

Closing The Gap

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Solutions

Beyond the iPad

Spreading "The Word" about Cognitive Rescaling as a Tool for Inclusion

Bytes of Learning

Low Tech Communication: An Integral Part of a Multi-Modality System

The Foundational Steps for Developing Language Competence in AAC Speakers

30th Annual Closing The Gap Conference Details JUST ANNOUNCED- Over 200 Presentations and Hands-On Lab Opportunities!

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SUE REDEPENNING (left) Sue is a licensed occupational therapist with over 20 years of experience working with all age groups, settings and a variety of disabilities. She is currently working at Courage Center in Minneapolis and is the Supervisor of Assistive Technology. Sue is also a licensed driving instructor working to assist in the Driver's Rehabilitation Program at Courage Center.

JENNIFER MUNDL (right) has over 20 years of experience working within the disability community with all kinds limitations. She began the Assistive Technology Program at Courage Center in Minnesota. By background, she holds a Masters in special education and an undergraduate in computer science. She has spoken throughout the nation and creates the newsletter on technology at Courage Center, which is available through the company website.

Beyond the iPad

By Sue Redepning and Jennifer Mundl



Samsung Galaxy III



Blackberry Tablet



Asus Transformer Prime

The iPad has made its way into today's society. It now is on its third rendition and has sold over all projections. It is becoming commonplace in our society and we see it in coffee houses, homes, schools and business. It is not the only option out there for portable computing needs. There is the Android market and many book readers provide similar options to the iPad.

The first thing to consider is what you want the device to do. This makes a difference in what might be the best option. The features to consider include:

- Size and weight
- Battery power
- Operating system
- Accessibility options
- Accessories
- Android versus iPad
- Apps

The next step is to match the technology with the above items along with how it will be used. It is crucial to first consider the access method. The adaptations available on the different devices are diverse for both the hardware and the applications.

WHAT IS ANDROID

Android powers millions of phones, tablets and other devices and brings the power of Google and the Web into your hands. Building on the contributions of the open-source Linux community and more than 300 hardware, software and carrier partners, Android has rapidly become the fastest-growing mobile OS. To date, there are more than 200 million activated Android devices, and every day more than 550,000 new devices are activated in more than 137 countries and regions.

Android's openness has made it a favorite for consumers and developers alike, driving strong growth in app consumption. In the third quarter

of 2011 alone, people downloaded more than 2.4 billion apps to their Android devices. Google Play is the premier marketplace for selling and distributing apps to Android users around the world. When you publish an app on Google Play, you reach hundreds of millions of customers in over 130 countries

IPAD LOOK-ALIKES

It's very true that the Motorola Xoom, the Samsung Galaxy Tab and the Dell Streak 7 aren't quite like the iPad. But that's the whole point. Like Apple's tablet, each has its own strengths and weaknesses, and each will appeal to a particular user's needs and budget. There are a multitude available at local computer stores and online with accessories similar to the iPad. There were 300 million Android devices across the globe in February and with 850,000 daily Android activations, by now the headline figure must be somewhere around 3.75 million. And Google Play now offers over 500,000 apps.

Many times, developers create products available in both Apple and Android models. The hardware is similar on all devices, so identifying what to buy is less a hardware issue, but rather purchased based on apps and accessories. Many of these products host a cell phone and mini tablet, which are useful personally, academically and vocationally, and are disability friendly. The choice is yours, but you must weigh all of the options to purchase the best product for your needs, considering all of the disability-related issues. Maple Grove Sandy Creek, in Minnesota, is one elementary school that has chosen not to use an iPad, but rather an Acer, in their special education program as it is better suited for their student population who are severely autistic with behavioral issues and physical limitations.

SAMSUNG GALAXY

After a long wait and considerable speculation, Samsung finally unveiled the Galaxy S III smartphone on May 3. And by all accounts, it's quite impressive, boasting a 4.8-inch PenTile Super AMOLED (active-matrix organic LED) display, an 8-megapixel camera and up to 32GB of storage, initially. Add that to the Bluetooth 4.0 support, near-field communication, or NFC, for making mobile payments along with the quad-core Exynos 4 Quad system-on-a-chip, and it's clear Samsung has its sights set on Apple with its latest handset features. The display is excellent for visual limitations because of its size, adjustability, high-definition layout, voice output and durability. Best Buy, among other vendors, has this product available in stores where a person would be able to see the device prior to purchasing it.

BLACKBERRY 7-INCH ANDROID TABLET 2.2 WIFI TOUCH SCREEN TABLET WITH CAMERA

This Tablet PC comes with 7.0-inch Resistance Touch Screen, Android 2.2 Operation System, Built-in .3 Mega Pixel Camera, 800MHZ CPU + 300MHZ DSP, 256M Memory, 1G Standard/4G FLASH. It supports multiple functions, such as YouTube, Messenger, Google Market, Word, Excel, Power Point, Email, Music and WIFI. Besides the standard functions, Games, Video, Music, Network Chatting and Pictures are all available in this wonderful tablet PC. It is ideal for business people on the go, students, children and home users. You can surf the Net, send e-mails, instant messaging, study, compose documents, manage accounts and spreadsheets, view PowerPoint presentations and lots of other work. You can watch movies and listen to music on the Micro SD card or the Flash Drive. Perfect in college to take notes and do online assignments. It easily fits in a book bag or purse and it is the lightest tablet available. Websites with a lot of photos and detailed content take a little bit of time to load up all the way, but any website that is mainly text loads in a matter of seconds. The best feature is its price at \$79, which is the price of many book readers, but this product provides much more beyond that and rivals the iPad.

ASUS TRANSFORMER PRIME

The Prime is the first Tegra 3 tablet and the top tablet aside from the iPad. It's thinner than every other tablet in existence, and comes bundled with a keyboard dock that can be

fixed to make the tablet a full-on fold-up Android netbook. The dock has its own battery too, and passes its charge over to the tablet whenever it's connected. All in all, there are 17 hours of battery life to be had, which is amazing. It's ultra fast and powerful and will soon be an addition at Courage Center Assistive Technology.

ANDROID DISABILITY FEATURES

Apps4Android's Android Accessibility Installer offers a host of accessibility options specific to carriers: Eyes-Free Shell provides one-touch access to Android applications. The accessibility installer allows the individual to tailor its features based on a user's capabilities, rather than installing everything at once. If you decide you do not want a particular action, it is easy to add or delete an option at any time.

OPTIONS FOR VISUAL NEEDS

One option is large text. People with sight problems can benefit from having the icons look darker and the text look larger with the BIG Launcher app.

There are many voice commands built into Android settings. Voice command functionality (Voice Actions) has been with Android for a long time. But, if you want extended features beyond Google Voice Actions, you can try Vlingo Virtual Assistant, which lets you use voice commands to perform tasks, such as sending messages, dialing numbers, searching the Web, getting directions, launching apps and many more. Iris is another voice command app that you can try. It not only obeys voice commands, but also allows you to interact with your phone using your voice. In some rare situations, you might need to install the Voice Search app and a text-to-speech (TTS) library on your device – although most handsets come with these.

OPTIONS FOR THE HEARING IMPAIRED

Google Talk and other messengers now offer accessibility features, and vibration can be used as a convenient alerting tool, too.

If you would like to converse with a friend who can't read sign language face to face, the Text-to-Speech Toy app is your ally.

OPTIONS FOR THE MOBILITY IMPAIRED

Large text is yet another useful tool, as users are able to easily toggle settings and select large icons with the use of the BIG Launcher app.

Easier navigation is coming. Potentially revolutionary work is being done with the Tecla Access app. With development still underway, this app aims to make Android devices and other major smartphones and tablets completely accessible using the mechanism that's being used in navigating powered wheelchairs. While waiting for the commercial version to be released, an open-source Tecla Shield interface can be assembled for users.

OVERVIEW OF BUILT-IN ANDROID ACCESSIBILITY FEATURES

There are additional assistive technology features built into an Android. The following is an extended list of options to pursue when deciding on an android device.

Hearing/Speech

- CrystalTalk, a mobile device technology that compensates for background noise
- Telecoil speaker for hearing aid wearers
- Speakerphone
- VibraCall Alert system
- Text messaging
- Closed captioning for television set-ups

Vision

- Verbal readouts of screen information, including caller ID, voicemail alerts and battery level
- Keypad depression feedback
- Brightly backlit displays and high contrast
- Bluetooth headset with MotoSpeak technology that reads out text messages in real time

Mobility and Manipulation

- Easy-to-open clam shells or sliders
- iTAP Capable
- Automatic Answer
- Auto redial when system is busy

Cognition

- Voice recorder
- Picture caller ID
- Time-independent user responses
- Customized ringer alerts to identify incoming caller

SPECIAL NEEDS ANDROID APPS IN THE ANDROID MARKET

While a lot of work is still needed to make the use of Android devices fully accessible and convenient, these apps are a step in the right direction and with the right resources and dedication, absolute ease of use for our

friends with disabilities just might be a reality in the near future.

Not all Android apps are free. The following are some that are available on the Android platform. There are many more that may be beneficial to someone with a disability, but this is a good starting list of options to consider.

VOICE4U

Price: \$29.99

Voice4u is a revolutionary picture-based AAC (augmentative and alternative communication) application that helps individuals express their feelings, thoughts, actions and things they need. It is a perfect solution for learning and communication for individuals with autism. Voice4u includes over 150 pre-loaded icons and lets you create your own icons and categories.



TAPTOTALK

Price: Subscription based - \$99.95 per child per year

TapToTalk turns an Android device into an affordable AAC device. TapToTalk displays a set of pictures on the screen. When you tap a picture, TapToTalk plays a word or sentence and displays another screen of pictures. Each of those pictures can lead to another screen, and so on. For example, a picture representing food can lead to a screen with pictures of fruit, vegetables, sandwiches, snacks and other foods.



JABTALK

Price: \$9.99

JABtalk is an Android application that provides a fresh new approach to speech and communication technology. Speech therapists commonly refer to JABtalk as an easy-to-use and effective AAC device. By combining personalized voice and images with an extremely simple user interface, JABtalk delivers a speech solution that is both fun to use and easy to learn.



MODEL ME GOING PLACES

Price: Free

Model Me Going Places is a great visual teaching tool for helping your child learn to navigate challenging locations in the community. Each location contains a photo slide show of children modeling appropriate behavior. Locations include: Hairdresser, Mall, Doctor, Playground, Grocery Store, Restaurant



BEHAVIOR TRACKER PRO

Price: \$29.99

Behavior Tracker Pro dramatically increases the efficiency of an autism treatment program. BTP is a behavioral data collection app that allows behavioral therapists, teachers or parents to track and graph behaviors. BTP improves your child's ABA therapy by capturing behavioral data and translating into an easy-to-understand graphical format.



AAC SPEECH BUDDY

Price: \$27.99

AAC Speech Buddy was created to quickly and easily create custom PECS Speech Sets online (aacspeech.com) that can be loaded on one or many AAC Speech Buddy Apps. AAC SpeechBuddy allows users to quickly and easily create customized Speech Sets using their own photos or collected images or using images from the AACSpeech.com image repository.



IAUGCOMM

Price: \$4.99

Created by Apps4Android, an Android software development company dedicated to developing Android applications that enhance the quality of life, independence and educational success of individuals with disabilities. iAugComm turns your Android into a powerful, high-quality, low-cost AAC device that can enable individuals who are non-verbal or whose speech is difficult to



understand to communicate easily and effectively using a simple, icon-based interface.

CONCLUSION

This article begins to explore the world of Android. It does not report on every option and app available. It is expected that this market will continue to grow and bring in new apps and technology that can benefit the disability world. Besides tablet devices, many cell phones now come with Android features and the ability to use the apps discussed above. Additionally, many apps available on the iPad may also be available on Android products.

Visit <https://play.google.com/store/apps> to locate the apps mentioned in this article.

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iPhone Apps for Disability and Vision Impairments, Disability World Update, May 25, 2012

Accessibility Features in Android 2.0 Platform

Disabled World - AT&T customers who are blind or have low vision can now access and enjoy their Android device in a fully accessible way: <http://www.disabled-world.com/assistivedevices/apps/android-app.php#ixzz1xKVgjoB9>, June 9, 2012

<http://www.disabled-world.com/assistivedevices/apps/iphone-apps.php>, Apps for Disability and Vision Impairments, June 9, 2012. ■



SALLY NORTON-DARR, MS, CCC-SLP, (left) is an assistive technology trainer for Loudoun County Public Schools in Virginia, as well as a nationally certified speech-language pathologist. She has presented internationally, regionally and virtually to diverse audiences on a wide range of low-,mid- and high-tech strategies, interventions and solutions. Sally is also the co-author of the ISTE publication: *The Practical (and Fun) Guide to Assistive Technology in Public Schools*. Sally.NortonDarr@LCPS.org

JUDITH SCHOONOVER, MEd, OTR/L, ATP (right) is an occupational therapist and former elementary school teacher. She is certified as an AT practitioner by RESNA and is a founding member of the Loudoun County (VA) Public Schools AT team. Judith has worked in schools for more than 35 years, publishing and presenting on the topics of school-based occupational therapy, transition and assistive technology. She is the vice president of the Virginia Occupational Therapy Association and has served as the communication liaison for the American Occupational Therapy Association Early Intervention and School Special Interest Section. Judith is a member of AOTA's RTI and Transition Task Forces, and an AOTA Representative to the National Joint Committee for the Communication Needs of Persons with Severe Disabilities (NJC).

Spreading “The Word” about Cognitive Rescaling as a Tool for Inclusion

By Sally Norton-Darr and Judith Schoonover

“

Warren pushes up his glasses, and like his classmates, hunches over the book on his desk. Using his finger to track across the page, his lips purse as he encounters an unfamiliar word.

“O.K., class, close your books,” his teacher announces, “let’s discuss the chapter. Why do you suppose John Wilkes Booth shouted, “Sic Semper Tyrannis” after assassinating Abraham Lincoln?” Warren fingers his copy of *Clifford the Big Red Dog* and looks puzzled.

”

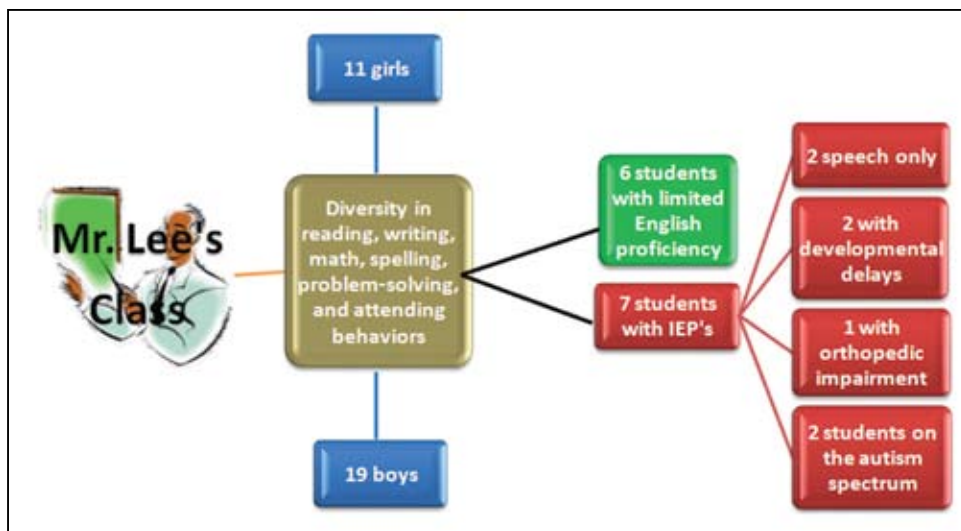
Have you seen a learner like Warren at your school, a learner who is included only in the sense of sharing physical space with his/her classmates? Inclusion is intended as commitment to educate each learner, to the maximum degree possible, in the school and classroom s/he would typically attend, and should not end with placement in a “regular” classroom, but rather begin with opening the doors to participation as a member of the classroom and school community. Hopefully, the practice of inclusion in physical presence only is becoming the exception rather than the norm.

Speaking of exceptions, it is a rarity in this day and age that a classroom is comprised of learners with the same ethnicities, life experiences, learning styles and more. Take Mr. Lee’s class for example; his classroom is made up of 19 boys, 11 girls, six learners who are English language learners, seven learners with IEPs (two speech only, one learner with orthopedic impairments, two learners on the autism spectrum and two with developmental delays).

Like most of the United States, the state in which Mr. Lee teaches has adopted the Common Core Standards. An excerpt from a white paper written on the Common Core State Standards and the impact on access to the general education curriculum for learners with disabilities reads as follows:

“To ensure meaningful and complete participation and success in the general education curriculum for learners receiving special education services, the developers of the Common Core State Standards suggest additional supports and services be provided, as needed. They include:

- instructional strategies based on the principles of Universal Design for Learning (UDL). These strategies support student engagement by presenting information in multiple ways and allowing for students to access and express what they know in a variety of ways.
- accommodations, including changes in materials and/or procedures. An important consideration is that these accommodations should not alter the standards nor lower the expectations for learners to successfully accomplish the work.
- assistive technology devices and services to enable access to the standards.”



Schematic of Mr. Lee's class (SmartArt)

With learners like Warren in mind, in 1996, David Yoder, Karen Erickson and David Koppenhaver, working at the Center for Literacy and Disability Studies at the University of North Carolina, co-authored a Literacy Bill of Rights, which began with the statement that “all persons, regardless of the extent or severity of their disabilities, have the basic right to use print.” Right number six is “the right to have teachers and other service providers who are knowledgeable about literacy instruction methods and principles. Methods include but are not limited to instruction, assessment and the technologies required to make literacy accessible to individuals with disabilities. Principles include, but are not limited to, the beliefs that literacy is learned across places and time, and no person is too disabled to benefit from literacy learning opportunities.”

How can cash-strapped school districts empower their service providers to make this happen? Let's start with UDL. Did you know that the difficulty of information can be altered to address each pillar of the Universal Design for Learning, UDL (CAST, 2011) using MS Word and free Internet downloads? It is possible to break out of the one-size-fits-all mentality of curriculum, instruction and assessment, using digital technologies that alter the cognitive difficulty of information to provide multiple means of representation, action and expression, and engagement. In 2002, Edyburn coined the term “cognitive rescaling,” defining it as “a process of altering the cognitive difficulty of information,” changing the “cognitive challenge in understanding the information.” Using tools already available in most school

districts, such as Microsoft Office features, in novel ways, curriculum and instruction can be designed or transformed with scaffolds and supports embedded to ensure that all learners have access to knowledge. Every educator can produce technology-enhanced digital text with readily available software and free Internet downloads. Learners can also be taught to alter the amount, cognitive challenge and appearance of text as a form of self-advocacy using common MS Office features.

Arguably, the most critical obstacle to individualizing instruction is the “one size fits all” aspect of traditional print-based curriculum, which presents significant barriers for learners with sensory or motor disabilities, learners with low cognitive abilities, those with attentional and organizational problems and those with learning disabilities (Stahl, 2004). Traditional teacher-created “fixes,” such as recording textbook chapters for learners with grade level auditory comprehension, highlighting the key points to focus attention on essential facts and vocabulary, or sitting with a learner to read and discuss the text together (Edyburn, 2002), meet some needs, however, the overall outcome may be fragmented and individualized to the point of teacher burn-out and learner disengagement.

Enter UDL, a set of principles for designing curriculum that provides all individuals with equal opportunities to access information. Based on research of learner differences and effective instruction, UDL advocates for varied and flexible ways to represent content (the “what” of learning), plan and execute learning activi-

ties (the “how” of learning) and achieve and maintain learner engagement (the “why” of learning). Providing information in a variety of modalities (visual, oral, auditory and textual) can help educators reach a wider and more diverse audience. Differentiating instruction means accommodating these differences by tailoring teaching to learners’ strengths and knowledge.

Changing the cognitive difficulty of information using digital technologies can engage learners, resulting in higher levels of academic achievement. Providing materials and tasks of varied levels of difficulty, along with supports, to multiple instructional groups and allowing learners to work in modes that are most successful for them (e.g., alone or collaborative, auditory or visual, practical or creative) (Tomlinson,

2001) gives learners multiple options for taking in information, for making sense of ideas and for expressing what they learn. Low-tech to high-tech resources that most schools already have on hand can be used to facilitate this kind of tailored instruction. Simple graphics software and word processors, as well as resources and tools found on the Internet, offer learners a variety of ways to access content, work with information to

Here’s how Mr. Lee approaches the challenge of teaching his diverse group of learners: he thinks about methods in which his learners can see, hear and interact with text and looks for vehicles to provide access and equity, beginning with the resources and materials he already has.

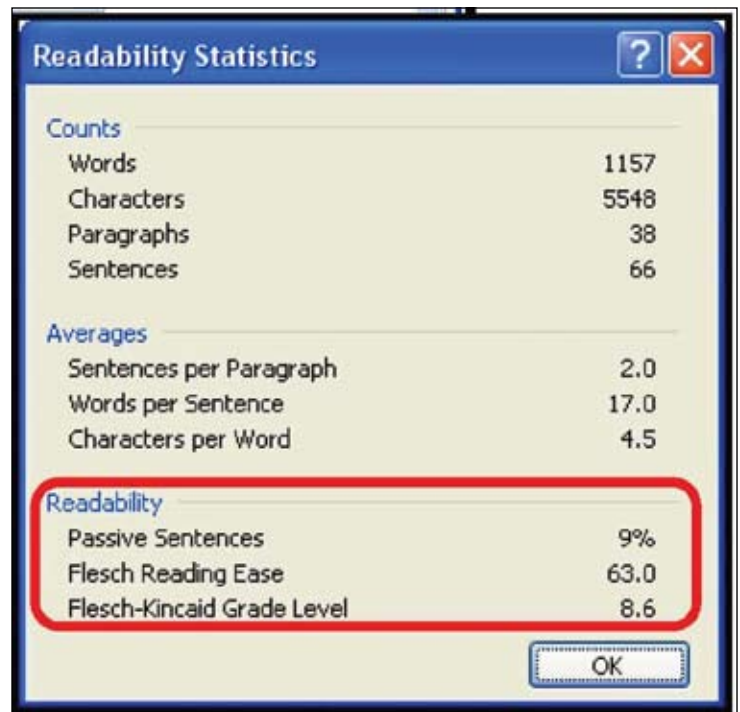
By viewing low-tech to high-tech classroom tools, such as interactive whiteboards, computer software, manipulatives, magnetic strip card readers and the Internet through, “a UDL lens”, he is able to determine a number of ordinary supports that could be used in extraordinary ways to circumvent barriers using the principles of multiple means of representation. Mr. Lee knows that with the influx of a vast variety of productivity tools, it is now possible to design or transform curriculum or instructional methodology with the scaffolds and supports needed to ensure that all learners have access to knowledge. This practice is also referred to as “scaffolding.” Scaffolding provides what might be a temporary assistive component to instructional material or methods in order to assist a learner in understanding or completing a learning task successfully and is intended to be removed if/when when mastery is achieved (CAST, n.d.). To begin the scaffolding process, Mr. Lee acquires digital versions of the information he needs to convey, using resources, such as textbooks, CDs, topic-related websites, etc. He is aware that the Chafee Amendment was passed to facilitate the creation of accessible formats of print materials for the benefit of students with disabilities. He then pastes the text in sections into MS Word in order to check the readability of the text.

develop understanding and demonstrate what they know. Regardless of the source of the original text, to make the curriculum accessible, it is essential to obtain the information in a digital format.

READABILITY

A revealing and yet hidden tool in an intervention arsenal is the readability scale built into Microsoft Word. When “Show Readability Statistics” is selected from the Proofing section of Word (2007) Options, a dialogue box is revealed at the completion of Spell Checking, which indicates the Flesch Reading Ease (higher scores indicate material that is easier to read) and Flesch-Kincaid Grade Level.

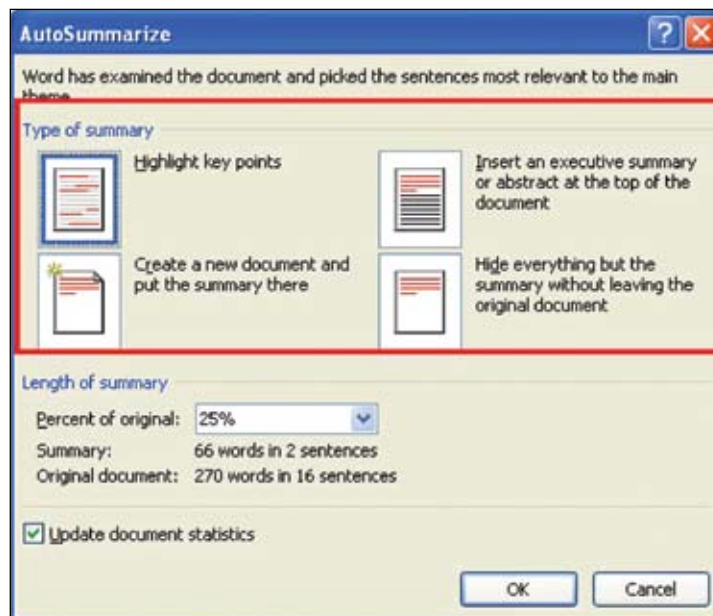
Determining the readability of the text validates Mr. Lee’s belief that the text, in its original format, may be above the reading level of at least one third of his learners. While he is aware that screen readers are available to “read” the text to his learners, there are some learners who would be unable to comprehend the content in its present form and others who would become overwhelmed with the volume of the text and simply “shut down.” So next, Mr. Lee decides to use the AutoSummarize feature, available in versions of MSWord up until the latest one, Word 2010.



Determining Readability Statistics through Microsoft Word [A web-based tool is available at <http://bit.ly/webreadability>]

AutoSummarize is a tool present in less recent versions of MSWord (up to and including Word 2007) <http://office.microsoft.com/en-us/word-help/automatically-summarize-a-document-HA010255206.aspx> AutoSummarize identifies the key points in a document and is most effective on well-structured non-fiction, such as textbooks.

A similar, more flexible, free Web-based tool can be found at www.TextCompactor.com. With these tools, one can reduce the length of the text to a percentage of its original. Caution should be taken to recheck readability at this point, and as often as needed. Adjusting the sentence length and paraphrasing or making alternate word choices using right-click synonyms will scaffold the cognitive level of the text to meet the reader's ability.



An executive summary is available through Microsoft Word [A web-based tool for this can be found at TextCompactor.com]

**EN
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Now Mr. Lee can think about his learners' learning styles to determine how to further enhance the text by considering the following individualized options for visual, auditory and access needs.

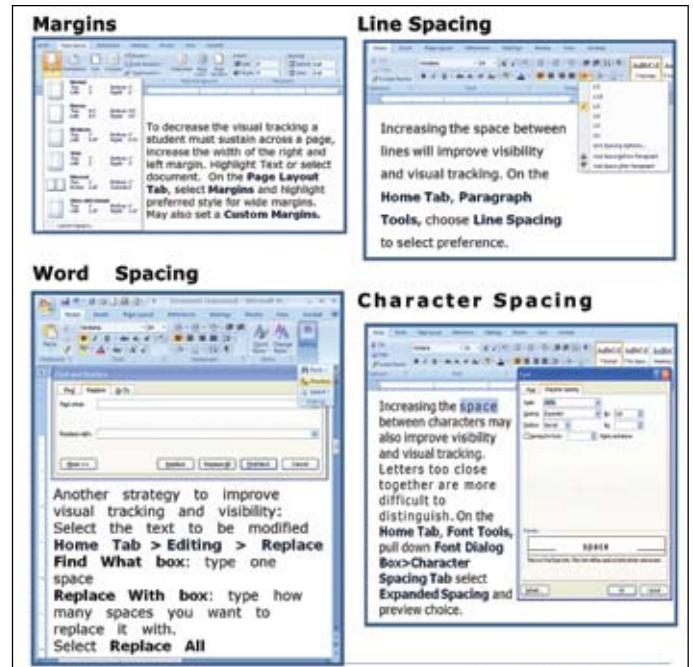
VISUAL

Color: Whenever possible, users should be allowed to select their own choice of font style and size, background and print colors. These options are readily available in MS Word and color can make a difference. Additional guidance and resources on the impact of color can be found at Judi Sweeney's website: <http://www.onionmountaintech.com/click.php?id=8>

Spacing: Similarly, spacing between character, words, lines of text and in margins can impact a reader's ability to more easily access print and should be a personal choice or one demonstrated and presented to learners.

Don't underestimate the importance of highlighting key text in a meaningful way, such as larger text font, underlining, bold and highlight, again a personal preference. Find additional resources from the British Dyslexia Association: <http://www.bdadyslexia.org.uk/about-dyslexia/further-information/dyslexia-style-guide.html>

Images: Alternative formats of text may also be considered, such as crystallizing the important information into a mini-book (pocket mod) or table where graphic or picture supports may play a bigger role. The use of graphics and images cannot be stressed enough in increasing comprehension and retention of concepts and information for those with that particular learning preference. The Internet readily provides a source of images, graphics and video supports for most curricular topics. Additionally, the increased popularity of graphic novels emphasizes the role comic strip generators (such as bitstrips.com) can play in



Spacing can have an impact on readability.

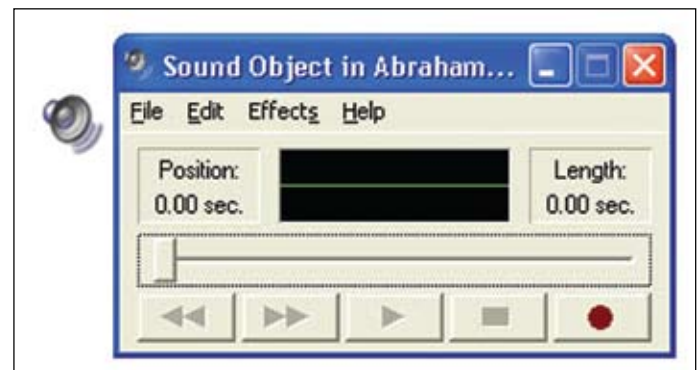
curricular topics. These can be teacher- or student-made and often help learners who are creative, yet feel they are limited in talent, to make a statement demonstrating and summarizing their knowledge of the subject at hand. Video support of text can be found on many textbook publishers' websites, YouTube, and TeacherTube.

AUDITORY

Presenting learners with the ability to listen to curricular material can increase engagement and comprehension, particularly when the learner's auditory comprehension levels are taken into consideration. This can be accomplished in a variety of ways. The text, or portions of the text, can be read or paraphrased and made available through yet another disappearing Microsoft Tool.



Color changes can make a difference!



Some versions of Microsoft Word offer the ability to Insert Voice Recordings as text objects.

One of Mr. Lee's favorite tools is to insert voice comments into MS Word documents.

Learners can listen to Mr. Lee or other students discuss the curricular topic. There are a variety of free text-to-speech tools available, but the personal touch can also be added by voice recordings made with a free open source, cross-platform software for recording and editing sounds called Audacity (<http://audacity.sourceforge.net/>). ReadPlease is a text-to-speech software for Windows-based operating systems: <http://readplease.com/>

ONE STOP SHOP:

Book Builder from CAST is a free website that can be used to create, share, publish and read digital books that engage and support diverse learners according to their individual needs, interests and skills. This site offers a library of over 3,000 books and resources for creating electronic books that are enhanced with visual supports, personal voice recordings and other audi-



Sample Book Builder Publication: Faucet Facts: the True Story of Where Water Comes From. <http://bookbuilder.cast.org/>



Wizard guide for Photo Story 3 for Windows, a photo presentation program.

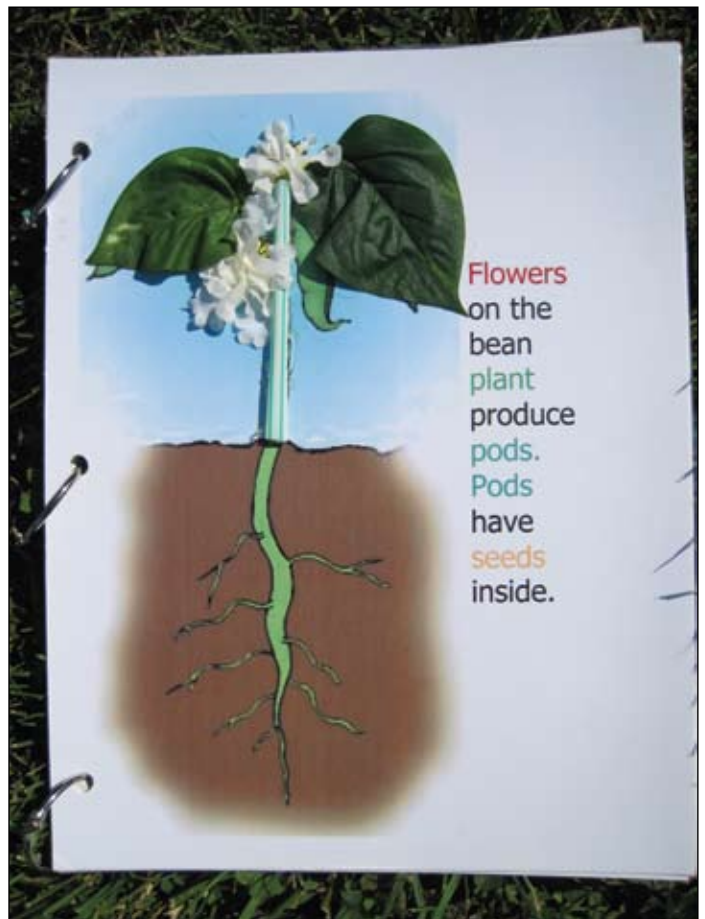
tory supports, as well as a glossary, read-aloud and translation features. Many helpful resources and tips are also provided in detailed guidance of where to find supports and how to include and cite them. These creations can be shared with the public or kept for private use and downloaded for use off-line.

PhotoStory: A little-known free download available from Microsoft is PhotoStory, a photo presentation program for Windows. A wizard leads one through the process of dragging and arranging photos, providing custom narration and captions. One can also add transitions, zooms, pans, audio soundtracks and/or custom auto-generated music. The result can be exported as a movie file and become an engaging and personalized slideshow with a soundtrack.

TACTILE

One should not forget the role that tactile input can have on representation, comprehension and expression. Books can be adapted with removable images to manipulate, as well as tactile supports to enhance the learning experience.

The result of Mr. Lee's efforts is that everyone learns and benefits from text. They just do not do it in the same way. Learners in Mr. Lee's class participate because they have been given access to information and the tools they need to be successful. Mr. Lee uses instructional strategies based on the principles of UDL



Tactile adaptations to curricular material.

supporting learner engagement and accommodates his learners by changes in materials and/or procedures. Mr. Lee presents in multiple ways, using many tools he already has, including MSWord and Internet resources. He allows learners to access and express what they know in a variety of ways and does not relegate them to the back of the room with "busy work."

Mr. Lee has chosen to be an agent of change in his own classroom, using a process called cognitive rescaling. He does this by keeping abreast of current technology trends.

EDUCATORS CAN AND SHOULD HONOR THEIR PREFERRED LEARNING STYLES BY:

- Choosing to visit the National Educational Technology Standards (NETS) website often. The NETS are widely recognized standards for learning, teaching and leading in the digital age and are adopted worldwide.
- Attending workshops offered by school districts.
- Participating in listservs to broaden one's perspective and to gain from and lend support to other educators.
- Attending at least one educational conference a year.
- Advocating for all learners by making the curriculum changes needed to access information in the classroom.
- Participating in school districts' curriculum committees to have a say in the decision-making process when it comes to textbook adoption.
- Making contact with textbook publishers and software developers about features that would assist all learners.
- Contacting Microsoft to urge the restoration of key UDL inclusion tools in newer versions of the Office Suite.

RESOURCES

A quick one-page tutorial of all MSWord tools and other rescaling tools cited here are provided via the resource document available at www.bit.ly/rescale

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KAREN DIETRICK, Karen has been in education for 20 years. She began her teaching career in general education (in a bilingual school) and moved to special education for the majority of her teaching years. She has worked in California, Washington State and Virginia, as she moved with her husband and his Naval career. She was the founding Assistive Technology Coordinator for the Oak Harbor Schools in WA, before moving to Northern Virginia and joining the Loudoun County Public Schools Assistive Technology Team. Karen has been a full time AT practitioner for the past eight years. Karen lives in Leesburg, VA with her husband and two children.

Bytes of Learning

By Karen Dietrick

Technology integration is not a new concept; it has been a part of the educational system for some time. According to the National Center for Educational Statistics, technology integration is the "incorporation of technology resources and technology-based practices into the daily routines, work and management of schools." With technology flooding our lives, this would seem to be an easy task to accomplish and yet, for many educators, it is daunting.

The Assistive Technology Team in Loudoun County Public Schools has played an integral part in technology integration training. The team has provided after school workshops, trainings on teacher work days and even online courses to help teachers learn to use the technologies they have available to them. Over the course of our trainings, we have found many educators are still overwhelmed, even with hands on workshops, and need just one BYTE of technology at a time.

We always thought hands-on workshops were the best way to teach technology to educators. They observe and listen to instructions and then immediately have an opportunity to try it out and ask questions as they perform the task. However, many of our workshops included six or eight tools and/or features to learn. For some educators, this worked fine, but for many, we learned over time, this was too many new tools at once.

What has evolved is a six-week workshop with one to two skills per week. Teachers come to the workshop for an hour to learn something new. Then they can leave and prac-

tice the skill on their own or stay for another hour to practice, the choice is theirs. We have found that about half the teachers remain for the second hour to practice their new skills right away.

Session one begins with creating folders on the desktop, creating Avery labels (to use on paper file folders) and creating data sheets they can use in the classroom. We teach them how to save the data sheet as a template so that they can reuse it, and we teach them to use the PrntScrn key to capture an image and modify it to fit their needs. These beginning skills teach organization more than anything, which helps the teachers get ready to learn the next skills.

Session two is all about images. The teachers learn to take digital photos, upload them to a folder on their computer and then place them into Word documents and PowerPoint presentations. They learn how to work with the picture tools to crop and resize an image. Additionally, they learn to add captions to photos, which are needed for documentation purposes. A number of workshops have been developed in our district to assist teachers in creating digital portfolios to document student progress or to use as alternate assessments for state testing. PowerPoint is a great tool for creating portfolios; the photo album tool makes it so easy and everyone has access to it.

During the third session, the participants explore alternate forms of instruction through work tasks, file folder games and foldable activities. These hands-

on teaching tools are powerful learning aids for some of our students. The instructor brings examples and shares many resources available on websites. Although this is not technology per se, many of these tasks can be made with PowerPoint, and data sheets are needed to document student progress.

Session four is all about audio files. We teach participants to record an audio file in Word and in Audacity, a free audio editing tool. This is a simple way to incorporate technology into the classroom by having students record their ideas before they write or answer simple comprehension questions. Students can then e-mail their document to their teachers with their audio recording in it. Teachers can use this same audio recording technology for reading assessments. They can have a text document at a certain reading level and have the student record their voice as they read it. The student can save the document to the teacher's drive or e-mail it to the teacher to grade at a later time. This is a great documentation tool, as now you have the text that can be marked up with miscues and errors, along with an audio sample of the student reading. What powerful documentation for parents! This session also instructs teachers in how to incorporate audio into PowerPoint, as a part of the PowerPoint or as a separate file linked to the slide show.

The fifth session is all about video. Participants bring a digital camera and learn to take video with it. They upload the videos and learn to edit them in Windows Movie Maker, available on everyone's computer.

The final step is to place the videos into a PowerPoint. Video is a powerful way to demonstrate progress or to display how to do something with a student. Along with digital portfolios for progress documentation, we have worked with educators to create transition portfolios to go with a student from one environment to another. As a student moves to a new school or a new case manager within the school, videos can be great tools to assist new teachers in getting to know the student.

Some students have also created their own transition portfolios to share with teachers. They type their accommodations into a PowerPoint and explain why they need that accommodation, how it helps them and when they will use it. Students can use this transition portfolio as an introduction to their teachers as they go from middle school to high school or even as they encounter new teachers within the same school. Some post high school students are using these PowerPoint portfolios to introduce themselves to prospective employers, as well as to showcase their job skills.

The sixth session of the class is a showcase of what teachers have learned. They present, to the session attendees, some of the ways they have integrated the skills they have learned within their classrooms. They display folders with photos, movies and documents. They show a PowerPoint of a student performing a task in their classroom and show how they used photos to make a study guide for their students. The possibilities are endless; the ideas are incredible. By learning a few new features of Microsoft Word or PowerPoint, teachers are integrating technology into their daily practices and encouraging their students to use the same tools in their learning.

Below are some tutorial worksheets created to teach the skills in this workshop. The TTAC online workshops are Web shops created by the author to go along with these tools.

- <http://bit.ly/pptphoto>
- <http://bit.ly/audioPPT>
- <http://bit.ly/videoPPT>
- <http://bit.ly/quickrecord>
- <http://bit.ly/recordword>

TTAC Online Workshops Microsoft Office


Tools

- <http://bit.ly/recordaudacity>
- <http://bit.ly/ImagesWord>
- <http://bit.ly/ImagesWord>
- <http://bit.ly/WordTemplate>
- <http://bit.ly/digitalportfoliopage> ■

“

So, the next time you are creating a workshop for the educators in your district, you may want to include ten new ideas to help them work smarter. Consider expanding the workshop to more than one class session and break the workshop into smaller, more manageable, Bytes of Learning.





Tools for Success
Assistive Technology

Audio Reinforcement
Insert an Audio recording within a MS Word 07 Document
<http://tinyurl.com/lcuavv>


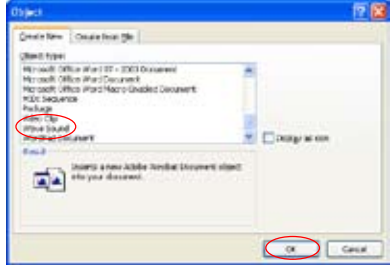
Tool Summary
MS Word 07 allows a user to insert a customized audio recording directly within a Word Processing document.




Benefits to Students

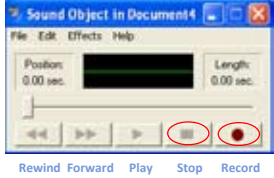
- Students can record their ideas as a pre-writing activity.
- Students can provide responses on worksheets, assessments, etc. in audio form instead of typed or written form.
- Teachers can place audio prompts or provide text-to-speech on interactive worksheets, assessments, etc.


1. Within your document, place the cursor where you wish to insert an audio recording.
2. Click on the **Insert** tab on the MS Word ribbon.
3. Select **Object** within the Text Group.
4. Select **Wave Sound** as the Object Type beneath the Create New Tab.
5. Select **OK**.


The Sound Recorder will appear. Use a microphone plugged into the computer's microphone jack to record your voice.

6. Select the round, red **Record** button
7. Speak into the microphone
8. Select the square **Stop** button when you are finished recording. By default, you will have 60 seconds of record time. If you need additional time, simply press **Record** again and the new recording will be added to the first recording.
9. You can click on the **Play** button to listen to your recording. Re-record if needed by Choosing **File** → **New**. Selecting **Record** again will add to the existing recording; not replace it.
10. When you are finished, click the red Close button  or just click back into the Word document.
11. An audio icon  is now present within the document. Double-click on the icon to play the recording.
12. To edit the recording, right click on the audio icon  and choose **Sound Recorder Document Object** → **Edit** and the Sound Recorder will appear for re-recording.







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Budget-Friendly Visual Cues and Lite Tech

By Lori Dahlquist and Amy Koch

Due to the increasing number of students we need to serve and the lack of funding, we need to use technology that is versatile, easy to use and budget friendly. No one can argue that technology allows children with a variety of disabilities to become more actively involved in their school environment. What can be surprising to some is that it can be done effectively using relatively simple technology.

For technology to be successful it must be simple to operate and practical for the environment in which it is going to be used. It must also be used frequently and consistently. There is no point to spending thousands of dollars on technology if it is not appropriate and/or functional for the environment.

Technology features we find most valuable when creating activities include:

- Sequential messaging
- Random messaging
- Multiple messages
- External switch jacks
- Toy jack
- Digitized speech

Communication aids offer synthesized speech (computer generated), digitized speech (real-recorded voice) or both. We have found digitized speech to be very useful. The advantages are:

- Recording with appropriate intonation and inflection

- Using age-appropriate voices
- Using gender-appropriate voices
- Recording singing
- Recording sound effects and music
- Changing messages quickly and easily
- Listening partners are more familiar with this type of speech



The Lex communication device was paired with TalkingMyWay Object Communication Cards to develop a visual schedule that includes objects and symbols.



The VoicePal 8 and SwitchBoard were combined with real-photo flashcards and miniature objects to create a matching activity.

Consider combining all of these features into activities that can accommodate individual students, groups of students with multiple needs and entire classrooms. Applications should encompass schedules, center time, leisure, recess, literacy, activities of daily living, communication between home and school, basic communication, community involvement and many others. Try to use activities that occur daily and naturally within the environment. We want to provide as many communication interactions as possible. For example, circle time can provide many opportunities for communication, including:

- Greetings
- Roll call
- Schedule
- Songs
- Calendar
- Lunch and snack menu
- Show and tell
- Current events

The use of visual cues cannot be stressed enough. To understand the significance of visual cues, we must look at the breakdown of communication into its main components: 55 percent visual (gestures, facial expressions, body movement, objects), 37 percent vocal (intonation, rate, volume, intensity), and seven percent verbal (words spoken) (Hodgdon, L. A.). As you can see, more than half of communication is dependent upon visual cues. Visual cueing itself follows a developmental progression, starting with objects and eventually transitioning into text (Beukelman, D. & Mirenda, R.). Developmentally appropriate visual cues are critical to the success of any assistive technology application. For example, a child who can identify objects will have greater difficulty with assistive technology that uses only line drawings. We have found it useful to familiarize individuals

with the next developmentally appropriate cue by pairing visual cues together within an activity.

The application of technology and visual cues in the classroom for children with disabilities is only limited by your imagination! The goal is for users to become active participants in functional activities that will expand their social and educational opportunities. Best of all, you can often use activities, books, objects and technology you already own. Some of the most effective activities are those with easily recognizable and reproducible visual cues or ones that occur naturally and often at home, school, work or in the community. When possible, it is ideal to promote interaction with family, peers and community members. In addition, these activities should reinforce communication and the use of technology, as well as literacy development.

Sometimes people exclude the use of appropriate visual cues, especially objects, because they do not believe objects are readily available and are hard to organize into functional activities. We have found some solutions to these issues that are practical, affordable and easy to implement.

Here are some great places to find objects:

- Dollar stores
- Dollar bins
- Party stores/party aisles
- Craft Stores/craft aisles
- Teacher supply stores
- Fast food establishments
- Thrift stores
- Garage sales

When looking for visual and tactile cues, think outside the box! We have repurposed many common items into functional cues:

- Miniature cars, trucks and other vehicles



During a visit to the dollar store, we found a gift bag, puppet, coozie, dust mitt, sock, lunch bag and a book to use with Pal Pad switches.



The object (spider) was a fun way to prompt the use of the Sequencer during story time.



A dollar-store prank became a great interactive activity when messages (e.g., Did you do that? What happened? You're in trouble!) played on the Randomizer.

- Fast food containers, candy wrappers and other food containers
- Ice packs come in many shapes and sizes (often with popular characters)
- Squeeze toys
- Puzzle pieces
- Family photos
- Plates (plastic or paper)
- Placemats
- Posters
- Greeting cards
- Junk mail
- Menus
- Trading cards
- Folders
- Gifts bags
- Socks
- Foam cutouts
- Stuffed toys
- Wooden cutouts
- Empty bubble bath bottles
- Cookie cutters
- Flashcards
- Doll clothes and accessories
- Magnets
- Scrapbooking stickers
- Erasers
- Play food
- Ice packs
- Mouse pads
- Sponges
- Car wash mitts
- Dust mitts

A few key organization setups of visual cues and technology will make incorporating activities into everyday life more practical. Look for combinations that are functional for multiple users, multiple uses and, if possible, make them permanent.

Throughout our years of working in the field of augmentative communication and assistive technology, the most common question asked is “now that I have the technology, what do I do with it?” Our answer is to incorporate the technology into the activities you are already doing. We want technology to get used! Adaptation has prided itself on developing ideas for teachers, therapists and families that are easy to follow and spark inspiration for individuals to create their own applications. Our engineer, speech therapist and educator have compiled a collection of functional activities and tips that covers a broad range of topics. Some of them can be found on our website or many more in our newest resource book, *Adapt This...*

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alternative communication: Supporting children and adults with complex communication needs (3rd ed.), Baltimore: Paul H. Brookes.

Hodgdon, L.A. (2011). *Visual strategies for improving communication: Practical supports for autism spectrum disorder*. Troy, MI: QuirkRoberts Publishing.

All products listed in the article are available through Adaptation, Inc.

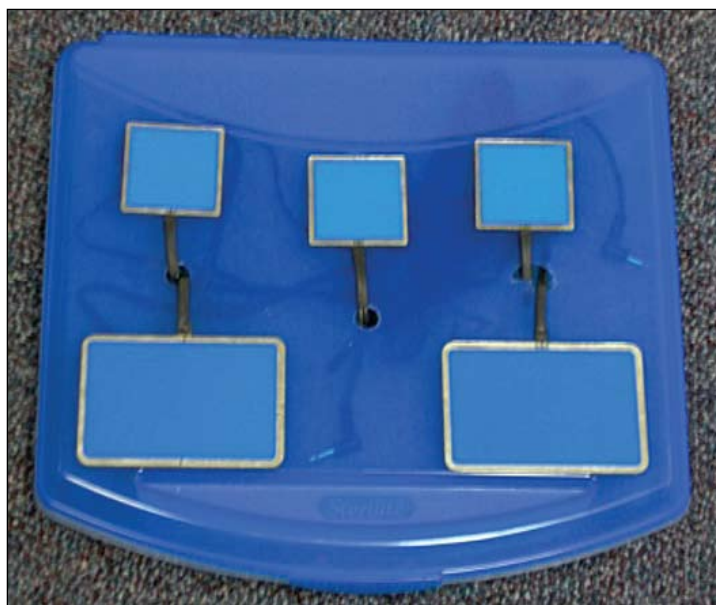
Lex (\$169)

TalkingMyWay Object Communication System (\$299)

- VoicePal 8 (\$199)
- SwitchBoard (\$174)
- Pal Pads (\$41 - \$49)
- Sequencer (\$169)
- Randomizer (\$159)
- Medley (\$299)
- HandiBoard (\$44)
- Adapt This... (\$54) ■



A combination of Pal Pads and the Medley (positioned under the HandiBoard) were used along with a variety of visual cues to make a multi-use activity.



Picture 7: Plastic cases can be drilled to accommodate switch cords. Cords and device can be placed inside.



Here, a bake sale activity was made with a case and a variety of visual cues.



VALERIE HOEHNKE is a speech language pathologist who has worked with individuals with complex communication needs. She works full-time for Milwaukee Public Schools and is teaching Augmentative Alternative Communication undergraduate/graduate course at the University of Wisconsin-Whitewater. She has presented on low-tech communication and visual strategies at numerous conferences.

Low Tech Communication: An Integral Part of a Multi-Modality System

By Valerie Hoehnke

Everyone uses a multi-modality communication system. Our system may include spoken language, gestures, pointing, body language and facial expression. Some individuals also include sign language or augmentative alternative communication (AAC) in their multi-modality system. When an individual is given augmentative alternative communication, it does not replace the communication system they already have, but augments their current communication system. If an AAC user obtains a new high-tech device, it also augments their communication system and does not replace other means of communicating. Low-tech solutions are not tossed aside because the shiny new device has arrived.

In today's world, there are computers, tablets, iPads and smart phones. We all want the newest and best technology. We think high tech will solve all communication problems, negate weaknesses in our communication system and allow us to express our wants/needs. Let's take a look at a few situations that could be difficult for the augmentative alternative communicator.

Scenario 1: At the market and the battery dies in the AAC device.

Scenario 2: I am taking an art class. I love to work with clay. I know I will need to ask questions about the project and if I am doing it correctly. If

I use my AAC device, I will get clay all over it.

Scenario 3: I have swim class today. I love the freedom the pool gives me. I have a substitute caregiver today. How will they know what I need in the pool? I can't take my AAC device in the pool.

Scenario 4: I am moving today. They are asking me where to put the boxes and furniture. It takes me one to five minutes to produce a response to each of their inquiries.

In all four scenarios, a no-tech or low-tech communication system would be the answer. For the purpose of this article, no-tech refers to any communication system that does not require a power source. Choice boards, communication picture boards or communication wallets using pictures are examples of no-tech communication. Low-tech refers to any communication system that requires a source of power, is very easy to program, no computer chip, portable, simple in design, easily implemented/used, has static messages and is low in cost. Static messages are stationary and unchanging. Items are fixed in a particular location and do not change. To change vocabulary, you must change the page, pictures or overlay (display). One example of a low-tech system is a Go Talk 9+ from Attainment Corporation (photo 1). The Go Talk 9+ has nine messages on five different levels. Plus, it has three messages that remain

the same on all five levels. These messages are often general comments or questions. The AAC user has 48 messages that can be shared with the Go Talk 9+.

No-tech and low-tech communication systems require both the user and their communication partner to be actively involved in the interaction. The partner must watch the no-tech system to read the message to complete the communication link. The communication partner may need to assist with positioning the AAC system or assisting with a head pointer or mouth stick. Communication partners are needed to change the overlay (display) and /or level of the device. The listener is also needed to record the messages or assist with recording on a low-tech device.

To access no-tech and low-tech systems, direct selection



Photo 1: Go Talk 9+ by Attainment.

can be used, pointing with a finger or other body part or using a head pointer, mouth stick or a laser light. The laser light could be held in the hand, attached to glasses or placed on a hat. When the light is directed at a picture or word, the message is communicated. Another way to access no-tech and low-tech is with the use of listener scanning. The communication partner scans the vocabulary on the system by pointing one by one or group by group. If group scanning is used, once the group is selected, then smaller groups can be scanned, and when the final group is chosen, scanning is completed one by one. The AAC user indicates a choice by blinking, nodding or vocalizing.

No-tech and low-tech systems are often used as backup systems to the high-tech device. Backup systems are necessary because, as we all know, technology breaks down. The backup system usually contains the same vocabulary, layout and organization as the augmentative alternative communication device. One way to achieve this is to print out the pages of vocabulary or dynamic screens that are frequently used and bind them together (photo 2). Now you have an exact match to the high-tech system. The AAC user does not have to learn a new system or search for the words he or she wants to say. This no-tech solution was simple and easily implemented by the AAC user.

No-tech and low-tech systems are not just for use as a backup. Low-tech can be used as a primary form of communication. One form of no-tech is specialty communication boards for specific situations or environments, especially where a high-tech device may interfere with the event or activity. Placing a picture communication board with computer related vocabulary on a mouse pad next to a computer gives the AAC user immediate access to frequently used words, comments, and questions related to computer operations.

No-tech and low-tech provide vocabulary rarely needed by user.

This vocabulary is called fringe vocabulary or supplemental vocabulary. For example, the AAC user may need messages for a hospital stay. Placing picture communication symbols on a pillowcase (photo 3) provides needed messages close at hand. The picture communication board was printed on iron-on transfer paper and then ironed on the pillowcase. Direct selection or listener scanning can be used with the pillow.

In one of the scenarios from the beginning of the article, the AAC user is going to a movie and needs vocabulary related to a movie or he wants to rent or buy a movie. One solution would be to use a DVD case and place a picture communication board in the cover. The picture communication board would have messages, such as "I'm looking for," and choices, such as "drama," "scary movie" or "new release." Comments, such as "Let's get our ticket," "I didn't like that one" or "I'm ready to check out," are needed. The AAC user can take it in the store to communicate with family and store personnel.

Another example of a specific environment in which low-tech would be appropriate is in the garden. Use a garden kneeling pad that can be found in the gardening section on any store. Create a picture communication board with vocabulary appropriate to gardening. Next, laminate the board and glue it to the garden kneeling pad. Now the AAC user can carry it with them when they go into the garden to do work.

In scenario 3, the augmentative alternative communicator is participating in a swim class at the YMCA. Use the same kneeling pad (photo 4). Create a picture communication board with vocabulary for the pool. Some examples of messages that an AAC user might use in the pool are "I want to float..." "on my back," "on my stomach," "I'm cold" and "Let's take a break." When using low-tech in a situation where it will get wet, it helps to laminate it twice. The kneeling pad floats on the water and can go with the augmenta-



Photo 2: Backup boards.



Photo 3: Pillow case.



Photo 4: Pool communication (kneeling pad).

tive alternative communication user in the pool. Another idea for a wet environment would be to use a ziplock bag. Create a picture communication board, glue it on cardboard and place

it in the ziplock bag. It can go in the bathtub with the AAC user.

A 7-year-old boy is going to the zoo with his family. He is active and likes to be on the move. Two solutions for

his augmentative alternative communication needs while at the zoo would be a T-shirt (photo 5) and a key ring of pictures. The picture communication board that is ironed on to the T-shirt (like the pillowcase) would have general vocabulary that he can use to express wants, needs, choices, protests and comments. On a key ring, individual pictures of animals that the boy and his family printed from the Internet could be laminated, have a hole punched in one corner and then be put on the ring. Now he can choose what animal to see next, identify the animal they are looking at or comment about an animal. The key ring can be attached to a belt loop on pants, a zipper pull on a jacket or through a buttonhole on the shirt. What the little boy liked the most about his low-tech solutions was that he didn't have to carry anything. His hands were free to explore the zoo.

When you are a student, a backpack is something you carry with you all the time. Whether you carry it on your back, over one shoulder or on the back of your wheelchair, the backpack is always with you. It, therefore, is an obvious tool for a low-tech solution. Place picture communication symbols on the straps of the backpack (photo 6), attach a key ring to the zipper of the backpack or put a picture communication wallet in the pocket of the backpack. Vocabulary would be specific to moving from place to place, greetings, making small talk or asking for assistance. The student can use the high-tech device once they have arrived at their destination, school, classroom or lecture hall, but while traveling by bus, walking or moving, the backpack is an effective low-tech communication solution.

Scenario 4 revolves around moving day. We have all had the experience of giving directions to the people helping us move. The AAC user wants to control the chaos of moving day. A low-tech solution for the augmentative alternative communication user could be using a Message

Mate 40 from Words + (photo 7). The Message Mate 40 could be programmed to say "in the living room," "that goes here," "can you put that downstairs?" "be careful," "that's fragile" and so on. The individual only has to push one button to say a whole phrase or give a direction. This cuts the communication link between AAC user and listener down to seconds instead of minutes.

With all the low-tech solutions shared above, the augmentative alternative communication user was involved in the vocabulary selection process and design of display. The low-tech solution takes into account the AAC user's physical, sensory, language and learning abilities. The picture communication solution is organized by frequency of use, by topics, alphabetically or by using color and should be consistent with all other augmentative alternative communication that is in the user's multi-modality system. The use of color makes the organization explicit and easier to follow. The design of low-tech communication is also easy for communication partners to use. The low-tech communication should be attractive and reflect the personality, interests and age of the augmentative alternative communication user.

Low-tech communication solutions can look very different from one another. Low-tech communication can be a backup solution to a high tech AAC device or it can be the primary form of communication. Low-tech solutions can be used all by themselves or in conjunction with mid-and high-tech communication. Low-tech communication can contain general vocabulary or fringe vocabulary. Put low-tech solutions with specific vocabulary in specific areas to be available for the AAC user. Low-tech communication can be single messages or multiple messages. It can be a single page or multiple pages of picture vocabulary. No-tech and low-tech communication is an integral part of a multi-modality communication system. ■



Photo 5: T-shirt communication.



Photo 6: Backpack communication.



Photo 7: Message Mate 40 and Message Mate 8 by Words+.



JULIET NELLIS is a certified speech pathologist in Pittsburgh, Pennsylvania. Juliet evaluates and treats clients with speech and language deficits that require AAC throughout the lifespan. Juliet was previously contracted at a partial hospital program for children with Autism ranging from 3 to 14 years of age. She is currently working with Early Intervention clients that have a variety of diagnoses. She provides services to both verbal and non-verbal children with an emphasis on increasing their expressive language abilities using technology. Juliet can be reached via email at jmnellis@gmail.com for any questions or comments.

The Foundational Steps for Developing Language Competence in AAC Speakers

By Juliet Nellis

“

Rhea Paul's (1997) three transitions of language describe how typical development of language is the same for AAC speakers. These transitions are crucial to beginner communicators in order to build language competence (Hill, 2009).

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Instructors of novice AAC users need a place to start. With beginning language learners, many instructors find it difficult to set expectations and to teach fundamental skills. All children who are learning language experience many transitions within their first five years of life, and each transition helps to facilitate a higher level of language competence. Rhea Paul's (1997) three transitions of language describe how typical development of language is the same for AAC speakers. These transitions are crucial to beginner communicators in order to build language competence (Hill, 2009).

When designing an augmentative and alternative language system for an individual, it is imperative that you consider these three transitions

of typical development. The speaker is limited to functional communication if these structures of complex language are not built into the AAC system, and this can lead to the speaker not reaching linguistic competence. Analyzing what makes up these three transitions in typical development will facilitate what is to be instructed in order for AAC speakers to achieve language competence in a developmentally appropriate order. It is important for facilitators to work within the language level of the student because the language may become too difficult if the chronological age or grade level material is targeted. Working within their zone of proximal development will promote success and maintain effective learning.

The first transition of language in typical development occurs around 12 months of age. In children who are speaking, this stage is indicated by speech babbling. The presence of speech babbling confirms that units of language are being constructed to create a foundation for complex language. What are children who are not developing speech sounds doing to create their foundation of complex language? What needs to be instructed to facilitate this learning? The illocution stage is defined as communicative intents using gestures and vocalizations to communicate. These communicative intents form into words. AAC speakers in this first stage of development need to build their communicative intents

into symbolic representation of words. These may be signs, graphic symbols or both.

The first step in instructing a beginning communicator is to observe how they are communicating spontaneously. These types of observation are considered communicative intents, and they might include gestures, joint attention gaze, turn taking and vocalizations to request, comment and acknowledge. These spontaneous opportunities can be used to facilitate symbolic word learning. In typically developing learners, vocalizations are formed into words. The same principle is used for AAC language learners; utilizing symbolic representation with a voice output system will allow the child to learn the first stage of language development.

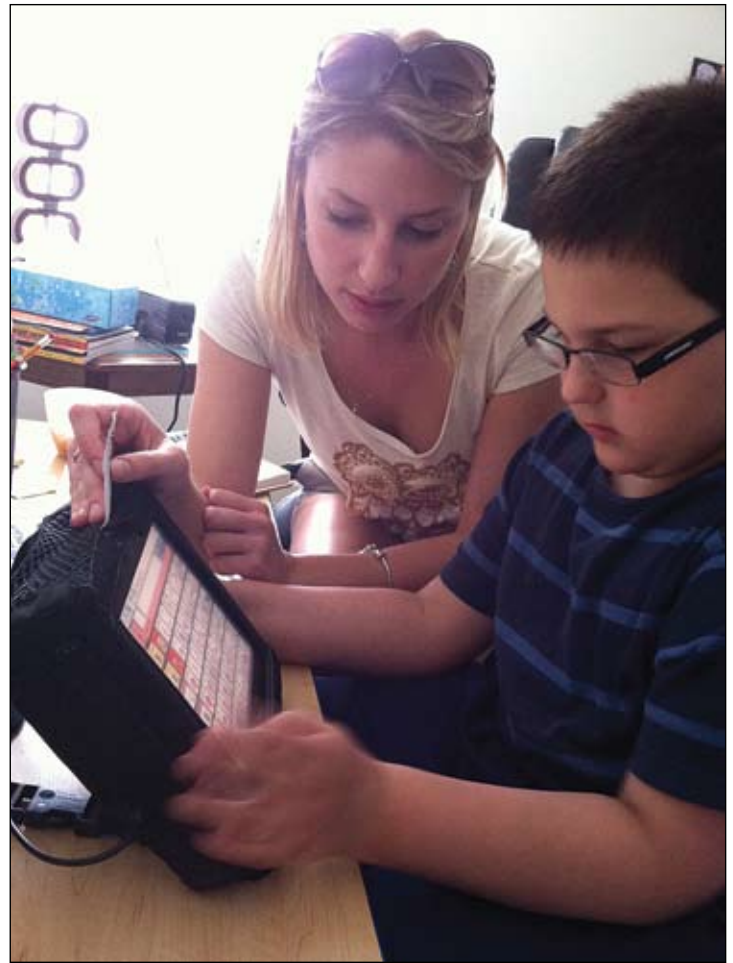
Another aspect of the first stage of language development is that typical language learners increase their frequency of expressive intents by nearly fivefold (Wetherby, et al, 1998). Individuals with severe speech impairments often have limited opportunities to express themselves. Others will predict their communicative intents and not require the individual to practice his/her expression and manipulation of vocabulary. Similar to early speaking language development, the environment needs to be structured to enrich and foster communication. It is imperative that instructors allow the student to request using words or symbolic representation of words and keep the consistency.

Some first stage language strategies using beginner vocabulary with AAC users are structured play and incidental teaching. For example, it can be fun and engaging to act out actions or verbs using the AAC system when a student is first learning those words. Allow the learner to receptively learn the words and enable them to express the meaning using the speech output system. After the student labels common verbs, a game to play is the "action man,"

a version of Simon Says. Using the AAC system, the student can express what verb the instructor is to act out, and then he or she can have fun watching the instructor act silly by performing the action. Some examples of beginner actions are run, jump, sit, eat, work, play and talk.

Incidental teaching refers to using everyday opportunities to consistently show how you can use words or vocabulary to express meaning or supplement the student's gestures and/or vocalizations. Requests are meaningful and motivating for the student, and introducing this widely used method of teaching commonly produces beneficial requests. During snack time or circle time, the student can practice simple requests, such as "cookie" or "want cookie." These periods are structured and offer opportunities to practice meaningful requests with an increased frequency.

Now that instructors have an idea of how to teach the student, they need to learn what words are appropriate for early communicators. Emerging communicators that are typically developing



Juliet with one of her students working on his communication device to build complex sentence structure.

First Core Words from Typically Developing Toddlers

I	Is
A	On
Yes/yeah	In
Want	Here
It	Out
That	Off
My	Go
You	What
More	Some
Mine	Help
The	All done/finished

initially use core words (Banajee, et al., 2003). The core vocabulary refers to the most frequently used words, as compared to extended vocabulary, which

are less frequently used words. Making core words accessible to the child using AAC interventions will foster language use. Core vocabulary words are not

activity specific and can be used throughout every environment to facilitate language into the next transition of development when children begin to acquire

syntax. The table is a representation of the first core words used by typically developing toddlers (Banajee, et al., 2003).

Activity-based vocabulary refers to the organization of vocabulary that is structured around a particular activity, such as circle time, music, art, etc. These words are typically extended vocabulary words. Keep in mind that too much extended vocabulary can become cumbersome or lost in folders when organizing vocabulary. Functional communication is promoted along with language complexity and flexibility when integrating both sets of extended and core vocabularies.

Making core vocabulary easily accessible can help early communicators learn language syntax by creating utterances and promote motor learning. Motor learning involves improving the smoothness and accuracy of movements through practice. An example of this is how people learn to text on their cell phone or type on a computer. People need a short time to learn the basics of the action, but they eventually become more efficient over a period of time and with practice. The same concept is used when achieving fast communication. If high frequency words (core vocabulary) are staying in the same location, the user can remember where they are located and communication becomes more natural. At this stage, early learners can start putting two or more words together efficiently. In turn, when communication is efficient, the student is less likely to abandon equipment and find success in their communication.

It is also important to inquire about the symbol set for individuals. Consider different styles of pictures and how concrete or salient they are for the user. Some pictures represent the meaning of words visually, whereas other sets convey more conceptual meanings of vocabulary. Fami-

lies may have different preferences and typically consider this choice an important decision. The decision about symbol sets can help include the family in decision making, and then it is the teacher's responsibility to teach the words.

The second stage of typical development occurs around 18 months of age. Rhea Paul entitles this stage as semantics to syntax. In this stage, children start to combine words to express many more complex versions of the same semantic meaning. The syntax, or word order, adds complexity to the child's utterance. For example, when a child begins to greet others using "Hi," they are communicating within stage one. When the child greets using "Hi Mommy," the child's communication has the same semantic meaning, but is moving into the second stage of development by making their utterance longer and more complex.

The last stage of typical development does not occur until the end of the preschool age when children are starting to learn phonological awareness. With speaking children, awareness of letter to phoneme correspondence grows from familiarity with the sound units of speech when they articulate sounds and learn to decode words. Children who require AAC need a way to access a phonetic alphabet to establish sound recognition and decoding. This type of alphabet does not state the letter's name, but produces the phonemic sound that the letter represents.

The first, second and third stages of language development need to be represented and facilitated on the communication device. The communication system needs to be able to grow with the child's language progression. This is important because many insurance companies will not consider another funding request for medical equipment, such as a communication device, within a five-year time period. This is

crucial when choosing a first system for AAC communicators. As the speech pathologist, make sure that the communication system can support vocabulary, morphology, syntax development and early literacy development.

The most important concept when working with individuals who require AAC is to not limit them to functional communication. Keep in mind that the user has room to grow and should be challenged to grow when working on gaining linguistic competence. Instructors start language learning at the student's language level and then work within a developmental order, moving through language stages to represent both core and extended vocabulary. Using these concepts and guidelines will promote success and future learning for the individual that requires AAC.

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SPOTLIGHT

ViewPlus Brings Accessible Information to your Fingertips

When Dr. John A. Gardner, renowned physicist, went blind at age 48 due to complications from surgery, he learned how difficult it was to access information that had previously been intuitive. Even with assistance from sighted helpers, he found that communicating in the field of solid-state physics was nearly impossible, especially since there were very few tools available for blind people to comprehend visually-oriented information, like diagrams and structured mathematics.

Today, after years of research and development, as director of the acclaimed Science Access Project at Oregon State University, Gardner has created a series of products that allow those with disabilities to overcome the very obstacles that he encountered earlier in life. His company, ViewPlus Technologies, Inc., is now recognized throughout the world as a leading innovator of assistive technology.

ViewPlus is dedicated to making a difference in people's lives across the globe. With a worldwide network of dealers, ViewPlus has been able to help low-sighted and blind citizens by designing and manufacturing custom printing solutions that provide color tactile graphics and print with Braille.

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SPOTLIGHT

Infogrip introduces new products

At Infogrip, we are always in search of new products with practical application for the special needs market. We have just come across two products that we are very excited about – a mini touchless keyboard, called the Touchfree Keyboard, and a joystick and trackball with tremor control, called n-ABLER Pro.

The Touchfree Keyboard is an exciting new find. Touchfree Keyboard requires no finger push and measures only 4.1 inches in height and 7.2 inches in width. Over the past few years we have seen light touch, compact keyboards disappear. We have been in search of a keyboard for individuals suffering from conditions like neuropathy or muscular dystrophy, and the Touchfree Keyboard is definitely a keyboard solution for many of these individuals.

Touchfree Keyboard uses two infrared beams crossing above each key label. A key stroke is made by blocking both of the crossing beams above the key label with your finger or any opaque object, such as a pencil or a non-transparent bendy-straw. Since an interrupt of the light beam causes the keystroke, no physical force or touch is required. The work required by fingers is reduced to zero in the sense of physics. The typing speed for each key is faster.

Touchfree Keyboard responds faster than a regular push-button keyboard. The speed gain is due to three factors. First, time is saved due to the lack of work required to push down keys against a spring or rubber dome underneath each push-button

key. Secondly, the key strokes respond faster; this is because for push-button keyboards, a key down response for a fraction of a second is required to make sure the key contact is made with the circuit board. This time delay is saved in the Touchfree Keyboard. The third factor is that the distance between keys of the Touchfree Keyboard are smaller than that of the push-button keys. The fingers travel less distance for the same amount of input. For someone with muscular dystrophy, carpal tunnel syndrome or arthritis in the hand or fingers, the potential speed gain can mean an increase in productivity. This may also mean a decrease in hand pain.

The n-ABLER Pro is equally a cool, much needed product. It is a computer mouse substitute available in two models, a joystick and a trackball. n-ABLER Pro requires minimal hand movement, which reduces wrist and elbow fatigue. It is specifically designed for computer users with limited hand control, motor skill difficulties, poor hand-eye-coordination, limited manual dexterity, involuntary muscle spasms and hand or wrist tremors. The symmetrical design of the device allows users to work with either hand without angling the wrist. A large, integrated hand/palm rest allows the user's posture to be more relaxed, reducing strain and tension.

The feature that really sets the n-ABLER Pro apart from the other pointing devices on the market is its anti-tremor feature. The anti-tremor feature helps the user make a smooth or straight



Touchfree Keyboard



n-ABLER Pro

line. There is a button, with three settings, positioned on the top of the device. The user can push the button to adjust or smooth the cursor movement to improve the cursor control. This feature is amazing for users that have tremors or spasms. It enables them to make fluid and efficient cursor movements, which previously have not been possible with any other pointing device.

In addition to the anti-tremor control button, n-ABLER Pro has left- and right-click buttons, double click and a drag lock button. n-ABLER Pro can be

configured for right- or left-handed operation. The cursor speed can also be controlled for anyone suffering with tremors or involuntary muscle spasms and for older people with movement impairment. The joystick includes a soft ball and T-Bar handles for users that need alternative joystick grips.

PRODUCT INFORMATION

TouchFree Keyboard, \$99; n-ABLER Pro, \$350 trackball version, \$450 for joystick version. For more information visit <www.infogrip.com>. ■



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Registration Received	On or Before June 30	July 1 - September 6	September 7 - September 27	September 28 - Onsite
Standard Rate	\$425	\$455	\$495	\$525
Group Discount - 5 or more	Groups 5+ Deduct \$30	Groups 5+ Deduct \$30	Groups 5+ Deduct \$30	Groups 5+ Deduct \$30
Group Discount - 8 or more	Groups 8+ Deduct \$50	Groups 8+ Deduct \$50	Groups 8+ Deduct \$50	Groups 8+ Deduct \$50
<i>All group registrations must be received at the same time.</i>				
Parent Rate (A letter describing your child's disability must accompany registration)				\$275
Full-time Student Rate (Proof of full-time student status must accompany registration)				\$275
Presenter Rate				\$325
Exhibitor Rate				\$325

Single Day and Exhibit Hall Only Registration

	Price
Thursday Only - October 18	\$275
Friday Only - October 19	\$125
Exhibit Hall Only - Tuesday evening through Friday, October 16-19	\$175

Preconference Workshops - Monday and Tuesday, October 15-16, 2012

	Price
<i>(Includes Preview of Exhibits – Tuesday, October 16, 5:30 pm - 8:00 pm)</i>	
Monday, October 15 (Some preconference workshops carry an additional fee for materials)	\$275
Tuesday, October 16 (Some preconference workshops carry an additional fee for materials)	\$275
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A limited number of scholarships are available for persons with disabilities or parents/guardians of children with disabilities. To apply, complete a conference registration form, indicating your scholarship request. Submit the form and attach a letter describing your/your child's disability and telling us why you would like to attend the conference. Applicants will receive written notification of acceptance or denial.

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PC-1 Multi-Modal Communication Strategies for Children Who Have Complex Communication Needs - PDD Communication Books (Two- Day Introductory Workshop)

Linda J. Burkhart, B.S., is a Special Educator/ Augmentative Communication Specialist/ Technology Integration Specialist in private practice, Eldersburg, MD, and Dale Gardner Fox, M.S., RPT, is an Assistive Technology Consultant, Hampshire Educational Collaborative, CCATT, Northampton, MA.

MONDAY 8:00 AM - 4:30 PM

PC-2 Beyond Wants and Needs: Supporting Social Interactions Between Students with Autism and Their Peers

Pat Miranda, Ph.D., is a Professor in the Dept. of Educational and Counseling Psychology and Special Education at the University of British Columbia, Vancouver, British Columbia, Canada.

PC-3 iCreate: Customizing iPad Content for Students with Special Needs

Eric Sailors, M.A., CCC-SLP, is a Speech Language Pathologist, Eric Sailors LLC, San Diego, CA; Luis Perez, M.Ed., is a Technical Specialist and Graduate Assistant, iTeach Initiative, University of South Florida, College of Education, Tampa, FL; and Cathy Kingeter, M.A., is the Director of Sales and Marketing, Origin Instruments Corp., Grand Prairie, TX.

PC-4 The Challenges of Developing Consistency of Access to AT

Karen M. Kangas, OTR/L, ATP, is an Occupational Therapist, AT Specialist, Seating and Mobility Specialist and Clinical Educator in private practice, Karen M. Kangas OTR/L, Shamokin, PA.

PC-5 Mastering the Cloud: Moving Content Between iPads and Other Classroom Technologies

Dan Herlihy is an Assistive Technology/ Technology Resource Specialist, Connective Technology Solutions, Inc., Hoosick, NY, and Liz Medvetz is an Applications Training and Support Specialist, University at Albany, Albany, NY.

PC-6 Jumpstarting AAC: From Light Tech to iPad to Devices

Pati King DeBaun, M.S., is a Speech Language Pathologist/Consultant specializing in assistive technology, Creative Communicating, Park City, UT; Sue Alderfer, M.S., is a Speech Language Pathologist and Assistive Technology Training Consultant, Montgomery County Intermediate Unit,

Perkiomenville, PA; and Rachael Skinner, B.A., QCS, is the Director, Standing Tall, New York, NY.

PC-7 Effectively Implementing iPads in Schools: Building on Lessons From Across the Country

David Niemeijer, Ph.D., is the CEO, AssistiveWare, Amsterdam, Netherlands; Mark Coppin, B.S., is an Apple Distinguished Educator and the Director of Assistive Technology, Anne Carlsen Center for Children, Jamestown, ND; Bonnie Johnson, M.S., is a Speech Language Pathologist and AT Consultant for Eden Prairie Schools, Eden Prairie, MN; Vicki Haddix, M.S., is a Speech Language Pathologist and AT Specialist, Boston Public Schools, Boston, MA; Melissa Cantwell, M.S., is a Structured Communication Center Teacher, Hough Elementary School, Vancouver, WA; and Kathryn McLachlan, M.S., is a Speech Language Pathologist, Anoka Hennepin School District, Anoka, MN.

PC-8 Quantifying the Benefits of Assistive Technology and Universal Design for Learning Interventions

Dave L. Edyburn, Ph.D., is a Professor, Dept. of Exceptional Education, University of Wisconsin-Milwaukee, Milwaukee, WI.

PC-9 From Board Books to Story Apps and Everything in Between

Elizabeth (Libby) S. Rush, M.A., CCC-SLP, CPM, is an AAC Consultant in private practice, Durham, NC; Celeste Helling, M.A., CCC-SLP, ATP, is a Speech Language Pathologist, North Carolina Assistive Technology Program, Charlotte, NC; Lori Dahlquist, M.A., is the Speech/Education Coordinator, Adaptation, Inc., Sioux Falls, SD; and Phyl T. Macomber, M.S., ATP, retired SLP, is a Curriculum Strategist and AT Specialist, Make a Difference, Inc., West Windsor, VT.

PC-10 Using Assistive Technology with Young Children: Fun, Functional and Family Friendly

Karen M. Casey, M.A., CCC-SLP, is an AT Consultant, Durham Children's Developmental Services Agency, Durham, NC.

TUESDAY 8:00 AM - 4:30 PM

PC-11 Advanced Course in Cortical Visual Impairment

Christine Roman Lantzy, Ph.D., Allison Park, PA, is an Educational/CVI Consultant, the Director, Pediatric View, The Western Pennsylvania Hospital, and the CVI Project Leader, The American Printing House for the Blind and The Western Pennsylvania School for Blind Children.

PC-12 Implementing Proloquo2Go 2: How to Customize Vocabulary and Teach AAC Use

David Niemeijer, Ph.D., is the CEO, AssistiveWare, Amsterdam, Netherlands; Jennifer Marden, M.S., M.A., is a Speech Language Pathologist, Technically Speaking, Roslindale, MA; Vicki Haddix, M.S., is a Speech Language Pathologist and AT Specialist, Boston Public Schools, Boston, MA; Mark Coppin, B.S., is an Apple Distinguished Educator and the Director of Assistive Technology, Anne Carlsen Center for Children, Jamestown, ND; Cathy Kingeter, M.A., is the Director of Sales and Marketing, Origin Instruments Corp., Grand Prairie, TX; Pam Harris, ATACP, is a Customer Support Team Member and Parent, AssistiveWare, Winthrop Harbor, IL; and Anne Verhulp, B.A., is a Marketing and Customer Support Team Member, AssistiveWare, Amsterdam, Netherlands.

PC-13 The Switch is Not the Activity: Using Electronic Switch Access for Transparency to AT Use for Those Students with Complex Bodies: A Hands- On Lab

Karen M. Kangas, OTR/L, ATP, is an Occupational Therapist, AT Specialist, Seating and Mobility Specialist and Clinical Educator in private practice, Karen M. Kangas OTR/L, Shamokin, PA, and Lisa Rotelli, A.S. in Physical Therapy, is an Educational Consultant, Adaptive Switch Labs, Inc., Spicewood, TX.

PC-14 Integrating the iPad/iPod in Classrooms: From Alternative Access to Struggling Learners

Pati King DeBaun, M.S., is a Speech Language Pathologist/Consultant specializing in assistive technology, Creative Communicating, Park City, UT and Dan Herlihy is an Assistive Technology/Technology Resource Specialist, Connective Technology Solutions, Inc., Hoosick, NY.

PC-15 Free and Low Cost Technology to Facilitate Access, Differentiate Learning and Implement UDL

Paul Hamilton, M.Ed., is an Assistive Technology Consultant, SET-BC (Special Education Technology), Courtenay, British Columbia, Canada.

PC-16 Rett Syndrome: Communication and Learning (Tots to Women)

Susan Norwell, M.A., is an Educational Specialist in private practice/Focused Learning Solutions and Instructor, Northeastern Illinois University, Buffalo Grove, IL, and Judy Lariviere, M.Ed., OTR/L, is a Senior Occupational Therapist/Communication Specialist, Children's Hospital and Research Center (Katie's Clinic for Rett Syndrome), Rancho Cordova, CA.

PC-17 Reading and Writing Accommodations: Assessment, Tools and Professional Development

Denise C. DeCoste, Ed.D., is an Assistive Technology Specialist and Education Consultant in private practice, Chevy Chase, MD, and Linda Bastiani Wilson, MA., Ed., is the High Incidence Accessible Technology Team Leader, Montgomery County Public Schools, Bethesda, MD.

PC-18 i (Need To) Customize

Judith P. Sweeney, M.A. Special Education, is an AT Consultant and the President, Onion Mountain Technology, Inc., Canton, CT.

PC-19 "Help! I'm an AT Specialist and I Can't Get Up!" Creating Manageable School- Based AT Services

Keri Huddleston, M.A., CCC-SLP, is an Assistive Technology Specialist, Moira Soulia, M.S., CCC-SLP, is an Assistive Technology Specialist, and Teru Langsdale, M.S., CCC-SLP, is a Special Education Consultant, all, Washoe County School District, Reno, NV.

PC-20 Secrets of the Balanced Literacy Club: Apps Included!

Caroline Musselwhite, Ed.D., CCC-SLP, is an Assistive Technology Consultant and Author, AAC Intervention, Litchfield Park, AZ; Deanna K. Wagner, M.S., CCC-CLP, is an Assistive Technology Specialist, Madison Elementary School District, Phoenix, AZ; Laurel Richardson Buell, M.A.Ed., OTR, is an Occupational Therapist/AT Specialist, Southwest Human Development, Phoenix, AZ; Jennifer Perry, M.A., is a Special Education Teacher, Independence High School, Glendale Union High School District, Glendale, AZ; and Patty Ashby, MNS, CCC-SLP, is a Speech Language Pathologist and AT Specialist, Southwest Human Development, Phoenix, AZ.

PC-21 Enhancing the Universally Designed Classroom for Students with Autism with (Free or Inexpensive) Cloud- Based Tools

Mo Buti, M.Ed., is a Special Education Administrator: Placement, Reintegration and Special Projects for Children with Autism and Low Incidence, Chicago Public Schools, Chicago, IL, and Katharina I. Boser, Ph.D., is the Technology Coordinator, Lower School, Glenelg Country School, Ellicott, MD.

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ACCESSIBLE INSTRUCTIONAL MATERIAL

Accessible eBooks for the iPad

Accessible Instructional Materials: Who Needs Them and Where Can We Get Them?

Accessible Science Equipment and Labs

AIMing for Achievement: What's New from the National AIM Center

Aropability: Accessible Robot Programming for Students with Disabilities

Caption YouTube Videos for Increased Accessibility and Traffic

Creating Books for the iPad: The \$\$, the Features and the Important Variables

Dan and Mo: Wild & Free!

From iWrite to iPad: Creating Accessible Classroom Materials for Everyone

Introducing the eMapper: A New Tool for Adapting ePages to Meet the Learning Needs of Students with Autism Spectrum Disorder

Made the APPSolute Fit: Finding and Selecting Apps

No Money? No Worries! Free and Low Cost Assistive Technology Resources for Student Communication and Literacy Goals (Two Block Session)

Protocol for Accommodations in Reading: A New Tool for Making Accommodation Decisions

QR Codes, Mobile Devices and UDL: Transform Your Instructional Practices!

So We Have Bookshare, Now What? Tips for Classroom Implementation (Two Block Session)

Switch Access and the iPad: Building Early Literacy and Language Skills (Two Block Session)

Time-Saving Strategies for

Making High Quality DAISY, Large Print, MP3 and Braille Unique and News-2-You ... to Go?!

ASSESSMENT

AAC Evaluation Genie: Building a Language Representation Model in AAC Assessment

Assessing the Early Literacy Skills of Students with Significant Intellectual, Communication and Physical Disabilities (Two Block Session)

CLICKS: Strategies for Identifying, Developing and Measuring Intentional Switch Activation (Two Block Session)

Computer Access: Tools for Equalizing the Playing Field (Two Block Session)

Evaluating the iPad as a Communication Device: A Journey Not for the Faint-Hearted

Growing with AAC: Choosing Dynamic Goals

Lightening the AAC Toolkit Load: iOS Devices in Assessments

Switch Assessment for Type and Location and Switch Mounting

ULS + CS4 = Student Success, Curriculum, Data

Vocational Assessments: The New Generation

AUGMENTATIVE COMMUNICATION

AAC on iPad: Hands-On with the Latest Proloquo2Go (Two Block Session)

Accessing Social Networking Through SGDs and AAC Apps on iDevices

Apps for Adults with Aphasia: Assessment, Intervention and AAC

Benefits of AAC Camp: For Campers, Families and Professionals

Effectiveness of Telerehabilitation in AAC Service Delivery

Efficacy of the GoTalk Express 32 for Increasing Communication Attempts

Give Me A C(L)UE: Reworking Our Beliefs About What Individuals Who Use Auditory Scanning Need in a Communication System and Language Set

I Got This Device, Now What Do I Put on It?

Implementing Proloquo2Go 2: How to Customize Vocabulary and Teach AAC Use

Inclusion and Participation - Communication and Cognitive Skills: ProxTalker Devices at Work in the Classroom

My Apps Can Talk!

MyVoice for iPad 101: A Hands-On Guide to App Features, Best Practices, Case Studies and More (Two Block Session)

Putting the Pieces Together: Positioning, Access and Speech Generating Devices (Two Block Session)

Ramping Up Eye Gaze Technology for Girls with Rett Syndrome: Enhancing Communication and Literacy Learning

Solutions and Success for PODD Implementation: Open Forum

Switch Access to the iPad for Communication and Instruction

Talk'n Photos App: 20 Uses in 60 Minutes for \$3

The FLYMethod of Communication

The iPad: Allowing the Silenced to Cry for Help

The Language and Art of Teaching AAC: Using Scripting

The Power of PODD: From Emergent to Independent Communication (Two Block Session)

Top 10 Reasons to Try NOVA Chat

Using Assistive Technology with Young Children: Fun, Functional and Family Friendly

Using eReader Technology for Language Therapy

Visual Scene Displays from Lite Tech to High Tech: Imagine the Possibilities

WordPower for TouchChat App and New NOVA Chat Devices

AUTISM

A Moment in Their Shoes ... A Lifetime of Learning!

AAC and Autism: Implementing Evidence-Based Strategies in the Classroom (Two Block Session)

Bull's-Eye! Hitting Essential Targets for Students with Asperger Syndrome

Just Relax!?!? Using Technology for Self-Regulation for Individuals with Autism Spectrum Disorder

Lights, Camera, Action: A Focused Look at the iMovie App as a Tool for Video Modeling

Lights! Camera! Action! Video Modeling (Two Block Session)

Self-Regulation for All Populations with MeMoves and LifeMoves (Two Block Session)

Social Stories, Social Narratives and Mobile Devices: What Do We Know?

Social Thinking and the Story Grammar Marker: Strategies for Teaching Communicative Success and Personal Problem Solving (Two Block Session)

The Use of Computer Applications to Support Individuals with Autism and Other Developmental Disabilities (Two Block Session)

Transforming the Autism Classroom Through Interactive Technology



Using Technology as Evidence-Based Practice! Addressing the Learning and Behavioral Needs for Students with Autism Spectrum Disorder

Web 2.0 for Students with ASD

CURRICULUM DEVELOPMENT / MODIFICATIONS

Bust the Symbols Silo: Learn to Use Symbols in Curricular Teaching (Two Block Session)

Complex Students + Systematic Structured Teaching = True Meaningful Inclusion

Creating and Using Hypertext to Increase Student Learning

Easily Create Professional Animations for Education and Therapy

Five Sensible Strategies to Switch Success

Increase Your App-titude

IntelliTools Extreme! Advanced Features Hands-On!

Practice Makes Improvements

The Critical Missing Piece in Writing Instruction: Building Understanding of the Writing Process

The Ultimate Classroom Tool on Steroids: Self-Assess, Monitor, Evaluate and Watch Your Program Grow!

DIFFERENTIATED INSTRUCTION

101 Ways to QR Code Your Instruction

Don't Forget the Low Tech for Writing

Food for Learning: Easy Recipes for Building and Accessing Successful Thematic Units (Two Block Session)

Rett Syndrome: Communication and Learning Strategies (Two Block Session)

Show Me Your Work! Alternatives to Scribing for Students

Writing with the iPad

EARLY CHILDHOOD DEVELOPMENT

iPad Uses in Special Education: Which Apps to Use When (Two Block Session)

FUNCTIONAL LIVING SKILLS

Challenging Assumptions: High Tech AT for Individuals with Intellectual Disabilities

Independence Anytime, Anywhere! Using Visual Strategies, Reference and Technology for a Better Life!

INCLUSION / COOPERATIVE LEARNING

Active Music Making in the Special Education Classroom

Flash Cards in a Digital Age (Two Block Session)

Strategies for Including Individuals with Vision Impairments

KEYBOARD ALTERNATIVES

Beyond Communication: Using Eye Gaze Technology to Control the Computer

Computer, Mobile Device and Web Accessibility

Motor Cognitive Learning: Not Just "Hit the Switch"

Sorting Thru Alternate Keyboards for the iPad

Switch Access on the iPad

Wireless Technology: Why Can't I Just Plug Things In?

LANGUAGE DEVELOPMENT

Building Language and Communication Skills with Writing Prompts

Multidisciplinary Approach for Speech and Language Development Using AAC with a Student Who Has Severe Autism

LITERACY

AAC Writers and Beginning Writers Get Serious: Time to Publish

Bring the Joy of Reading to Your Struggling Readers with Start-to-Finish Books

Clicker 6: Literacy without Limits!

Digital Literacy Toolbox = Independent Access

Engaging High School Special Education Students in Novel Reading

Interactive Alphabet Use: It's Way More Than Just Letter Identification

iPad Apps to Support Learners Who Struggle with Reading and/or Writing

Let's Write About It: Appso-lutely! (Two Block Session)

Read&Write 5 Gold for Mac: Enhanced Literacy Solutions for All Learners (Two Block Session)

Shared Reading for Students with Significant Intellectual, Communication and Physical Challenges: It's About the Interaction! (Two Block Session)

Story Apps and eBooks: A New World of Literacy Learning

StoryPals: iPad App for Story Comprehension

Teaching Nonverbal Students with Severe Disabilities to Read: Decode, Read Silently and Comprehend (Two Block Session)

Text-to-Speech Software: High School Reading Intervention for Students with Reading Difficulties

The Virtual Balanced Literacy Club: Now You Can Join!!

Using Read Naturally's Fluency Program with Blind and Visually Impaired Students

Where, O Where Are the Books for Me? Finding Easy Texts and Apps for Older Learners

Writing Instruction and Opportunities for Older Students

PROFESSIONAL DEVELOPMENT

A CATS Story: Leveraging Local Resources for AT Services

AAC Certification: What Does it Mean?

Developing Assistive Technology Knowledge and Skills in General Education Teachers Using Closing The Gap and Online Instruction

Establishing Assistive Technology in a Rural School District

Meaningful Connections from Theory to Practice: IHE's and SELPA's Collaboration

QIAT Conversations: Tools and Strategies to Improve Your Practice

Top Tips to Increase Knowledge and Resources in Your District

Toward a Classroom Culture of Success: Developing Training for School Personnel Supporting High Tech AAC Users

SCREEN ALTERNATIVES

Productivity Strategies for Low Vision Employees in the Workplace

Screen Reader Web Usability: More Than Accessing Pages!

SEATING / POSITIONING / MOBILITY

An Artistic Approach to Physical Therapy

Creating a Stable Base for Success

How Seating and Access Must Be Altered to Support Independent Access to AT, Especially for Children and Young Adults with Complex Bodies with Tone (Two Block Session)

How to Assess and Train Young Children and/or Children Previously Not Considered Candidate for Powered Mobility (Two Block Session)

Seating and Positioning for Success in the Classroom

When You Need Your Hands to Help

TECHNOLOGY INTEGRATION

Applying Everyday Technologies to Meet the Needs of Individuals with Disabilities

Assistive Technology Integration in the Classroom: A Dynamic Discussion

AT Services for the New Generation of AT Devices

Collaboration in the Cloud: Pairing Anywhere Access with Everywhere Support

Creating an Assistive Technology Class for High School Students, Yo!

Creating Common Core Standards Aligned Activities with Boardmaker Studio (Two Block Session)

Data Schmata! Ways to Make and Show Change in School-Based AT Services

Effectively Implementing iPad in Schools: Building on Lessons From Across the Country (Two Block Session)

Get Comfortable Searching for Mobile Apps: How to Find What You Need and Know What You are Getting

Got Diverse Learners? Lawrence School Shares Best Practices

Improving Student Outcomes with Technology: From Research to Results (Two Block Session)

Practical Uses of Interactive Boards for Low Incidence High School and Transition-Aged Students

Red Ribbons, Blue Notes

Screening: A Missing Component of Assistive Technology Consideration

Shaking Up Your Snow Globe!

Supporting Reading with iPads

Technology as a Tool for Teaching: Effective Community-Based Instruction and Transition Planning for Adolescents with ASD and Other Disabilities

The Bluetooth Mouse: How to Use a Powered Chair's Bluetooth Mouse to Access the Computer and/or an AAC Device

The Complete Guide to iPad Accessibility (Two Block Session)

The Upshift: Moving a System Forward Using Technology

Using Eye Gaze as Access for AAC and for Powered Mobility

Using iPad Apps to Create Content for Students with Special Needs (Two Block Session)

Using Technology to Support Students with Writing

Using the iPad as an Effective and Productive Classroom Tool

TRANSITION

Improving the Transition Planning Process: The Top 10 Things Everyone Should Know About Transition and Fostering Independence (Two Block Session)

Transitioning for Real Life: A Five-Step Approach

UNIVERSAL DESIGN FOR LEARNING

A Make-and-Take Lesson in QR Codes

A Synthesis of the Intervention Studies on UDL in K-12 Settings

AT for Free, Works for Me!

Co:Writer and Snap&Read: UDL Reading and Writing Accommodations that Float!

It's in Your Back Pocket! Attaining Accessibility with Tools You Already Have

Technology Triple-Hitter: i21 + UDL + AT = Visual Home Run

The Latest Tech Tools for Executive Function in the Universal Design for Learning Framework

Universal Design for Learning Implementation for 21st Century Students

WEB 2.0

My Top 20 Web 2.0 Websites in One Hour

Spicing Up Social Skills Instruction: Web 2.0 and Predictable Software Templates

Technology Supports for Struggling Writers (Two Block Session)



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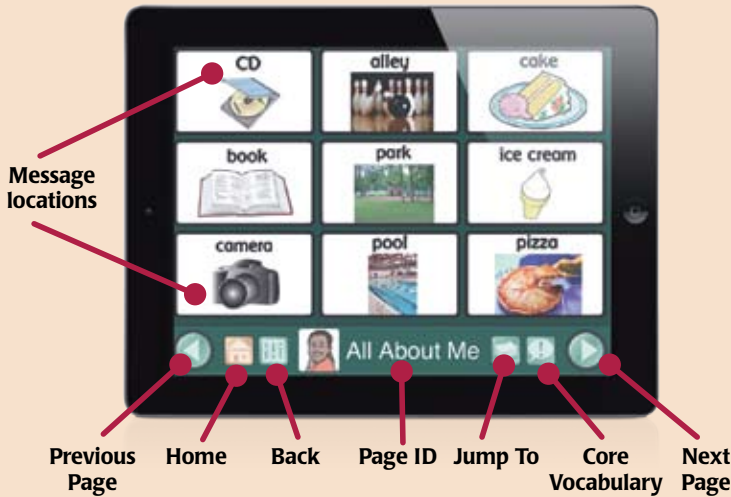
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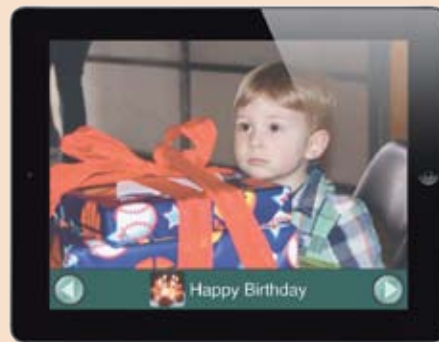
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