket system with adjustment points at the base and cradle. With a twist of the arm knob, you can move the iPad rail mount to your optimum viewing position. Included in this package is hardware that will accommodate rails from 0.50" to 1.25" in diameter.

One of my favorite mounts as a therapist using an iPad with children and adults is the Table Top Suction Mount. This RAM mount system provides a strong, stable and moveable mount for the iPad on any flat surface, such as desk, laptray or table. There is a twist lock suction cup at the bottom that attaches the mount securely to any flat surface (glass, tabletop, desk, etc.) and it can easily be removed and reinstalled to another area, as needed. This makes it an excellent choice if you are using the iPad in different locations with different users throughout the day and need to have it securely placed each time. It suctions and releases in seconds. The rubber ball and socket system allows you to adjust for different positions and viewing angle. The iPad can be placed in either portrait or landscape orientation and provides access to all controls and jacks. The holder is available in a wide range of sizes and types (Android, iPad Air, iPad Mini, etc.) and can easily be changed. If you prefer to attach this mount permanently, change the base to the one with pre-drilled holes that can be screwed into the tabletop's flat surface. You can also get a dial combination lock that provides safety against theft.

One of the nice features on the website is the Tablet Mount Wizard. You just select a device, select locking or non-locking, the type of cradle and mount type just by picking from the pictures and drop down menu. When you are done, your order is complete. You can also call/email about custom orders to be sure you get exactly what you need.

SCANNING SOLUTIONS FOR NOTETAKING

Scanmarker (http://www.scanmarker.com) is a pen scanner that can scan any printed text in seconds. First, connect Scanmarker to the USB port of your computer, then scan and see your scan on the screen in the program of your choice. The patented technology is both fast and accurate, recognizing up to 3000 characters per minute. Scanmarker's transparent tip lets you see what is being scanned as you are scanning it. Once the scan is imported into the computer program, it can be edited, if desired, and it will read the text aloud. Students can use it to scan key sentences in their books and then create

Swiss Stylus - versatile gripper
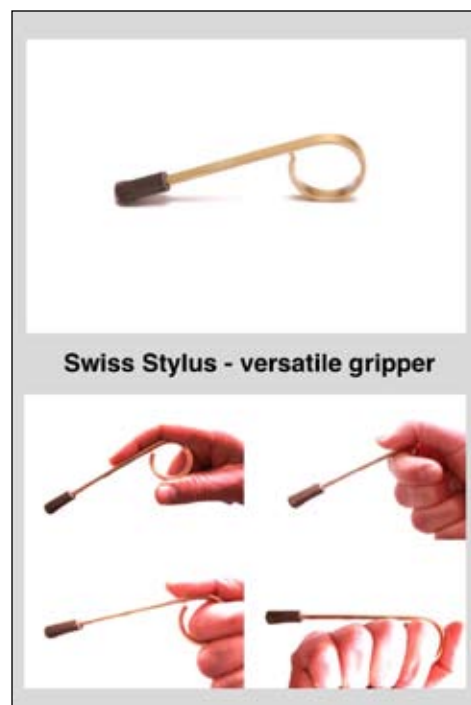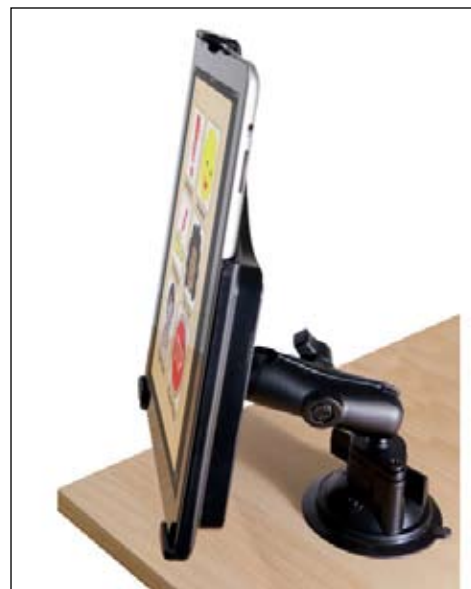
Swiss Stylus: www.shapedad.etsy.com

Table Top Suction mount: www.rammount.com

an outline of most important points. It's a great way to take notes and create summaries. Scanmarker can also translate between more than 50 different languages. It is lightweight, portable and durable, with an ergonomic design that lets you use it at any angle, just as you would use a regular highlighter.

NEW AND NOTEWORTHY SOFTWARE

Language for Theory of Mind 1: Understanding Others' Perceptions, Wants and Needs (http://www.laureatelearning.com) This is the newest and latest Sterling Edition software program from Laureate Learning (for Windows and Macintosh). This publisher of special needs software has pioneered the development of research-based software for language and literacy, and this new program is designed with the expertise that Laureate is known for. It is designed to help students recognize that other people have sensations, desires, thoughts, beliefs, etc. and that these perceptions and desires influence their behavior. It helps children understand what others can or cannot perceive, introduces verbs of intention/desire (i.e. want and need) and is suggested for students with aAutism spectrum disorder, language impairments, intellectual disabilities and hearing impairments. The program activities help users understand how we get information through the five senses and what others can or cannot see, feel, hear, taste and smell. Language for Theory of Mind 1 features optimized intervention technology that individualizes instructional delivery to the student, beginning with an introduction to the five sense verbs, conducting an assessment and tracking the student's performance and adjusting instructional delivery. In Module 1, students learn to discriminate between sense perceptions and actions, thereby learning the difference between external observable events and internal ones. In Module 2, they learn the five sense verbs and that different senses are associated with different perceptions. In Module 3, they learn to distinguish between those who are and those who are not experiencing particular perceptions, and in Module 4, which character perceives a particular object or event. In Module 5, they choose who does or does not want or need to do something. And In Module 6, who does or does not want or need someone else in order to do something. They also answer Yes/No Questions related to such events. This Module builds on the previous one by adding semantic and syntactic complexity. In addition to the excellent language learning technology, the Sterling Administration System allows you to review progress, create performance profiles and to write reports. Many additional

Scanmarker: www.scanmarker.com

Who needs Mr. Lopez to get the paddle?

Feedback for Correct Responses:

(Level 1+2) "Good! Grandma needs Mr. Lopez to get the paddle because she can't reach it!"

(Level 3) "Good! Grandma needs Mr. Lopez to get the paddle! She wants to go to shore and she needs the paddle to get there!"

Language for Theory of Mind: www.laureatelearning.com

options are available that help customize the program: Access (keyboard, mouse, touch screen, single and dual switch), Session Preferences (feedback/reinforcement, speech & text, duration of session, criterion to end session, yes/no response training, special introduction options,), as well as training by module/level options.

What's Cool About Music Software (Attainment: http://www.attainmentcompany.com) This great new program from Attainment includes a collection of six interactive books about all aspects of music. It's a very powerful way to build literacy skills and engage your students of any age. This book collection includes Attainment's excellent use of narration, highlighting and a large group of settings that individualize the presentation and also in-

cludes the exploration of melody, rhythm, musical styles, instruments and the history of music. It's appropriate for both emerging readers fascinated by music, as well as more advanced readers, an engaging book for all ages. The talking-book format includes real music built right into the text. Each page contains full-size photo illustrations, professional narration with highlighting and music to reinforce concepts read about. Icons appear next to certain words or phrases, with each icon having a corresponding music or sound snippet that plays along with the narration and replays when touched. This way, music terms and information are explained with words, illustrated with icons and demonstrated with sound. There are six books with between five and seven stories in each. They cover a wide range of topics, including the definition of terms, instruments from ancient past to the electronic age, descriptions from world music (i.e. yodeling, Irish jig) and the history of jazz and blues. The book titles include The Big Picture of Music, Music Styles, Music Over Time, Musica Instruments, A Rock Concert and World Music. This program works on both Mac and Windows and is excellent to use on the SmartBoard. It is also available as an iPad app and as an eBook.

Benchmark Universe (Benchmark Education:http://www.benchmarkuniverse.com) This is an amazing collection of interactive resources available by web-based subscription. Included are over 2,500 ready-to-use eBooks from Benchmark Education, for pre-K to 8, in English and Spanish. They are compatible with all devices and can be used at school and by the students at home, on whiteboards, computers, iPads and other tablets. Each book is narrated and reading can be customized so that it can be read aloud with highlighting. All books are available through "My Library" and books can be searched by reading level, Lexile Range, Content Area, ELA, Theme, Fiction, Comprehension Strategy, Developmental Category or by keyword. Individual bookshelves can be created for different classes and different students. The interactive tools are included as part of the program and allow you to write margin notes, add sticky notes, circle or underline, allow use of mouse or finger, add hyperlinks and much more. In addition, you can customize the books by creating activities on individual pages (i.e. the shade tool, create cloze activities) or by adding pages with videos,

What's Cool About Music Software: www.attainmentcompany.com

Benchmark Universe: www.benchmarkuniverse.com

activities you create, additional graphics and much more. You can log on to Benchmark's website for further information and watch a demo. Individual videos are also available providing how-to tutorials. At the present time, Benchmark Universe is offering a one-year free Web subscription for each school that purchases $500 worth of print materials.

Read to Learn Software Bundle (Attainment: http://www.attainmentcompany. com) The Read to Learn Software Bundle is

a group of eight talking books collections, with a combination of 184 talking stories in all, with professional narration, great graphics and high interest content. All stories are read loud with text highlighted word by word, line by line or by complete sentences. Students can also click on any individual word to hear it spoken. There is a test at the end of each story with a hint feature that directs students to the page that addresses each question. There are data collection and report writing capabilities. All can be used with alternate input,

including scanning and single switch.

The eight software programs are available in this software bundle or individually. There is also a Student Reader Book that is sold individually or in kits that include books, a PDF file on CD and software. Classroom Kits include eight Student Reader books, one Teacher's Guide and the PDF CD and the multimedia software. The software works great on SmartBoards, as well as computers - excellent for group discussions, classroom reading lessons and for preparation (or follow-up) of individual work on reading/language. All Read to Learn Software titles are also available on the iPad in the Read to Learn iPad app and in individual apps for each collection. You can visit the App Store and download the free Attainment Read to Learn app, which includes one story from each of the collections.

The eight software programs include:

Life Skill Readers Software (40 stories in six content areas: Community, Personal, School, Signs, Transportation and Work. Stories describe places (grocery stores, restaurants), things (community signs) and activities (going on a date). Each story has three, five or seven pages with study questions. The easy-to-read text has colorful photos and is ideal for older students who are reading at a second grade level or below. Good also for non-readers, since all text is read aloud.

Connections in the Workplace is a contemporary language arts curriculum for transition-age students. It includes 35 stories featuring the same main characters throughout the series. Each four-page story has a student activity page and vocabulary exercises. Topics covered include: cell phone etiquette, avoiding job responsibilities, becoming a good employee, appropriate social behavior, helping others at work, making friends on the job, working and saving, and many other situations and decisions that occur with new and potential jobs situations. The software is also available as a Student Reader, and a Teacher's Guide is also included.

Do the Right Thing includes 25 stories featuring four main characters dealing with community-based social situations. Each six-page illustrated story begins with a vocabulary glossary and ends with comprehension questions. Topics include: stranger danger, hospital visit, dealing

Read to Learn Software Bundle directory screen
Image 2 of 3 < Prev Next >

Close or Esc Key

Read to Learn Software: www.attainmentcompany.com

with an accident, preparing for a social event, sharing with a friend, responding to potential danger, making a purchase, dealing with emergency at home, calling 911, recreation, socialization and more.

Dynamite Emotions features six stories with young adult characters who experience social or emotional challenges with family, friends or coworkers. The stories explore the feelings of each character and provide a resolution to their disputes and conflicts. One of the chapters is a dictionary of emotions. Each emotion is pictured, named, defined and a spoken sentence is given. For example, Bored: Having nothing to do. Kyleen finished her math homework and was bored for the last 15 minutes of class.

Focus on Feelings is a collection of 19 photo-illustrated stories that help adolescents and adults of all ages recognize and understand the way people might feel in a variety of situations. Main characters in the stories are all ages and ethnicities and experience feelings such as being thrilled, conflicted, startled, relieved, sad, disappointed, proud, disgusted, eager, embarrassed and many more, all in the context of the story.

Safety Skills Readers includes 26 illustrated stories covering essential everyday safety skills in four areas. These include Community, Home, Recreational and Personal Safety.

Self-Determination Readers includes 16 stories written at a third grade reading level and illustrated in a graphic novel style. The stories tackle self-determination issues that are typical for students in the transition stage. In addition to work on reading comprehension and vocabulary, these stories also lend themselves to group discussions about the story topic, including topics related to taking control, choosing wisely, handling problems and aiming high. Some of the stories involve community trips, appropriate behavior, making good decisions, spending money wisely and following directions, time management, seeking help, goal setting, self-advocacy and leadership.

Social Story Readers also have 16 short stories that focus on social issues. Excellent for teaching reading comprehension and language skills in the context of common social issues.

Attainment's Social Success (Attainment: http://www.attainmentcompany.com) This software program is an interactive social skills tutorial for adolescents and adults with developmental disabilities, including autism. Each of the 50 social skills has five activities: Intro, Self-Talk, Steps, Movie and Problem Solving. The Intro icon opens a page or two of informational text regarding the skill. The text will read automatically (unless turned off). The Steps icon will show a video that outlines important steps in the skill. You can pause, continue

or replay. The Self-Talk icon will read aloud text that reviews the important social skills needed to be successful with this skill. The Movie icon will show a video that explores the skill and the Problem Solving icon will show questions that focus on appropriate social skills related to the skill. There are two questions for each skill. Skills and Social Skills covered include On The Way to School, Transitions, Classroom, Outside the Classroom, Peer Relationships, Team Sports, as well as many others related to Important Skills, Public Places, Tech Devices and Vocational Skills. Social Success is accessible with a mouse, touch screen, interactive whiteboards, and switches with scanning and is also available as an iPad app.

Daily Reading Comprehension Software Summer (Attainment: http://www.attainmentcompany.com) This program presents high interest, low-readability, non-fiction stories that are read aloud and followed by reading comprehension tests and crossword puzzles. Each story tells of a particular event (some well-known and others less known) that happened on that date. Reading levels are at third to fourth grade level. Reading comprehension tests focus on reading for details, locating information, finding facts and improving vocabulary. Previously available for Semester 1 (September 1- January 14th) and Semester 2 (January 15- May 30th), it will soon be available also for the Summer (June 1st through August 31st). This is a highly motivating program that provides excellent opportunities for reinforcing reading skills for individuals and groups - try it on your whiteboard for exciting interactive classroom lessons.

OnScreen for Windows (RJ Cooper: http://www.RJCooper.com) Although RJ Cooper's OnScreen is not entirely new, it has been upgraded and the new version that works with both Windows 7 and 8 has some new features. OnScreen now has talking scanning capabilities that can be used to enter text into any application. It can be used with a wide range of input devices, including joysticks, trackballs and with a switch and switch interface, alone or with Cross Scanner, also from RJ Cooper. OnScreen has a wide range of choices of on-screen keyboards, including 12 different sizes and many different languages. Included also are QWERTY and Alphabetic layouts. On-

Attainment's Social Success: www.attainmentcompany.com

OnScreen: www.RJCooper.com

Screen also has a nice feature that lets you 'hide' keys, which is good for training early learners. You can also change the text and background colors of the keys, as well as the scanning color (excellent for users with visual impairments). Each letter name can be spoken, when it is under the mouse and when it is scanned. (If you want the words and sentences spoken when they are entered into the word processor or have full sentences spoken aloud, you will need to also use a program like WordQ or Write Outloud along with OnScreen.) OnScreen also includes WordComplete, which gives you choices of words previously typed in the order of frequency of use. (It is different from word prediction, which tries to predict the word you are typing. For Word Prediction, use together with WordQ). WordComplete words can also be spoken aloud, either individually as selected or by auto-speaking the list. Another classic program from RJCooper is Biggy, which gives the user large cursors for all programs. It has also been updated with new graphics and sounds. There are colorful, animated cursors, as well as enlarged cursors for the I-beam and the Wait cursors. In addition, Biggy has QuickPoint (cursor jumps to the default button in dialog boxes) and sounds for all mousing activities. Try On-Screen, Cross-Scanner and Biggy free for 14 days by downloading them directly from RJ's website.

New and Noteworthy Apps for the iPad

All reviewed apps are available for the iPad. Check on iTunes, developer's website and YouTube for more details, pictures and videos

Virtual Speech Center (http://www.virtualspeechcenter.com)

Real Vocabulary Pro	*	Excellent comprehensive app for K-5, targeting Antonyms, synonyms, definitions, multiple meanings and Idioms. Three different levels (K-1, 2-3, 4-5), Receptive task: i.e. what is another word for accurate? A-Happy, B-Late, C-True, D-Correct. In expressive task, student states his answer: i.e., what is another word for Almost? Three different reward games. Multiple students can play, targets can be saved, auto-scoring, enable or disable written picture descriptions, track correct and incorrect responses, reports, email results. Aligned to Common Core Standards, K-5.
Social Norms		This app is designed to help children learn social rules and behaviors through stories. There are 50 stories in following categories: manners, hygiene and health, safety, school, behavior, community and home. Users can create their own stories, with photos, text and audio recordings.
Auditory Memory Ride		For ages 6-13, this app is designed for students with central auditory processing disorder (CAPD). There are over 1000 stimuli with pre-recorded audio and the ability to add background noise. There are recognition and recall tasks, with the ability to delay the presentation of the stimuli, with four modes of delay (no delay, 5, 10 or 15 second delay). Students will practice auditory memory by recognizing and recalling digits & numbers, words & sentences, details, and six levels of paragraphs. Six levels include yes/no questions, multiple choice questions, open-ended questions related to 3-4 or 5-7 sentence paragraphs. Another excellent and comprehensive app from Virtual Speech Center.
Auditory Workout and Magical Concepts	A	These two apps are no available for Android as well as for iPad

Synapse Apps. LLC (http://www.PocketSLP.com)

Processing Pow-Wow		"Designed to improve ability to process auditory information & match it with an image. Five activities: word, phrase, sentence, function and barrier game with built-in wait time to give user time to process auditory information. 50 different stimuli per activity. Optional prompt cue (either verbal or sound cue) to alert user. Background noise is also optional at varying volumes. Reports can be generated, printed and/or emailed. On Word Phrase & Sentence Level, stimuli is presented auditorily and user must touch the corresponding picture (given 2-4 choices). In Function Level, student is asked ""What do you do with this?"" and must then touch the corresponding function of the item. In Barrier game, follow directions to place items with three scenes. Well done app for ages 5 and up."

Language Learning Apps (http://www.languagelearningapps.com)

Sound Swaps		Designed for students with dyslexia, SoundSwaps helps improve decoding and encoding skills. Students will practice seeing and hearing words, and understanding where and when sounds are deleted, added or moved to make new words, as well as whether two sounds are the same or different and how their order is important in forming spoken and written words. Great encoding practice for all ages. Level 1 uses word families and changes only the initial sound. In Level 2, the initial or final sounds can be added, changed or deleted. In Level 3, the vowel sound changes. In Level 4, anything can happen - you may need to add, delete or change anywhere in the word. Excellent program and very motivating for students. Each Level has two activities.

LifeTool Solutions (http://www.lifetool.at)

TouchMe UnColor Pro	*	Simple cause and effect touch program. Moving (touching, swiping) over the screen will uncover the hidden pictures. You can now add your own pictures, videos and audio. Good for introduction to touch screen and for eye-hand coordination.

Attainment (http://www.attainmentcompany.com)

Attainment's Read to Learn	*	See above full reviews of all four of these excellent computer software programs that are also available as apps, with free versions.
Attainment's Computers at Work	*	Prepare older users for data entry and office jobs
Attainment's What's Cool About Music	*	Outstanding introduction to music in talking-book formate with real music built right into the text. Unique literacy program.
Attainment's Social Success	*	Steps to help develop Social Success at school, with friends, important skills, using technology and at work
	*	See other Attainment apps and many other free versions to try.

Smarty Ears (http://www.smartyearsapps.com)

Language Trainer	Four activites - Picture Identification (300 images for auditory identification of commonly used items), Picture Naming, Divergent Naming (name items that fall within a specific category or function), Sentence Completion (complete the sentence provided). Built-in audio recorder, for single player use, data collection.

Benchmark Education (http://www.benchmarkuniverse.com)	See above review about Benchmark Universe, which can be used on all tablets, as well as computers and whiteboards.

JOAN TANENHAUS, M.A., CCC, Speech-Language Pathologist/Assistive Technology Specialist, is Founder and Executive Director of Technology for Language and Learning, Inc., a non-profit organization dedicated to advancing the use of computers and technology with children and adults with Special Needs. (email: ForTLL@aol.com) ■

Enhancing Augmented Communication

From Where You Are With What You Have

At Palm Valley Elementary School in Litchfield, Arizona, Sarah Williams can be found teaching in a classroom with children who have significant communication challenges. Like most teachers in most classrooms, she is faced with meeting the needs of each and every student when those needs vary greatly and each present their own unique set of strengths and challenges. And it will come as no surprise that she needs to engineer academic involvement for each child to ensure that all students have access to the Common Core Standards and Curriculum.

Sarah's background in Music Therapy provided a strong foundation for her when she began teaching, allowing her the ability to jump in and use strategies that she found successful as a therapist. She also had the benefit of a strong district support team that assisted her with classroom organization and set-up. However, it seemed that the introduction of

functional communication skills to begin to elicit and improve interactive communication skills was missing, even though augmentative and alternative communication (AAC) systems and supports were present. So, she contacted her district assistive technology specialist, Jerolyn Allen, OTR, for guidance. Jerolyn then invited Tami Taylor, SLP, who was working for the Prentke Romich Company (PRC) at the time as a regional consultant, to join the discussion about improving access and use of the AAC systems in the classroom. Tami has recently joined the Litchfield Elementary School District as an SLP.

Together, the team found it easy to identify and document reasons that the systems were failing. They then formulated a list of opportunities in the classroom that were already eliciting successful communications and the opportunities frequently missed during the school day. The next step was to explore those missed oppor-

tunities and come up with ways to change the outcomes. It just seemed a bit unclear how new things could be implemented with so many challenges already presenting themselves in the classroom every day. How does a teacher take responsibility for "one more thing!"? The team was not yet quite sure where or how to get started or how to motivate students and staff.

Timing seemed perfect for the Litchfield Elementary School district to host a Language Acquisition through Motor Planning (LAMP) training from The Center for AAC & Autism (http://www.aacandautism. com/), highlighting some of the students from Sarah's classroom. John Halloran, SLP, Senior Clinical Executive at The Center for AAC & Autism, demonstrated the ability to work with one of Sarah's students for over 30 minutes of joint attention and interactive communication using the LAMP Words for Life vocabulary; it was the first

TAMARA (TAMI) TAYLOR earned her Bachelor of Science degree in Speech Language Pathology and Audiology from Northern Arizona University in 1995 and completed her Master's degree in Speech Language Pathology at the State University of New York at Buffalo in 1997. Tami has worked with varied caseloads in the area of speech language pathology with all ages in the state of Arizona, covering therapy services in the public schools, inpatient and outpatient hospital therapy services, as well as private clients through her privately owned therapy company. Throughout her career, she has had a specialized emphasis working with children and young adults in the areas of assistive technology, augmentative/alternative communication, and language disorders associated with Autism. She currently works for the Litchfield Elementary School District. Tami holds the Certificate of Clinical Competency (CCC) from the American Speech Language Hearing Association (ASHA), has a regular Arizona license as a Speech Language Pathologist, and an Arizona Department of Education certification in speech language therapy. She has served on the Executive Board and committees of the Arizona Speech-Language-Hearing Association, including the role of President. She has served as the ASHA State Education Advocacy Leader (SEAL) for the state of Arizona. In 2002, Tami received the ArSHA Presidential Award of Excellence.

JEROLYN ALLEN MED, OTR/L ATACP received her Bachelors from UW- Madison in OT 1991. She acquired her Masters in Education at NAU -2000. She received advanced training in Neurodevelopmental Treatment (NDT) in Seattle 1998 and a certificate in Assistive Technology/Augmentative Communication Practioner 2004 through CSUN Northridge. Experience: She has been an OT for 22 years in both the Hospital, clinical and School based setting, treating both students and adults. She was adjunct Faculty for 5 years at Midwestern University Glendale, AZ. She currently works as the Assistive Technology Coordinator in the Litchfield Elementary school district.

SARAH WILLIAMS, M.Ed., is currently a Special Education Teacher in the Litchfield Elementary School District. She has been teaching in a self-contained classroom setting for the past 5 years providing services to Kinder-4th grade students with multiple disabilities. Prior to becoming a teacher, Sarah was a Music Therapist for 6 years, providing Music Therapy to children aged 3-21 with special needs throughout the Phoenix area. Sarah earned her undergraduate degree in Music Therapy from the University of Minnesota. She earned her Master's degree in Special Education from Arizona State University and is currently working courses through the University of Arizona to become a Certified Teacher of the Visually Impaired.

time that they had met. This was amazing and unexpected, as this student was one that had a typical attention to task of approximately 10 minutes (at best).

With guidance from John and Tami, Sarah began to see how valuable the use of core vocabulary can be, not only for communication, but also for academics. Tami then assisted Sarah with recognizing the importance of accepting communication from a student at the level of their expressive language skills versus forcing them to expand beyond what they are ready for, turning them off from using their AAC system. The concept of acceptance, once adopted by all staff in the room, became key to increasing student comfort with using their designated systems.

As Sarah began to think more about the use of core vocabulary and acceptance of utterance length, she soon realized that many goals in the Common Core Standards are tied to language and communication. The goals that she needed to address for academics had these concepts embedded in them. So, by increasing the interactive communication skills of her students, she was, by default, increasing their ability to access the curriculum and be successful with goals.

Even with these new epiphanies, it still begged the question, "HOW were we going to realistically get this going?" How can the teacher and the assistants get used to practicing and encouraging interactive communication for EVERYONE? Jerolyn quickly assisted the team with a place to start, emphasizing that team would need:

- Lesson plan sheets
- Vocabulary lists
- Data collection for plan-

AAC Classroom Language Screener				
Level	How does the communication look?	Types of words used?	The Student demonstrates this:	When to Move Up to the next stage?
Stage 1	☐ Single words, ☐ set phrases or ☐ chunks of memorized oral language	Mostly core words and familiar vocabulary, high frequency words LIST:	☐ Spontaneous and interactive and ready to move to next stage ☐ Answering direct questions ☐ Scripted/Memorized ☐ Making choices	When student is becoming independent in communication and initiation, begin modeling phrases made with the core words they know….as quickly as possible
Stage 2	☐ Phrases, short sentences	☐ Core words, ☐ familiar vocabulary related to content area LIST:	☐ Spontaneous and interactive and ready to move to next stage ☐ Answering direct questions ☐ Scripted/Memorized ☐ Making choices	Student will become independent in communication and initiation with known phrases, begin modeling expanded phrases and simple sentence
Stage 3	☐ Simple and expanded oral sentences; ☐ responses show emerging complexity used to add detail	☐ General and some specific language related to the content area; ☐ may grope for needed vocabulary LIST:	☐ Spontaneous and interactive and ready to move to next stage ☐ Answering direct questions ☐ Scripted/Memorized ☐ Making choices	Generally comprehensible using phrases; comprehensibility may from time to time be impeded by errors when attempting to produce more complex phrases
Stage 4	☐ A variety of oral sentence lengths of varying linguistic complexity; ☐ responses show emerging cohesion used to provide detail and clarity	☐ Specific and some technical language related to the content area; ☐ groping for needed vocabulary may be evident	☐ Spontaneous and interactive and ready to move to next stage ☐ Answering direct questions ☐ Scripted/Memorized ☐ Making choices	Generally comprehensible at all times, errors don't impede the overall meaning; such errors may reflect poor grammar.
Stage 5	☐ A variety of sentence lengths of varying complexity in extended oral discourse; ☐ responses show cohesion and organization used to support main ideas	☐ Technical language related to the content area; ☐ facility with needed vocabulary is evident	☐ Spontaneous and interactive and ready to move to next stage ☐ Answering direct questions ☐ Scripted/Memorized ☐ Making choices	Approaching comparability to that of peers in terms of comprehensibility and contextual phrase- errors don't impede communication and may be typical of peers.

Adapted from ACCESS for ELLs® Training Toolkit and Test Administration Manuals, Series 103 (2007-2008)

*Goal: Change students from "choosers" and "answerers" to INTERACTIVE communicators

NAME:_____

DEVICE/Communication System_____

Comments:

_____

AAC Classroom Language Screener

ning "what's next?"
- In-the-moment data
- Larger chunks (LAM, etc.) of data for longer-term planning
- KISS - Keep it simple Sweetie!
- ONE PAGE RULE!!
- 10-second grab information

The team looked to the PRC Language Lab (https://aaclanguagelab.com/) for its classification of the Brown's stages of language. The PRC Language Lab uses the Brown's five stages of language to assist with identification of where each student is functioning in their language use, provided in a way that is easy to access, clear when reading and intuitive to teachers, parents and therapists. Jerolyn was able to use

information from the charts in the Language Lab to create a screening form. This form allows users to quickly assess the stage of language that the student is in and how to determine when they are ready to move forward to the new stage. The form is one page in length and was created in simple, easy-to-interpret terms so that inter-rater reliability can

be as high as possible. No formal research was completed to determine its effectiveness, but anecdotal trials proved to be almost identical ratings for teachers, classroom assistants, therapists and parents. Now that the team had a clearer picture of what stage of language each student was functioning at, they had to prepare to find a way to incorporate new activities and interactive language opportunities using the devices that were available to them. Sarah had at least nine different AAC systems in her classroom, with some students who needed AAC, but were still in the exploratory stage. To accomplish organizing students, their stages, their AAC system and the activity, a planning sheet was made that also reflected the Brown's stages of language to have a consistent flow and ease of comprehension of each student's abilities and needs. Sarah was also able to create a data sheet that was only one page (Jerolyn's famous one-page rule!) that provided a way for recording needed data for each activity.

Now we felt organized, we had a better understanding, but we still had no activities and we had not yet made any real changes in the classroom.

Looking at the overall picture and recognizing that comfort levels varied with different staff members in the classroom, it was clear that, in the beginning stages, direct activities would need to be available that had clear and concise directions. Jerolyn suggested the use of Language Interactive Props (LIPs) boxes as a structured, somewhat scripted, language activity. The LIPs boxes were fun and easy tasks that were motivating to students. Some examples of the activities used in the beginning stages are: Mr. Po-

Language Acquisition Data Sheet

Date:

Stage 1	Activity:			
Vocabulary:				Notes:

Stage 2	Activity:			
Vocabulary:				Notes:

Stage 3	Activity:			
Vocabulary:				Notes:

Stage 4	Activity:			
Vocabulary:				Notes:

Stage 5	Activity:			
Vocabulary:				Notes:

Response Key: + = independent
VP = verbal/visual prompt
M = model
 - = no response/incorrect answer

Data sheet organized by Brown's Stages of Language

tato Head, farm animals, play dough, shaving cream and letters, dress up bear, cars and Little People house with Little People.

Each LIPs box contained a list of words or phrases that could be used with the activity and the lists were organized by stage of language. Therefore, if a classroom assistant knew that a student was on Stage One (verified by looking at the planing sheet), they were able to quickly pick the box up off the shelf and implement the activity without looking to the teacher for assistance or directions. The LIPs boxes became a gateway for independence for the classroom assistants, allowing them to feel more a part of the team and provided them with more ownership of the outcome. The organized language models and guidance for the students, paired with acceptance of expressive utterances at their ability level, allowed the students to feel more comfortable and successful, increasing their interactive language during the activities.

Somewhere along the path of using the LIPs boxes, some-

thing spectacular started to occur. The students were generalizing the use of the vocabulary used in the structured activities into other activities, including spontaneous interactions with others! The classroom assistants were so moved by the progress that their involvement grew as well, and interactive communication started blossoming all over the classroom. So much so, that the LIPs boxes are rarely used at this time. What felt impossible at the beginning of this project began to not only be possible, but happening.

By the end of last school year, Sarah had many stories to tell about the communication and language that blossomed in her classroom. One of her favorite stories to tell includes two students interacting during lunchtime. One student used an AAC device to request something different to eat by stating, "That's yucky." The student sitting across the table began to echo the comment and giggle. The more one student giggled, the more the other would comment. This was truly the first time the student using the AAC device ever communicated with a peer! Another story involves a student that only engaged with familiar adults by grabbing their hand, running from the classroom or throwing toys and food. This student was slowly introduced to their iPad and taught how to communicate through modeling the use of the device paired with motivating choices. The classroom staff worked on teaching this particular student with more scripted models to request specific food, movie clips and rides in a wagon. Since each instance of successful communication elicited a motivating reaction from an adult, this student then began to initiate interac-

Language Objective/Activity:
_____
_____
_____

Standard
(s)_____

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Students:	*Students:*	*Students:*	*Students:*	*Students:*
Target Vocabulary Stage 1	*Target Vocabulary Stage 2*	*Target Vocabulary Stage 3*	*Target Vocabulary Stage 4*	*Target Vocabulary Stage 5*
Behavior Notes	Behavior Notes	Behavior Notes	Behavior Notes	Behavior Notes

Above: Planning sheet organized by Brown's Stages of Language

tive communication with not only familiar adults, but also with every adult that walked into the classroom. Of even greater joy is watching the now spontaneous communications that occur between students, as generalization is moving to interactions with peers, a phenomenon that was completely absent in the classroom prior to these changes and interventions.

At the end of the day, educators want to know that what has been done in their classroom each day changed the life of the children in it in a positive way, moving them toward academic and social growth and independence. By working as a team and empowering all members of the team, including the student, to be comfortable with communication and have ownership of interactions, Sarah's classroom has moved from a room full of children waiting to be engaged to a room full of communicators! Stay tuned because we are not finished yet – this school year promises even more growth. ∎

"A Comprehensive, UDL-based AT Implementation for Your School"

Revisited: The Journey Continues

INTRODUCTION

The basis of this paper is a talk given at the 2013 Closing The Gap Conference entitled "A Comprehensive, Universal Design for Learning (UDL)-based AT Implementation for Your School." In this article, I will familiarize the reader (or re-familiarize those who attended last year) with the major points presented in my talk last year. These points included a description of the Prentice School's mission, what I found there in 2009 when I started as the Assistive Technology Specialist, the state of UDL progress in October 2013 and, most importantly, how the school got there. Beyond that, I will summarize the developments and changes in the educational and assistive technology arenas since October 2013 that continue to make establishing a Universal Design for Learning-based Assistive Technology implementation at my school an always challenging, fascinating and personally rewarding endeavor.

THE PRENTICE SCHOOL

In 1985, the Prentice School was founded in Orange County California to serve students with dyslexia using the Slingerland multi-sensory teaching methodologies as its foundation. Since its founding, the school has broadened to serve all K-8 students with reading and print disabilities.

When I was hired in June 2009 as the Educational Assistive Technology Specialist, the student enrollment was close to two hundred students. My goal then, as now, was provide our graduating 8th grade students greater academic independence through their use of AT.

Prior to starting at Prentice, my service delivery model as an AT practitioner with a local AT center left something to be desired professionally. Typically my services were provided through an IEP with the duration and type of services determined by the limited number of hours allocated by a school district. Furthermore, it was readily evident that special education and AT

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Prior to Prentice, Stan was a senior technology specialist at the Assistive Technology Exchange Center (ATEC), part of Goodwill Industries of Orange County. While there Stan became proficient in assessing the educational, functional, and employment accommodation needs of individuals with learning and physical disabilities. In this role, he worked with various state agencies and school districts in Southern California to identify appropriate supports to help people reach their goals.

services are narrowcast to specific students and families, often with a number of clinicians and specialists working on a case. This many-to-one service model has the unintended social consequence of "ghettoizing" the recipients from other special education needs students, to say nothing of highlighting differences with general education students. In our field, there has been much discussion about the negative consequences of social appearance differences with the use of AT by specific individuals, but perhaps too little discussion on how self-limiting it is for AT-savvy teachers and specialists to be pigeon-holed as only "special- education people." Parents and families, if in the picture at all, were often only peripherally involved. In the spring of 2009, when the Prentice School offered me the opportunity to design an AT program of my design from scratch, the opportunity to invert the many-to-one model and create a one-to-many structure was a professional chance of a lifetime. I would finally get to work regularly with students, parents and teachers throughout an academic year and even over a number of years!

THE VISION

A true UDL-based use of AT tools implies that the use of word prediction software, for instance, is equally accessible and familiar to all students when the self-recognized need presents itself. All students, not a certain few, receive training on the use of a variety of AT software tools. When a student has access to and basic proficiency with a number of tools, that student will be able employ that instrument when a task or need drives its use. Not all accommodation or support tools are used all the time. However, when a student has a rich toolbox and tool familiarities/competencies to match, it becomes easier to focus on the academic progress and goals, while the tool's use itself becomes more transparent. In addition, all classroom faculty have familiarity with AT software and model and expect its use educationally and individually when appropriate. Furthermore, a great percentage of students' parents recognize that AT use is a life perspective rather than knowing only the features of a particular program. Such parents recognize that with screen reading software, not only can their child access Web pages and digitally scanned text materials for both school and pleasure, but also can be used to help their son or daughter edit compositions independently by dint of auditory feedback.

2009: EXISTING STATE OF INFORMATION TECHNOLOGY, EDUCATIONAL TECHNOLOGY AND AT INFRASTRUCTURE

Arriving at the Prentice School in June 2009, I was full of enthusiasm with what I hoped to set into motion. I was pleased to hear that some faculty were pleased to hear that there was an "AT Guy" now on campus. My unrealistic hopes of making a quick, dramatic AT impact on the lives of students, parents and teachers were quickly dashed when figuring out how to roll out AT software use in the classrooms. Here is a list of impediments that became evident pretty quickly:

- Entrenched culture, things are done "because it's the way it's always been done"
- Vague awareness of AT tools and capabilities: four PCs with Kurzweil 3000 software, but no one knew how to use the software
- Information Technology (IT) infrastructure inadequate to support comprehensive AT use
  - Windows 2000 and XP on faculty and staff machines
  - Windows Server 2000 installed for on-site servers
- Inadequate IT staffing and knowledge, reactive posture, different people solving the same types of problems in different ways resulting in increasingly self-contradictory network management practices
  - No clearly identified maintenance practices
  - Hosted storage and applications not being managed
  - Inability to get value out of Citrix cloud-based storage and applications

- Obsolete PCs on teacher desktops, in PC Lab: six- to eight-year-old machines
  - Inadequate to run multi-media
- Inadequate Internet bandwidth of 1.5 Mb/sec for entire school; old network equipment
  - Unusable Internet access for more than several users at a time; streaming video impossible all the time when the average household had 10Mb/sec of Internet bandwidth
- Obsolete version of Microsoft Office 2003, incompatible with newer versions: Office2007 and Office 2010
- AT use was a second thought at best
  - No connection of AT use with educational practices
  - No Educational Technology or Information Technology underpinnings for AT
    - No classroom LCD projectors
    - No interactive whiteboards in classrooms
    - Teachers unfamiliar with use of Internet-based resources, many lacking general computer use basics (e.g. use of right click, search, structured file organization)

The last points above touch upon organizational culture. The way an organization sees itself, how it does things, from stated strategic policies to informal, undocumented day-to-day practices and how employees see their roles are ingrained and usually resistant to change. You must never underestimate how difficult and truly formidable it is to initiate culture change. Technology elements themselves, such as equipment and software, can be changed quickly. If you believe in and can eloquently articulate your vision, even the challenge of funding can be overcome. Motivating people to change from exiting habits and patterns of behavior that gains them an acceptable, if not optimal, level of results has been the most significant challenge. Teachers, for a number of rational reasons, often avoid change. The teaching occupation constantly introduces variables that make it compelling to stick with effective practices and techniques once identified and successfully employed. Being time and energy deprived, teachers naturally are suspicious of change and the new.

FALL 2013: EXISTING STATE OF INFORMATION TECHNOLOGY, EDUCATIONAL TECHNOLOGY AND AT INFRASTRUCTURE

Four years later, when I gave my talk that formed the basis of this paper, things had improved dramatically at Prentice. Here are some highlights:

- Windows 7 machines for all faculty, PC Lab and administrative staff computers
- For classroom use: three laptop carts with 50 notebooks running Windows 7
- Internet bandwidth of 50 Mb/sec for entire school over fixed wireless
- Wireless access points in junior and senior high school areas
  - BYOL "Bring Your Own Laptop" for 7th through 12th graders (new high school department added)
- Ceiling mounted LCD projectors in all classrooms (Educational Technology investment)
- Interactive whiteboards in all classrooms (Luida eBeam Edge product, Ed Tech investment)
- Site licenses allow all student and faculty computers to run Don Johnston's SOLO 6 and Snap&Read software: classrooms, labs, at home and their own laptops
  - Combination of Ed Tech hardware and AT software allows teachers to show and model AT use to students
  - Students can then use software themselves on their own or school notebook computers
- IT resources poised to provide Ed Tech and AT needs
  - Hiring a Network Administrator to support AT Specialist
- Proactive mode, cutting costs, streamlining efficiencies and leveraging investments allow technical support of more educational focused needs instead of firefighting network issues
- All 6th grade and above textbooks accessible as .pdf files to students using a browser
  - Snap&Read allows any of these texts to be read aloud quickly
- All 6th grade students take yearlong AT software class
  - Attain competency with use of SOLO 6 and Snap&Read software with actual coursework
  - Institutional curriculum shifts based on discoveries made in conducting AT Tools class
    - Emphasis on keyboarding prior to 6th grade
    - Emphasis on developing/reinforcing phonological awareness prior to 6th grade
- All 7th and 8th grade students can be assumed to know how to use AT software
  - Teachers can expect better spelling, compositional quality
- A dedicated Educational AT Lab
  - PC workstation: used for student, parent and teacher training
- Students wanting AT tool use/support during after school Homework Club
- Dragon Naturally Speaking use
- Adapted test taking: students can use Snap&Read to have test read to them while wearing headphones in the same room as peers
- AT Screening for all 7th and 8th graders: preparation for transition to high school
  - Students, teachers and parents all interviewed
  - 8th grade AT Exit Interview
- Regularly scheduled parent AT Tool workshops
  - Apprise parents of their vital role in their child's use of AT: they learn more than how the AT software works
  - Prepare them for a point of view, attitude about AT; set their expectations for their children, teachers
- Culture, paradigm shift
  - Teachers', parents' and students' expertise and expectations change as more of the above are provided: you must stay alert to these and be willing to change
  - More is provided, more you have to do, to account for

One may surmise that I was busy from when I started at Prentice in June 2009 to October 2013: I'd agree! While I would be the first to note that it was not possible without the support of lots of people and resources, I'd point out that someone has to carry the flag, be the evangelist, recognize who needs to be reached out to and keep the momentum going. So, how do you do this in your organization? The number of problems is overwhelming…

HOW DID WE GET HERE FROM WHERE WE WERE?

I want to acknowledge that I am fortunate, that I operate in circumstances in a private school that do not always correlate to those in public schools. Back in June 2009, while I did have a basic idea of what I wanted to accomplish with an AT program at Prentice and a vision of what things would look like, I didn't know how I would get there. Being new to Prentice, I didn't always know how things got done, where resources came from, who the decision makers were or who would become valued collaborators. I knew though, that if I started fixing things that weren't working right, this would make it easier to identify what I needed to put into place next or even several steps ahead. Replacing obsolete PCs on teachers' desks with faster current machines enables them to run contemporary applications and save them time (an easy sell!). Hey! Now that teachers have capable machines, let's get LCD projectors for classrooms so kids don't have to huddle around the now capable teacher PCs to watch an on-line video clip. What? We don't have enough Internet bandwidth to show streaming video for more than one classroom at a time? That'll be taken care

of next. Okay, now that we have projectors and teacher PCs are current, it's not an outrageous effort now to get AT software on these teacher machines so kids can watch and participate with software being modeling in classrooms on our new interactive whiteboards. While I've glibly oversimplified the technology progression here, the point I wish to make is that with a vision in mind, once you start fixing things, the next steps identify themselves. Over time, as you are able to move a step at a time, you get closer and closer to where you want to be. Working through individual steps can truly be heavy lifting. Lighten the load by talking.

Talking to people about problems is essential, especially if these folks are in a position to help you with resources or are affected in some way through action or inaction on the step you are working on currently. Like most people, teachers will support what you are trying to do if you can show them that the results will help them accomplish their goals. If you can provide effective support and training to them, they can successfully integrate AT tool use in their classroom and the results will be greater academic independence, success for their students, praise from parents, etc. I function as both the AT Guy and the head IT Guy, so I don't have much trouble with this conversation: do talk to the IT people. The IT people are not your enemy, but they do not like surprises. Do not expect them to like your proposal of installing Text Help's Read and Write Gold product on all computers in a junior high school during spring break when they usually use spring break to install operating system updates on computers districtwide. School IT people realize they are in the business of education, but they work under heavy deadlines and limited resources too. Engage and dialogue with the IT people in the early "what-if" stages of projects, get their input about timing and project execution. If you prove to them that you're taking their capabilities and limits in mind, they'll do their best to help you. Do this with all parties that may be affected. Build and create collaboration opportunities. If necessary, put together a project planning or advisory group with representatives of all stakeholders. The plan that emerges must represent as many interests as possible.

Be articulate when you state your vision and have a plan. A good visual image is a big plus. For instance, any successful K-8 AT Implementation relies on three supports: involvement, buy-in and communication of student, teachers and parents. Imagine a three-legged stool: if one of the three supports (student, teachers and parents) is not strong or is removed, the chair falls over. The chair is much stronger if there are horizontal members between the three legs: these are the communication links. Establishing a UDL philosophy does not end in a destination. You are always in the process of strengthening the three legs and the horizontal connectors between the three legs of AT implementation. Having a plan to make this happen and communicating the plan is critical. If you have a clear, readily understood vision that has a solid plan behind it, resources and funding will be easier to secure.

THE THREE-LEGGED AT IMPLEMENTATION CHAIR: Legs represent Students, Parents and Teachers, while horizontal cross members are communications links between them

Leadership is where you come in. Somebody is going to have to talk to and listen to all affected parties. You're going to figure out what your school can do, when it can do it, and then talk to vendors to see what they can do. Compromise will be important. While you have an idea of what things will look like as you get closer to UDL-based AT, some eventual outcomes and details may be different. Don't be surprised by, and do allow for, possibly better specifics to emerge and give credit honestly for those contributions. I was fortunate to have ideas put forth before me that have proved better than my initial apprehensions about them. Leadership is also about identifying those who also get things done and seeking their collaboration. If you assemble a capable team, your load is lessened and fear is reduced as each member brings their contributing strengths to bear.

We are all well aware of funding challenges present in both public and private school settings. This is a topic best discussed with district administrators and grant writers. However, you must actively engage these individuals with your vision, ideals and plans; they won't secure funding for UDL and AT unless they know of these and why it is important. The specifics will be different for each school and organization.

One funding source that virtually all certified schools in this country qualify for, however, is the federal eRate subsidy program. This federally funded program helps schools and libraries obtain practical voice and data service levels by offsetting a percentage of telecommunications expenses. Just by turning in a successful application, most schools will get a 40 percent subsidy for monthly Internet and phone expenses. Depending on the number of your enrolled students that qualify for subsidized lunch programs, your school may be eligible for up to 80 percent of your monthly telco costs. Furthermore, state government funding, in addition to federal funds, may be available. Currently, in the state of California, half of the remaining monthly telco costs not funded by the federal government will be covered by state government provided monies. State-level funding varies from state to state, so do spend some time to investigate the federal- and state-level subsidies that may be available for your school. Not surprisingly, with the advent of the eRate program, a number of eRate consultants have emerged to help schools navigate the potentially complex application process. The combination of federal and California state funding has resulted in the Prentice School being able to upgrade to 50Mb/sec Internet access for what we used to pay for 1.5 - 3.0Mb/sec access service. Our school's technical and educational possibilities have completely opened up with improved Internet access

and cost savings.

THE STAGE IS SET

While putting various pieces in place between 2009 and 2013, it became increasingly clear how I needed to prepare the school for UDL-based AT. For a generalized AT methodology in a school to succeed, there is a dependency between Information Technology (IT), Educational Technology (Ed Tech), and AT: the Technologies Pyramid. While these three areas involve technology, understand that they are not the same and have different emphases. As the diagram suggests, IT is foundational and the base upon which the other two layers depend. The AT layer depends on both the IT layer and the Ed Tech layer underneath. How are these layers different? What are the pre-requisites for each?

The IT layer represents the basic technical infrastructure services and capabilities that all schools much have to support basic administrative and educational activities. You must make sure that computers used are up to date, there is reliable file storage and transfer, printing services work, Internet capacity can meet the anticipated needs for the school and that policies and practices allow for relative ease in accessing these resources. If this basic level of digital "plumbing" at your school does not have a level of reliability commensurate with what you want to implement AT-wise, an AT project with any ambition will be doomed to frustration, re-work and a waste of time and effort. As noted earlier, you must work with the IT department to attain common goals. In this case, what you want is what they want as well, and your IT colleagues will welcome your support.

Educational Technologies are digital tools that enhance the classroom instructor's ability to teach effectively by improving student engagement and participation, often by expanding presentation methods. Easy-to-use ceiling mounted LCD projectors, having computer laptop carts and the availability of document cameras are examples. Interactive whiteboards, by manufacturers such as Promethean and Smart Board, are another example of Ed Tech. These tools are typically championed by instructional staff, the people who rely on the capabilities afforded. IT departments don't provide for or advocate for these resources. However, for the resources in this Ed Tech layer to work, the IT layer

The Technologies Pyramid of Universal Design for Learning
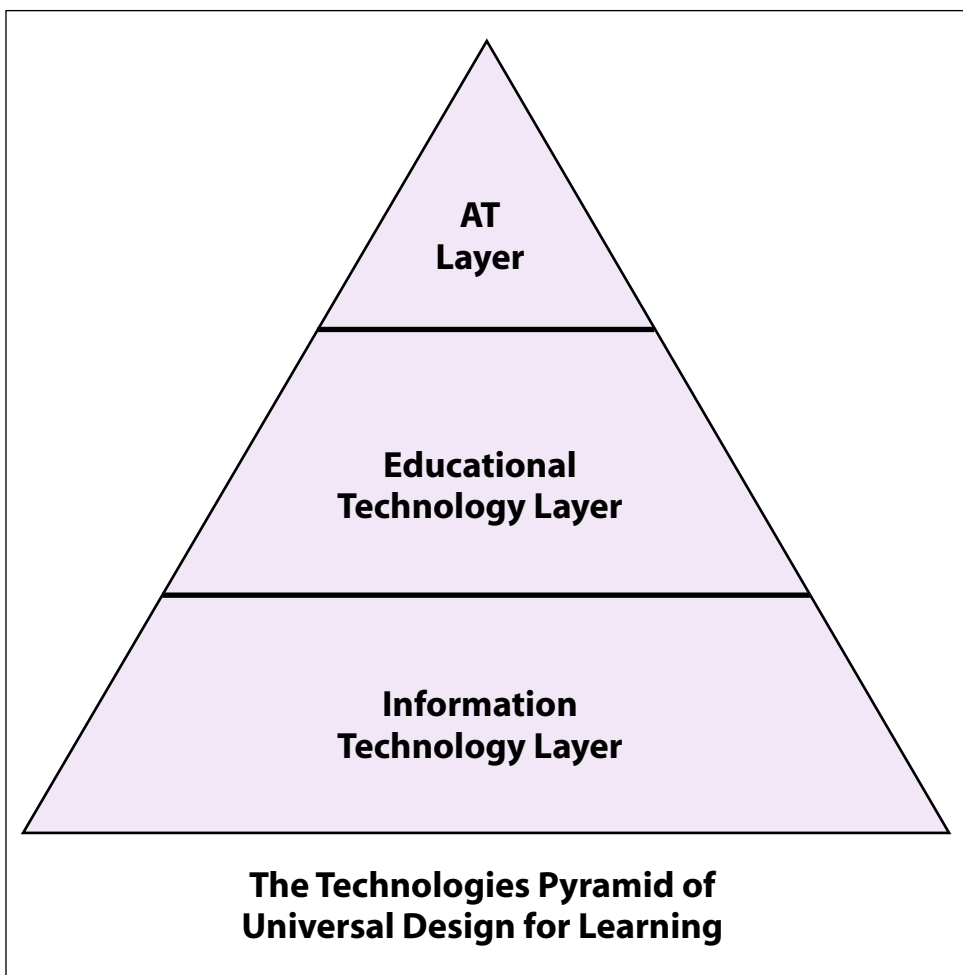
underneath must be robust and reliable.

A UDL-based AT implementation requires seamless ease in accessing AT accommodation software from any classroom, at any time, to support the instructional activities at the time. The Prentice School has purchased site licenses for the Don Johnston Inc. SOLO 6 and Snap&Read software. These two products are installed on all student and teacher accessible computers on campus: in classrooms, the laptop cart computers, the computer lab, conference rooms and the auditorium. Our site licensing agreement permits home use rights on a student's personal laptop used at school or a parent's desktop at home used by a student. When a history teacher covering the origins of WW II can effortlessly use graphical writing software, such as Inspiration or Draft:Builder, to map out on the classroom whiteboard causal factors using the classroom LCD projector and an interactive whiteboard with student participation, you have a successful instance of the AT layer running on top of the Ed Tech and IT layers. Here the IT and Ed Tech layers are transparent and not even noticed. Further-

more, if this history teacher has facility and competency with the AT tools used, even the modeling of tool use becomes invisible and all that remains are the ideas, and learning taking place as students, in turn, practice the modeling shown on their own laptops.

As you solidify your technology pieces, you must pay attention to your three audiences: the students, teachers and parents. There must be a mechanism for students to gain competency with AT software. All Prentice 6th grade students take a year-long elective class to use AT Tools. When these students move on to 7th and 8th grade, they will be able to use these tools as everyday supports. Starting in 6th grade and into 7th and 8th grade, they will see teachers modeling the use of AT software during classroom instruction. Instructional faculty at Prentice are supported in their use of AT software through group professional development instruction, as well as one-on-one coaching and team teaching with the AT Specialist.

Throughout the academic year, Prentice parents are given the opportunity to take

ongoing hands-on workshops on AT software use and guidance on how to start thinking about AT as more than what is used in school classrooms. Parents are informed that they have responsibilities in support of their child's use of AT tools at home. Dyslexia and dysgraphia do not occur only during school hours. Use of AT supports must be generalized throughout the student's life and parents have a great responsibility to help realize this goal. In my workshops, I also stress the importance of maintaining clear and timely communication between parents and teachers regarding student use of AT. As the AT Specialist, I also play a role in this dialogue. This is the Three-Legged AT Implementation chair. If the three legs of the chair do not support each other, the students become unmoored and inconsistent in their use of the tools. Generalization does not occur and the chair falls over.

WHAT'S HAPPENED SINCE OCTOBER 2013

If the pace of change at Prentice School wasn't dramatic enough up to October 2013, the amount of change since then has been staggering. The changes below all positively affect the three layers of the Technologies Pyramid, along with new opportunities to strengthen the Three Legged AT Implementation Chair.

- Adoption of Google Apps for Education (GAFE): a huge culture shift
  - Ended use of Citrix-based cloud storage, ended upgrade of Microsoft Office applications
  - Tremendous cost savings, vast reduction in software licensing fees
    - Possible to provide all students with own GAFE network account, including school-based email
  - Streamlined network maintenance
  - Powerful collaboration opportunities using GAFE software's link sharing model
- Replaced overburdened campus WiFi infrastructure with educational institution-grade equipment in March 2014
  - What used to be daily WiFi problems are now a thing of the past
  - Students used to evade school work, claiming network problems prevented assignment completion: no more
- New school executive director and principal, and retirement of a number of long standing faculty
  - New staffing in the back offices, the principal's office and in the classroom have brought a receptiveness and expectation of change
  - School finds itself now challenged with managing pace of change rather than struggling to start change
  - The AT Specialist of five years now is more of an "old timer" than new blood
    - Challenge for me now is to educate new staff on UDL-based AT and maintaining momentum

A month into the new 2014-2015 academic year finds the school still absorbing the changes begun last year. Because nothing in education stands still, changes appear on the horizon with two of the most significant items for the new year at Prentice potentially affecting Educational Technology and AT.

Google Classroom – This fascinating new tool has the potential to greatly streamline classroom workflow management. Google Classroom is cost free and "snaps" onto our teachers' and students' existing GAFE accounts and file management. The teacher creates and populates a "class" group; sends an assignment to the named class; the assignment shows up in the students' mail box along with teacher-provided text and video clip links as resource material; students read and view the content, complete the assignment and "submit" the work; from the teacher's classroom management panel, turn-in times are displayed along with grades and comments between teacher and student regarding the assignment. We will be looking at Google Classroom closely and evaluating its potential.

Deployment of AT software as Google Chrome browser extensions – A number of schools are adopting Chromebooks as a preferred educational technology device in general education. What has been holding back Chromebook use in the educational AT world has been the lack of native AT apps in Chrome, otherwise known as Chrome extensions. Chromebooks have the appeal of pricing, management simplicity and ease of use. Google has clearly committed to fostering a rich and deep extension library for its Chrome browser. AT software manufacturers, not wanting to miss the boat on this, are beginning to create software that will run as Chrome extensions. Once a few more key AT software titles migrate to Chrome successfully, Prentice School intends to convert to a Chromebook-for-students environment.

I am very fortunate to be the AT specialist at a school that is creating and committing to a Universal Design for Learning–based AT philosophy. The past challenges and achievements have been great, and new challenges and feats always lie ahead. It is my hope that my description of the Prentice School's journey, so far, has stimulated your own originality and thinking about how you can start such a process in your school. ∎

ZoomText "Top 20"

School is back in session! We want you to have a successful year and be able to effectively help your students that have visual impairments.

Below you'll see the "Top 20" things that you should know about ZoomText, the world's leading magnification and screen reading software for the visually impaired. It's a very powerful program that can help make any task easier on the computer. In this list, you'll read about features, settings, differences in license types and much more. I am confident that you'll come away with some tips to help make your day, or your students' day, more productive than ever before.
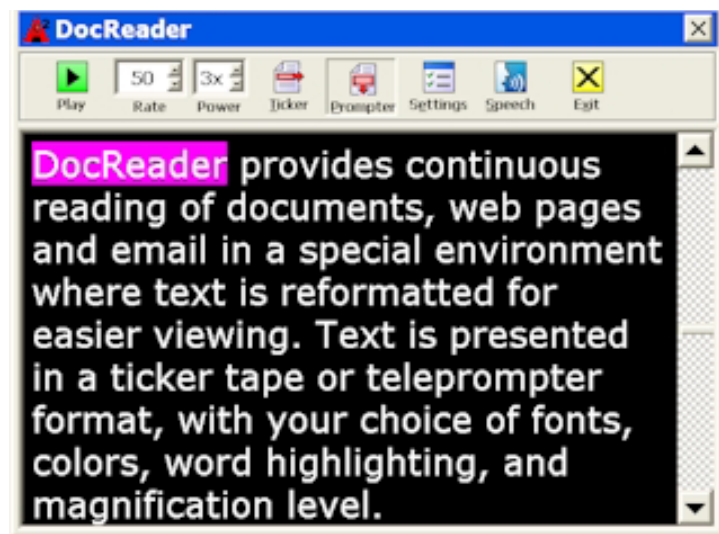
ZoomText's DocReader window

TURNING ZOOMTEXT ON AND OFF

Oftentimes, students collaborate with a sighted peer and knowing how to quickly turn ZoomText on and off without quitting the program is extremely useful. The quickest way to disable ZoomText is with the hotkey: ALT + DEL. Turn it back on with the hotkey: ALT + INS. You can also click the first button in the ZoomText toolbar – think of it as an on/off switch!

QUICKLY ADJUSTING MAGNIFICATION

Most of the time, one magnification level fits the bill across the board. However, sometimes students will encounter a website with really tiny text and they'll want to zoom in. Here are several ways to adjust magnification:

• CTRL + MOUSEWHEEL UP / DOWN
• ALT + NUMPAD +, -
• Or click the power spinbox buttons on the ZoomText user interface

LAUNCHING APPREADER RIGHT WHERE YOU WANT IT TO READ

In ZoomText 10, we added a really handy hotkey for AppReader. Just press ALT + SHIFT and then left click the mouse on the word you'd like AppReader to start reading from. This will really increase your student's productivity and efficiency!

DIFFERENCES BETWEEN APPREADER AND DOCREADER

AppReader keeps you in the application you're in and highlights along as it reads. This is a great tool for the Web and other applications, like Word, as well. As you enter and exit AppReader, your view does not change, providing a quick and seamless transition between editing and reading.

DocReader removes all text and places it in its own window, reformatting the text to be stripped of distracting formatting. The high contrast text is completely customizable to your students' needs. DocReader is best used in documents since it pulls all

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the content from the application. On the Web, this would include the menus, sidebar links, advertisements, etc., which can be messy to view. Conveniently launched using the hotkey ALT + SHIFT + D.

BACKGROUND READER

ZoomText's Background Reader allows you to listen to documents, webpages or email while you simultaneously perform other tasks. This is a great tool for students who want to be able to multitask and increase their productivity. They can listen to one article while searching for the next; or they can take notes while listening! Here are some handy hotkeys:

- CAPS LOCK + C – reads clipboard content
- CAPS LOCK + S – reads selected text
- CAPS LOCK + ENTER – play/pause
- CAPS LOCK + ESC – exit

EFFECTIVELY USING ZOOMTEXT ON THE WEB

The Web can be a frustrating experience when you are visually impaired; ads, pop-ups, distracting layouts, ever changing content, you name it! Luckily, ZoomText has some great tools to help cut down on your student's frustration:

- Web Finder for searching, locating, and reading content you're interested in
  - Handy hotkey: CTRL + SHIFT + W
- SpeakIt Tool for spot reading
  - Handy hotkey: ALT + SHIFT + I
- Recorder to take content with you on the go
  - Handy hotkeys:
    - CTRL + CAPS LOCK + C: Record clipboard text
    - CTRL + CAPS LOCK + S: Record selected text
- AppReader or Background Reader work great on the Web as well!

You will want to make sure your student is using a supported Web browser, which changes, depending on their version of ZoomText:

- ZoomText 10.1 in Windows 8 or 8.1
  - Internet Explorer (IE) 10 or 11, or any version of Firefox
- ZoomText 10.1 in Windows 7
  - IE 8-11, or any version of Firefox
- ZoomText 10
  - IE 9 or older, or any version of Firefox
- ZoomText 9.1

Using ZoomText's AppReader on the web
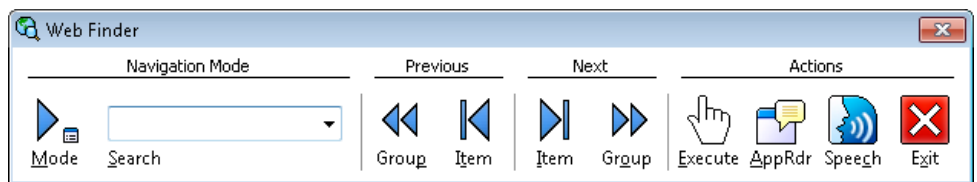
The Web Finder toolbar

- IE 8 or older, or any version of Firefox

FREEZE WINDOW

When magnifying, your student is only seeing a small portion of the screen at a time. Maybe they'd like to always see a certain area on screen – say the time of day, or a particular cell in Excel. That's where the Freeze Window comes into play. Use the hotkey CTRL + SHIFT + N to launch the tool and just left click and drag the mouse over the area you want to stay on screen. Want the Freeze Window to disappear? Use the hotkey CTRL + SHIFT + E to turn it off.

TURNING COLOR ENHANCEMENT ON/OFF

ZoomText's color enhancements are a wonderful tool to cut down on contrast and glare on screen. But, if your student is looking at photographs, they'll want to know how to turn them off quickly. Just use the hotkey CTRL + SHIFT + C to toggle them on and off.

ZoomText's Color Enhancement

DIFFERENCE BETWEEN LICENSE TYPES

ZoomText comes in a variety of license types to fit any need. A Single User license is meant to serve one person, but you're given three activations. Many times an individual has multiple computers (desktop, laptop, work computer) and this license would cover their needs.

A USB license is also meant to serve one person, but it's for an individual who needs ZoomText on more than three computers. Great for a school who wants to purchase multiple USB licenses (multi-user pricing available) and can give them out to students as they need them, for a school year, or for as long as is necessary. As long as the ZoomText trial has been installed already on the machines, the sky is the limit as to how many machines the student can use ZoomText on. If you give it to them for home/personal use as well, they will need administrative rights for the first time they plug in the stick. After that one time installation, they just plug in the stick and ZoomText will automatically start up with their specific settings!

A Network license is designed for organizations or schools that have five or more ZoomText users who all work within a single network. ZoomText can be installed to ALL of the computers on the network, allowing students and teachers to sit at any available workstation. This license is scalable in packs of five and additional users can be added at any time. The number of concurrent users is limited to number of licensed users – for example, if you have a 10-user license, 10 people can be using ZoomText at the same time. This is an easy license for IT staff to manage!

A District license is also designed for organizations that have five or more ZoomText users (scalable in packs of five), but in this case, they work beyond the bounds of a single network. The district license is recommended for schools having users spread across multiple networks, working on standalone workstations (not attached to a network), or mobile users, such as teachers and trainers that are out on the road. The total number of installations is limited to the number of licensed users. For example, a 10-user license can be installed and activated on exactly 10 computers.

DIFFERENCES BETWEEN ZOOMTEXT CAMERA AND ZOOMTEXT IMAGEREADER

The ZoomText Camera uses an inexpensive webcam to provide your student with an affordable CCTV alternative. Whenever a student receives printed materials in class, they can use ZoomText Camera to zoom in on the item and apply a color filter to make things easier to see. The flexible arm/stand lets your students zero in on objects

Using ZoomText Camera to read a book

of various sizes. ZoomText Camera does not take pictures or do any reading.

ZoomText ImageReader lets your students take a picture of a printed item and have it read aloud. ImageReader comes with an HD document camera and custom made positioning mat. This product is not meant to zoom in on an item and visually read it, but to have items read aloud after it performs Optical Character Recognition (OCR). It can also read files, the clipboard and areas on screen and there are two camera sizes to choose from.

SAVING SETTINGS

To save time, your student can have all of their custom preferences automatically load every time they start up ZoomText. Make all the adjustments they wish, then go to the File menu and choose "Save as Default." Not to worry, you can always get them back to factory settings by going to

File and choosing "Restore Defaults."

TRANSFERRING ACTIVATIONS

When you or a student no longer needs ZoomText on a particular computer, you do not have to lose that activation. Simply go to ZoomText's Help menu, choose "Transfer software license…", and follow the on-screen prompts.

HOTKEYS

Every ZoomText feature can be accessed using the keyboard using "hotkeys." These can really save you and your students time – if you ever want to see all of the hotkeys, you can do that in a variety of ways:

- Go to the Settings menu on the ZoomText toolbar and choose "Hotkeys…"
  - Not only can you view hotkeys, but you can reassign them as well!
- ZoomText's Help system: go to the Help

menu on the ZoomText toolbar and choose "ZoomText Help." Navigate to the "Hotkeys" chapter to review all shortcuts.

- Printed user manual that comes with your purchase
- Online documentation at http://www.aisquared.com

BRINGING UP THE USER INTERFACE

Whenever you want to bring up the ZoomText toolbar to make any tweaks, the quickest way to do that is the handy hotkey: CTRL + SHIFT + U.

CONFIGURATION FILES

Do your student's eyes change during the day? Do you have multiple ZoomText users accessing the same computer, all of them with different preferences (including language of the user interface)?

This is where configuration files can come into play! Save different files for each student and quickly bring them up using an assigned hotkey. Just simply set all the choices you'd like, go to the File menu on the ZoomText toolbar and choose "Save Configuration… ." Now you or your student can quickly switch a collection of settings with one keystroke!

APPLICATION SETTINGS

Do you or your students have different needs, depending on the program you're in? Maybe you want color enhancements to only turn on when you're in Word. ZoomText can take care of this for you with Application Settings.

Open the application, choose your settings, then press the hotkey CTRL + SHIFT + S. Now every time you are in Word, color enhancements will turn on automatically, you don't have to do a thing.

LAUNCHING (OR NOT LAUNCHING) AT STARTUP

Oftentimes, a computer is shared among individuals who are sighted and visually impaired. Depending on your situation, you might want (or not want) ZoomText to turn on when the system turns on. Simply go to ZoomText's Settings menu and choose "Program… ."

Adjust the first checkbox accordingly! As a compromise, you could set it to NOT start automatically, but you could turn on the option to start using a hotkey so a user could quickly turn ZoomText on using a keyboard shortcut instead of trying to find the desktop icon.

ADJUSTING HOW MUCH ZOOMTEXT SPEAKS

If you or a student would like to adjust how much ZoomText is speaking, go to the Reader tab of the user interface and click on "Verbos." Choose from the presets (Beginner, Intermediate or Advanced) or pull up Settings to customize. Ever want ZoomText to stop talking? Just press CTRL and speech will immediately stop.

EDITING THE ZOOMTEXT DICTIONARY

Is ZoomText mispronouncing your student's name? Or a city? Not to worry, you can train ZoomText by editing the dictionary. Go to ZoomText's Reader menu, choose "Synthesizer…" and click the Options button. Here you can add a new word – in the Source field, type the word it's mispronouncing and in Target, phonetically spell the word. Test how it sounds with the Read button – it might take a few tries, but ZoomText is fully trainable!

WHERE TO GET HELP WHEN YOU NEED IT

ZoomText was designed to be user friendly, but we know that questions will come up. Here are some resources for when you need a little assistance:

- There's a help system built into Zoom-Text; go to the Help menu and choose "ZoomText Help."
- Support is always free – we are based in Vermont and are in the office Monday through Friday from 9 AM to 5 PM Eastern Time. Call us at (802) 362-3612 or send an email to support@aisquared.com.
- Go to our website (http://www.aisquared.com) and click on the Learning tab at the top. You'll see information about free live webinars, recorded content, ZoomText University (paid in-person training classes), our "Zoomed In" blog that contains tons of tips and tricks on video, as well as our YouTube page.

I hope you found this Top 20 list useful – best of luck in the 2014-2015 school year!

Remember that with the right tools, a visual impairment is no barrier to success. ■