

# Closing The Gap

FEBRUARY / MARCH, 2011  
VOLUME 29 - NUMBER 6

## Solutions

## RESOURCE DIRECTORY

A guide to the latest assistive technology products  
for children and adults with disabilities

**2011**  
Edition

### ▶ PRODUCT GUIDE

- Hardware products
- Software products
- Other AT products

### ▶ PRODUCER DIRECTORY

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# Closing The Gap

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Preconference Workshops

October 10-11, 2011

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Registration Received	On or Before June 30	July 1 - September 8	September 9 - September 29	September 30 - Onsite
<b>Standard Rate</b> Group Discount - 5 or more Group Discount - 8 or more <i>All group registrations must be received at the same time.</i>	<b>\$415</b> Groups 5+ Deduct \$30 Groups 8+ Deduct \$50	<b>\$455</b> Groups 5+ Deduct \$30 Groups 8+ Deduct \$50	<b>\$495</b> Groups 5+ Deduct \$30 Groups 8+ Deduct \$50	<b>\$525</b> Groups 5+ Deduct \$30 Groups 8+ Deduct \$50
<b>Parent Rate</b> (A letter describing your child's disability must accompany registration)				<b>\$275</b>
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Preconference Workshops - Monday and Tuesday, October 10-11, 2011 (Includes Preview of Exhibits – Tuesday, October 11, 5:30 pm - 8:00 pm)	Price
<b>Monday, October 10</b> (Some preconference workshops carry an additional fee for materials)	<b>\$275</b>
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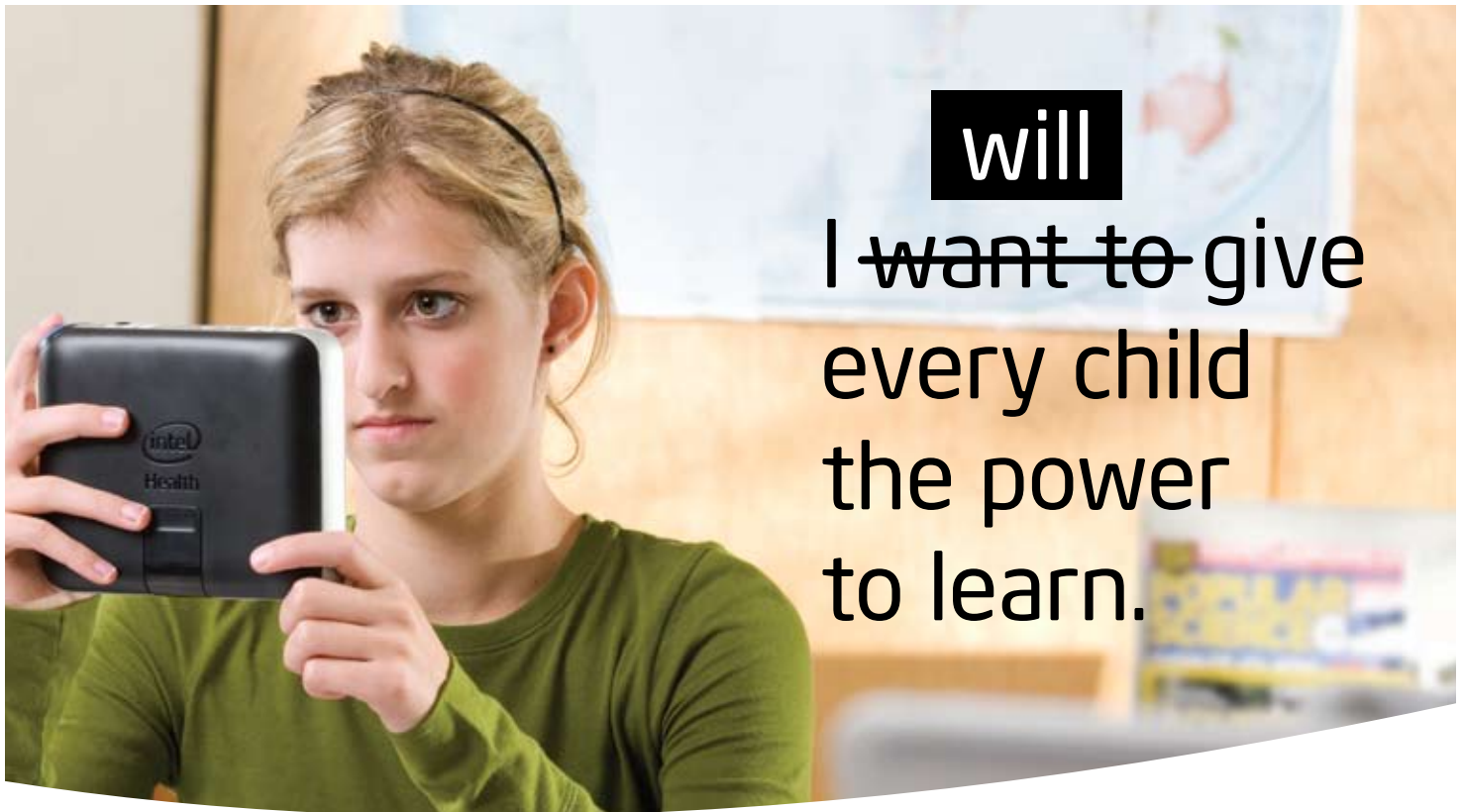
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Cover photo: Techno Camp 2010. Photo submitted by Mark Coppin, Assistive Technology Director, Apple Distinguished Educator Anne Carlsen Center, Jamestown, ND.

# Closing The Gap

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# DISKoveries

## Apple iPad and Apps for Special Needs

By Joan Tanenhaus

**I**n April 2010, Apple Computer launched its iPad. Within the next few months, it became apparent that it was going to be an excellent assistive technology tool for children and adults with special needs.

In the past months, hundred of applications (called apps) have appeared, many of them free and other ranging in price from \$.99 to \$200. Just to give you an idea of the growth in this area – in September 2010 there were over 250,000 apps, and at the end of October 2010, the number is estimated at over 300,000.

The iPad is 9.5" by 7.5", just one half inch thin and weighs only 1.5 pounds. It has a 9.7 inch (diagonal) LED backlit screen with multi-touch technology. The high-resolution display is remarkably crisp and vivid. Multi-touch technology lets you zoom, flick through pictures, tilt to get responses, shake, tap, touch and much more, depending on the applications. It has voice output through built-in speakers so applications are not only visual, but speak, much like they would on a desktop or laptop computer. There is also a headphone jack or you can use Bluetooth wireless headphones, and a built-in microphone. In addition, the iPad has support for playback of closed-captioned content, a Voice-Over screen reader and full-screen zoom magnification. A white on black display is available for those with visual impairment.

With the iPad, there is no up or down. It is designed to show your screen in portrait or



landscape orientation, whenever or however you turn it. Pick it up, and if it's upside down, it will immediately correct itself. With its wide 178° viewing angle, you can see it from many angles and still get a brilliant picture, with excellent color and contrast. The iPad has 12 built-in applications that let users browse the Web, do e-mail, enjoy and share photos, watch videos, read books, play games and much more. There are two basic models – one with Wi-Fi and the other with both Wi-Fi and 3G networking capabilities. A nice feature of the 3G networking is that you do not have to subscribe for the year. You can subscribe month by month or just have it one month if you are traveling and want it only then. Other variations in the models are determined by the amount of memory (16 GB, 32 GB or 64 GB). Battery life is up to 10 hours.

Besides all the features that come built-in with the iPad, the things that makes it so extraordinary are the specialized education and special education apps that have been developed for children and adults with special needs. The following sections include reviews and/or lists some of the best of these,

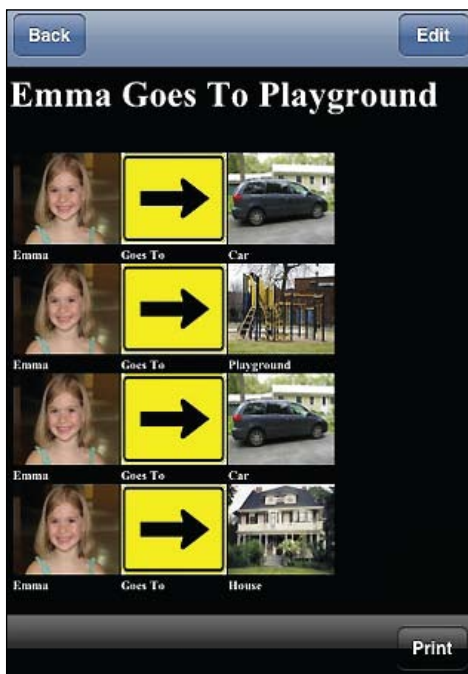
as well as some of the accessories that make the iPad even more powerful for individuals with motor difficulties, including docks, cases, mounts, styluses and the new switch interface developed by RJ Cooper.

A note about apps – every time I do a search for apps, I am amazed at the number of new ones that have appeared since my last search. It's almost impossible to keep up – so think of this as a starter list. Part II of this article will appear shortly.

### ACCESSORIES FOR THE IPAD

#### iPad Keyboard Dock ([www.apple.com](http://www.apple.com))

The iPad Keyboard Dock is both a dock for charging your iPad and a full-sized keyboard (11" x 4.5"). It is aluminum-bodied with matte plastic keys. The iPad fits in, without any case, in the portrait mode only. Along with the alphabet (qwerty) and numbers, the keyboard has a row of special keys along the top that replaces the standard Fkeys. The first on the left is a Home button that works just like hitting the iPad's Home button while automatically waking the iPad without any swipes. Then there's a search button, brightness down and up buttons, a button to activate Picture Frame mode and a button to call up the iPad's on-screen keyboard if you need it for something you can't do with the docked keyboard. There are also track backwards, play/pause and track forward buttons for music playback, along with volume mute, volume down and volume up buttons. The last key is a lock key that turns the iPad's screen on and off. The dock has a rear dock connector port, which lets you connect to an electrical outlet using the USB power adapter, sync to



iCommunicate (www.grembe.com)



TapSpeak Sequence for iPad (www.conleysolutions.com)

your computer, or use accessories, like the iPad Camera Connection Kit. An audio line out port lets you connect to stereo or powered speakers. If you don't want an external keyboard but do want a stand for the iPad, you can use the Apple iPad Dock, which is both a stand for the iPad and a connector port for syncing or charging. You can also connect speakers, a VGA adaptor or the iPad Camera Connection Kit. Like the keyboard, the iPad connects only in the portrait mode and at a fixed angle. There are many other iPad docks available, so look around before you buy.

Many cases for your iPad are also available from Apple and from many third-party

manufacturers. Look around online to find those that best meet your needs for size, color, protection, etc. If you visit [www.RJCooper.com](http://www.RJCooper.com), you will see some cases specifically designed for individuals with special needs. His Bumper Case and Carrying Case provide extra protection against accidental dropping.

**The Pogo Sketch** (Ten One Design: [www.tenonedesign.com](http://www.tenonedesign.com)) For individuals who cannot use their fingers to touch the screen, a stylus can be used. The Pogo Sketch is made of an aluminum alloy with a capacitive foam tip. The tip is thin, which is also good for those who want to do detail work. There's a clip on the back of the stylus so it will clip securely over a shirt pocket, a book bag or hang off your case. It also has a loop on the top so, if you want to hang it from your neck – or anyplace else – you can just place a cord around it. The stylus needs a bit more pressure than your finger but works great. It can also be adapted (check with your OT) to accommodate different types of grasps. You can also purchase the Particle, which is a Pogo Sketch together with a shock-absorbing case with a built-in stylus holder.

**Headpointer for iPad:** See [www.rjcooper.com](http://www.rjcooper.com) for ideas on adapting your head pointer or purchasing an adapted head pointer for the iPad.

RJ Cooper has also developed an iPad Cordless Switch Interface. As of the timing of this article deadline, there appear to be no apps available, but many are in the process of being written and published. With the new upgrade to System 4.2, which became available at the end of November, 2010, you will begin to see more and more of this happening. See Part II of this iPad article for future details.

**Pages, Numbers and Keynote** (Apple: [www.apple.com](http://www.apple.com)) These three apps, newly updated for iPad software version 4.2, will go a long way in improving your iPad's functionality. Along with the new print options and apps, such as PrintBureau, the iPad is becoming a more diverse piece of assistive technology. Look for much more information in the area of word processing and word prediction and printing in the second part of this article, to appear in Closing The Gap in a near future issue.

## APPS

To those of you new to iPad terminology, app is short for application—what Apple calls its third-party software programs developed specifically for the iPhone, iPod Touch and for the iPad. The applications can be downloaded directly to the iPhone, iPod Touch or the iPad or downloaded to a Windows or Macintosh computer via iTunes and then transferred. Currently, many iPhone and iPod Touch apps are being upgraded to be viewed better on

the iPad and many iPad specific apps are being produced.

Because there are thousands of apps available, and new ones appearing every day, it's impossible to do a comprehensive review of all the available apps. However, the App Store in iTunes is designed in an amazing way – easy to search and with a great deal of information available to the purchaser before any commitment is made. Just search by any topic or goal, and you will get a complete listing of apps that fit. Then you can select each, read a comprehensive review of features and see actual screen shots that really are helpful in understanding if that app will be appropriate for your potential user. Visit the developer's Web site for even more information and insight. Many have "lite" versions available free – download these and try them out before purchasing. And check back regularly – more are appearing daily and older ones are being upgraded with new features.

The developers of the apps, I have found, are also a unique group of people. Contact them directly with your suggestions – they welcome this kind of contact and, in most cases, seriously consider your suggestions. I have seen many of my suggestions appear shortly after in version upgrades. (Upgrades are free.)

## APPS FOR AAC

**Proloquo2Go** ([www.proloquo2Go.com](http://www.proloquo2Go.com)) from AssistiveWare provides a full-featured communication solution (AAC) for people who have difficulty speaking. It brings natural sounding text-to-speech voices, symbols, automatic conjugations and a default vocabulary of over 7,000 items in categories such as greetings, manners, questions, jokes and more. It is fully expandable and easy to use. The current version includes North American English and British male, female, girl and boy voices. Proloquo2Go vocabulary has about 8,000 symbols and conjugation support. Users can go to the Grid or List view to quickly tap items that optionally speak as they get inserted into the Message window. (Holding any of the items automatically gets access to conjugations, plurals or possessives.) Tap the message window to speak your sentence. By hitting the plus button, you can permanently add the sentence to your vocabulary in the category of your choice. To add the communication to your vocabulary, you select a symbol or pick a photo from your library. You can also type your message. Proloquo2Go is fully customizable – you can disable images, have smaller or bigger items, change background and text and more. There is also an alternative keyboard that is larger than the default keyboard that works with the list/grid view. Visit the Proloquo2Go Web site for more

detailed information, for videos, manual, resources, tutorials, etc. and new information on upgrade features.

**iPrompts** ([www.handholdadaptive.com](http://www.handholdadaptive.com)) Designed for parents, special educators and therapists to use with children who are developmentally challenged and language-impaired, iPrompts is customizable and provides several easy-to-use visual prompting tools (no audio prompts or voice output). Picture Schedules allows caregivers to create picture schedules for activities and learning situations (i.e. going to bed, getting ready for school, etc.) Schedules can have two or more pictures. Captions can be edited for each image. Social stories can also be created. There are hundreds of stock photos or you can add your own. Visual Countdown Timer: This feature displays an image of the caregiver's choice, along with a graphical countdown time (set to any duration) and is useful for demonstrating how much time is left until a current activity ends or before the next pictured activity begins. Choice Prompts: This mode lets caregivers select any two images that can be offered as a choice, empowering those who cannot vocalize preferences. Image Library: This includes hundreds of useful illustrations and digital pictures across numerous categories. Additional categories and pictures can be added.

**iConverse** ([www.converseapp.com](http://www.converseapp.com)) This is another application designed for young children and individuals with communicative disabilities. iConverse displays six different color icons that represent a person's basic needs (Bathroom, Drink, Food, Sick, Break and Help). When the icon is pressed, a full sentence is spoken. You can also create your own buttons with pictures from your own pictures, your own text to speech and a scrolling display. The gender of the voice can be changed for the original six buttons, but the voice for the custom buttons cannot. Video tutorials are available on the company's Web site to assist with creating new buttons.

**TapToTalk** ([www.taptotalk.com](http://www.taptotalk.com)) This is free application that turns the iPad into a very basic AAC device. Just tap a picture and TapToTalk speaks. The home screen of the sample album that is included has pictures/text for Go, Play, Hungry, Drink, Emotion and Bathroom. Tapping any one of these takes you to a page with choices within the category selected (for example, Drink has icons for water, ice, milk, soda, smoothie). There are a few additional albums on the Web site that can be downloaded free to your iPad. This app, as described above, is free, but further customization can only be done with a yearly subscription for \$100 per year.

**iCommunicate** ([www.grembe.com](http://www.grembe.com)) This is an app developed to create storyboards, flashcards, routines and visual schedules. There are two types of storyboards: the 10x4 lets you put in 10 pictures down by four pictures across and the Task Completion storyboard lets you view one picture at a time, swipe to move forward and back and to also add or remove a checkmark to mark task completion. There is a large collection of pictures and new pictures can be added from your photo collection on the iPad or from Google. You can add either custom audio or type in the words for text to speech, allowing you to narrate the storyboard and the Task Completion boards. A really nice feature is that you can create the storyboard as preparation for a trip or experience and then convert it to a Task Completion board, take it along and then check off each part as you accomplish it. There is an excellent video demonstration on [www.grembe.com](http://www.grembe.com) that demonstrates both the use and the creation of new boards. My Pictures Talk, also from Grembe, lets you take a picture, record a note or someone speaking and create a social story showing a child what is going to happen, what already happened, etc.

**TapSpeak Button for iPad** ([www.conleysolutions.com](http://www.conleysolutions.com)) TapSpeak Button acts like a single switch that records and plays messages. It is great for teaching basic cause and effect, as well as beginning communication. Easy to program with a single message, the task is to just touch the big red circle on the iPad to speak the message. Upcoming versions will allow the ability to import photos, as well. Currently, you

can store an unlimited number of messages of unlimited length, you can change the color of the button and tap feedback, add and edit existing messages.

**TapSpeak Sequence for iPad** ([www.conleysolutions.com](http://www.conleysolutions.com)) TapSpeak Sequence lets you create and use message sequences to help individuals with special needs understand, follow sequences and communicate. It is the iPad version of a sequential message switch. You can record and customize messages, save and replay as wanted. The number of messages and length are unlimited and can be modified and re-ordered. Message images can be a geometric symbol or a photograph. The DynaVox/Mayer Johnson PCS library as images is also becoming available as an option. The tap response is configurable to accommodate varying motor skill levels. Messages can be activated with a touch (no touch release needed) or a tap (touch and release). Taps can be configured to require that a user lifts the finger off the screen in a specified time and doesn't move the finger more than a specified distance. This helps develop motor skills needed to use an AAC devices. Play a message by tapping the message image; TapSpeak Sequence then advances to the next message. When the end of the sequence is reached, you go to the first message in the sequence. You can switch message order by dragging and dropping a message in the message list! Additional features that are coming in upgrades include standard picture symbol set support, resizable and moveable visual targets, configurable backgrounds of low/high complexity, comprehensive usage tracking and reporting and more sample sequences. Basic usage tracking is included. This will be greatly expanded in a future version. Watch for TapSpeak Choice, which will be the company's version of a low-to-mid tech communication device with switch access and scanning. It will work with RJ Cooper's iPad Cordless Super-Switch and iPad Switch Interface.



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**Voice4You** (Spectrum Visions: [www.voice4uAAC.com](http://www.voice4uAAC.com)) This app has over 130 pre-loaded icons that speak, grouped into nine categories. Users can view the icons alphabetically and select the one they want by touching or they can view within categories (bath, emotion, food, general, greeting, help/want, places, things, people, emergency). You can create as many icons and categories as you want and add them to the lists, with up to 10 seconds of audio added to each with the built-in microphone. If you go online to the Web site, there are many video tutorials that will give you more information about the app and how it can be used. (There is currently a Japanese version also.)

**AutoVerbal Talking Soundboard** ([www.notiesoftware.com](http://www.notiesoftware.com)) In this app, you pick an icon and touch to speak your message. There are 16 rows down and 10 rows across, making 160 different icons, 10 of which can be customized. If the Internet is available, premium voices will be used to speak your custom message; otherwise, a built-in voice will be used. All messages are typed in (no recording option). You can also customize the background and button sizes. Many of the pre-recorded messages are for communicating messages (i.e., I need to use the bathroom, I need a band-aid, please, thank you, yes/no, etc.) and others are nouns in categories (i.e., one row has foods, one has vehicles, another animals, sports, etc.) In addition, there is a text-to-speech option that lets you type in any message and have it spoken.

**AssistiveChat** ([www.assistiveapps.com](http://www.assistiveapps.com)) In this app, users type in their message, press the speaker icon and hear their message spoken aloud. There is no limit to message size. There is word prediction available that present the user with four choices that match the letters they have typed in. There is also adaptive learning of "next word" that presents possible choices to make sentence typing faster and with less keystrokes. Touch the correct word to enter it and the word is spoken aloud. When the program speaks out the message, it speaks clearly, with a pleasant voice and with appropriate and helpful pauses between sentences. Users can add their sentences or message to their favorites for use at a later time and there is also a list of 20 "recent" messages. There are options for two male and one female voice, volume and speed. If you press the speak button when there is no text, the message is spoken to enter the text. Program can be used in either landscape or portrait mode.

**Look2Learn** (MDR: [www.look2learn.com](http://www.look2learn.com)) Look2Learn is an AAC application that lets individuals communicate using simple photos to express basic wants and needs. The main page presents a picture

"I want" with voice output – press the "select an image" bar across the bottom to bring the user to a page with six categories (snacks, meals, indoor play, outdoor play, basic needs, emotions). Select a category to find six pictures in that group (i.e., meals – quesadillas, hotdog, hamburger, cereal, French fries, carrots). Picking one completes the initial screen. Press to hear the request spoken. There are video and text manuals available with instructions on adding photos, enabling/disabling vocal output, renaming photos, adding audio, adding to categories and more.

**Stories2Learn and Social Skills** (MDR: [www.look2learn.com](http://www.look2learn.com)) These are two excellent apps. Stories2Learn gives users the ability to create personalized stories and visual schedules using photos, text and audio messages – a great way to work on literacy, sequencing, social skills and more. The app comes pre-loaded with one story. It is easy to add photos and audio messages to create new stories. Social Skills contains six social narratives (broken into two levels to give a total of 12 social narratives). The stories contain targeted instruction in areas of Reciprocal Play, Task Avoidance, Turn Taking, Gestures, Recess and School Rules. Users can look at a social photo, touch the picture for audio, and then continue on to the next pictures. Users can modify the stories by adding different photos, text and audio.

### SOME FREE APPS FOR AAC

**SmallTalk for Aphasia** ([www.lingraphica.com](http://www.lingraphica.com)) Designed for people with aphasia but also applicable to those with autism, developmental delays, ALS, down syndrome, apraxia and others, SmallTalk for Aphasia provides a vocabulary of pictures and videos that talk in natural human voice. This app in the App Store of iTunes is free. It contains a starter set of icons to introduce you to the Lingraphica system of aphasia communication. When used together with the Lingraphica speech-generating device, it allows you to personalize and expand the vocabulary to thousand of words. When used as a stand-alone from iTunes, it lets you take along a set of words and phrases to use in everyday situations but does not allow for any modification or expansion. When the included icons are pressed, they are enlarged and speak the word or phrase. The Video section includes phrases and words – when these are pressed, the icon enlarges and the word is spoken with a video of the speaker's lips as the word/phrase is spoken. Other apps from Lingraphica include SmallTalk Oral Motor Exercises, SmallTalk Dysphagia (50 phrases covering words and phrases needed

to communicate swallowing needs), and SmallTalk Phonemes (speech-exercise videos illustrating the tongue and lip movements necessary to produce a single phoneme).

**Speak in Motion Trial 1.1** ([www.speakinmotion.com](http://www.speakinmotion.com)) This program is free and provides a collection of close up videos of mouth movements that are designed for individuals with apraxia and aphasia to watch and practice. The simultaneous combination of visual, auditory and, in some cases, written cues, allows individuals to practice speech. The videos are divided into two categories – functional use and therapy use. Functional use includes videos for conversational, telephone, dining, public speaking, jokes, literature and religion, and the therapy videos include months, compound words, rhyming words, linking phrases and more. There is also a video for emergency use.

**Autism Xpress** ([autismspectrum.org](http://autismspectrum.org)) This is also a free app. It has an opening screen that displays 12 icons for different feelings (happy, sad, nervous, etc.). Press one and you see a full screen picture of the icon with an associated sound (i.e., happy – laughter, sad – crying, sneeze – sneeze, etc.).

**Type n Talk Classic** (<http://jirbo.com>) In this free app, you type in a word or phrase, touch the Talk button and your iPad will speak it aloud.

**Conover** ([www.conovercompany.com](http://www.conovercompany.com)) has a series of four free apps for social stories. These include: Everyday Skills, Social Skills Sampler, Life Skills Sampler and Literacy Skills Sampler.

**Model Me Going Places** ([www.modelmekids.com](http://www.modelmekids.com)) This is a great visual teaching tool to help children become familiar with new locations and experiences. Each location has a narrated photo slide show of children modeling appropriate behavior. The locations include hairdresser, mall, doctor, playground, grocery store and restaurant. Touch the forward and back buttons to move through the photos one by one or just press the slide show button to advance photos automatically. This excellent app is based on the Model Me Going Places DVD.

## BOOKS

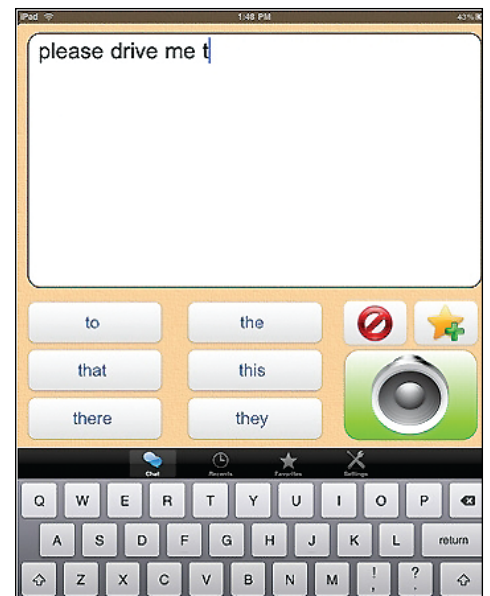
The iPad is an excellent way for young children to learn to love reading books and to develop emerging literacy skills. There are wonderful books that read aloud, highlight words, and let the users explore, turn the pages and interact with them. Here are some of my favorites.

**MeeGenius! Children's Books** ([www.mee genius.com](http://www.mee genius.com)) This app contains 12 beautifully illustrated books, including many favorite titles and new ones, too. The story is read aloud with word highlighting. Six books come

pre-installed with the app and six more titles are available to download for free. Additional books are available too. Children just touch the icon for the story they want to start. The book is then read aloud and goes automatically to the next page. Currently, there is no option to remain on a page until the user turns to the next page. If you visit the Mee Genius Web site on your computer, you can have access to these same story books that read aloud with word highlighting. In addition, you can personalize by naming the main characters. On the computer, you can press the pause button at the end of each page if you want to stop and talk about the pictures, events, etc. Press again to continue to the next page. There is no charge for the books on the computer but you do need to remain connected to the Web site.

**Dr. Seuss Books and Games** (Oceanhouse Media: [www.oceanhousemedia.com](http://www.oceanhousemedia.com)) We all love Dr. Seuss books, and many of them are now available for the iPad. The stories can be read in three modes. In Read to Me, the story is read aloud page by page, with word highlighting – readers listen and interact by touching pictures to hear their names, by swiping to turn the pages, by pressing words to hear them spoken individually or by touching and holding the text to hear it read over again. In Read It Myself mode, all the same options are available but the story is not read automatically. If the user wants a word or a page read, they can just press and hold. In Auto Play mode, the story will read in entirety without the user having to swipe to hear the whole story. The following Dr. Seuss books are available, and more come regularly: Gertrude Mc Fuzz, Green Eggs and Ham, You're Only Old Once, How the Grinch Stole Christmas, What Was I Scared Of?, One Fish Two Fish Red Fish Blue Fish, The Sneetches, Oh, the Places You'll Go!, The Cat in the Hat, Yertle the Turtle, The Big Brag, The Foot Book, Dr. Seuss's ABC, The Lorax and Hop on Pop.

**The Berenstain Bears** (Oceanhouse Media: [www.oceanhousemedia.com](http://www.oceanhousemedia.com)) The Berenstain Bears are also available in a wide selection of stories. These stories also get read in three modes. In Read to Me, the story is read aloud page by page, with word highlighting – readers listen and interact by touching pictures to hear their names, by swiping to turn the pages, by pressing words to hear them spoken individually or by touching and holding the text to hear it read over again. In Read It Myself mode, all the same options are available but the story is not read automatically. If the user wants a word or a page read, they can just press and hold. In Auto Play mode, the story will read in entirety without the user having to swipe to hear the whole story. The available Berenstain Bears stories



AssistiveChat ([www.assistiveapps.com](http://www.assistiveapps.com))

include: The Berenstain Bears Give Thanks, The Berenstain Bears and A Job Well Done, The Berenstain Bears Say Their Prayers, The Berenstain Bears Play a Good Game, The Berenstain Bears Go to Sunday School, The Berenstain Bears Discover God's Creation, The Berenstain Bears Faithful Friends, The Berenstain Bears and the Golden Rule, The Berenstain Bears and the Gift of Courage and the Berenstain Bears: God Loves You!

Other books by Oceanhouse: (Oceanhouse Media: [www.oceanhousemedia.com](http://www.oceanhousemedia.com), [www.ombooks.com](http://www.ombooks.com)) Just Grandma and Me, I Just Forgot and All by Myself, three classics by Mercer Mayer, are also available as apps for your iPad. Presented also in three modes (Read to Me, Read It Myself and Auto Play), these books are excellent choices for young children. The Legend of Spookley the Square Pumpkin is a delightful Halloween story that teaches colors, shapes and a great message about being different and unique. Touch different parts of the pages to hear different sound effects and dialogue. Rudolph the Red-Nosed Reindeer is the classic story of how Rudolph saved Christmas and includes custom music, background audio, enlarged artwork for each scene, authentic audio clips from the 1964 TV special and special effects for Rudolph's glowing nose and falling snow. In Unstoppable Me, children can listen and read about 10 important lessons that help them "soar through life," as narrated by the author, Dr. Wayne Dyer.

**Bartleby's Big Book of Buttons** ([www.octopuskite.com](http://www.octopuskite.com)) This is the story of Bartleby, who collects buttons, switches, knobs and dials – all his favorite are in the book of buttons. Press them to create all kinds of effects, like dressing Bartleby, changing



Wheels on the Bus (Duck Duck Moose [www.duckduckmoosedesign.com](http://www.duckduckmoosedesign.com))

pictures on the way, driving, controlling railroad crossings, making the sun rise and set and much more. Readers follow the story and the directions to advance from page to page. Very good for problem solving, great fun and excellent for motivating students to read and enjoy books.

**Just Me & My Dad** (Big Tuna New Media: [www.littlecritter.com](http://www.littlecritter.com)) This classic story by Mercer Mayer comes to life on the iPad just like it did on the computer – with the story read aloud, words highlighted and full of animated hot spots to touch and explore. A sample page is available free, so you can take a look at page one of the book before you

**TapToTalk™**  
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- Nintendo DSi
- Nintendo DSi XL
- Nintendo DS
- Nintendo DS Lite
- PCs
- Macs
- Netbooks
- Smartboards
- Tablets

[www.TapToTalk.com](http://www.TapToTalk.com)

purchase. Try this - you and children of all ages will be fascinated by the story and all the opportunities for interacting with the story.

**Miss Spider Books:** (Callaway: [missspider.com](http://missspider.com)) This is a beautiful presentation of a classic story. The graphics are outstanding and there are many options for other activities as well. The story can be read aloud page by page, with or without background music. The text appears below the picture, but, if you prefer, you can enlarge the picture so it's full screen without the text showing as the narration continues. You can also watch the story narrated like a DVD – with full action and animations – and with the text highlighting each word. There's a matching activity (concentration game with pictures from the story), a painting activity and six- or 12-piece puzzles of six different pictures. A second Miss Spider story, Miss Spider's Bedtime Story is also available – try the free Miss Spider Bedtime Story Lite for a sample of the program before you buy. It has sample pages, a short video, a matching game, a picture to paint and three six-piece puzzles.

Some free story book apps to try: The Enormous Carrot, Toy Story Read Along, Jingle All The Way, The Little Snail, Kids Can Read – Kitty The Cat, Kids Can Read – Firefighter, Kids Can Read – Buffy, The Grouchies, Rabbit & Turtle, Aesop's Thinking, Woggle Sesame Street Sampler.

## APPS FOR EARLY LEARNING

**Sesame Street Activities** (IDEO: [www.ideotoylab.com](http://www.ideotoylab.com)) Your favorite Sesame Street characters come alive in this group of interactive activities for the iPad. In Bert's Bag, children are instructed to slide their finger across the bag to open it, shake the iPad to shake out the contents and then instructed to count and slide balloons, balls, rubber duckies, seashells, keys, blocks and more. Great for learning to count and understanding one-to-one correspondence. With Count TV, there are nine counting videos. Touch a number to see a video about the number in a story performed by Sesame Street characters. The videos are interactive, with iPad users instructed to touch the objects to hear them counted. In Rosita's Jump Count, Rosita says jump and she counts every time the iPad is shaken – Rosita gives players a target number to reach or she counts as the player "jumps" as many times as they want. Encourage children to stand up, hold on to the iPad and jump. Counting is in English and in Spanish. In Grover's Number Special, players make sandwiches, pizza, kebobs, salad, etc. as they tilt the screen to catch ingredients as named (i.e., one piece of cheese, two slices of bread) which Grover then serves (and usually drops, or decides to eat himself). In Monster Maker, players pick a monster body, touch its face to add eyes, nose and a hat. They can keep touching to change to different features until they find the ones they want and then watch Elmo dance and sing with their monster. They can also change songs and background.

**Duck Duck Moose** () Some of our favorite and classic pre-school songs and rhymes are brought to life in this excellent group of interactive activities by the Duck Duck Moose developers. Wheels on the Bus is an interactive book that lets young children poke or slide things on the screen to see what happens. The song is sung as players slide and touch to move the bus, to open and close doors, to move the driver's hand, to swish the wipers, to move people, to pop bubbles, to turn wheels and more. Touching the arrow changes the verse. The song can be sung in English, French, Spanish, Italian or German or played by musical instruments (violin, cello, piano and more). You can even record yourself singing. Old MacDonald is an interactive book too – same format but each turn of the page brings another animal, another verse – with multiple animations when pictures are touched. The same options for different languages and recording are available. In Itsy Bitsy Spider, each page reveals another phrase of the song with multiple and delightful animations. Touch the spider for the next verse. Baa Baa Black Sheep is full of more surprises – it combines two popular nursery rhymes – Baa Baa Black Sheep and Row Row Row Your Boat

– in a delightful adventure. Explore the island and row your boat while visiting with the sheep and his friends. Explore three underwater worlds and look for matching puzzle pieces hidden throughout the program. Find objects in the different scenes and match them to the shapes (outlines) in the puzzles. Touch to load sheep in the boat, row the boat and much more. Great fun. Fish School is another delightful interactive program – colorful schools of fish transform themselves into different letters, numbers, shapes, colors and more. Touch the fish to go on to the next in the sequence (A-Z, 1-20), see fish form different shapes, change colors, spot the different fish, play concentration, sing the ABC song and more. There's a play activity where children can tap a fish to make it swim faster, drag to move it and hold it down to make it grow bigger.

**FirstWords** (Learning Touch: [www.learningtouch.com](http://www.learningtouch.com)) Children love this group of apps – they are great for language, literacy, letter recognition, sequencing and so much more ... and seem to capture the children's attention and motivate them to continue. They each present a picture and the letters that spells the word, both in sequence and scrambled. The task is to move the scrambled letters up to the printed word, one at a time. You will hear the name of the object, the letters as they are placed, the word spelled and spoken when it is completed. No reading or spelling is required because letters are matched – but it's an excellent way for children to learn both letter names, sight words and spelling. There are excellent options, such as upper or lower case letters, letter hints or no hints, letters must be placed in left to right sequence or in any sequence, options to randomize, have speech and more. Different apps include: FirstWords: Animals, FirstWords: Vehicles, FirstWords: At Home, FirstWords: Christmas, FirstWords: Shapes and FirstWords: Deluxe (which includes 44 animals, 35 vehicles, 14 colors, 22 shapes and 32 words from around the house). The program is also available in a Spanish, German and French version. Download the FirstWords Sampler – it's free and you can try it out before you buy.

**Bob Books Reading Magic** ([www.learningtouch.com](http://www.learningtouch.com), [www.bobbooks.com](http://www.bobbooks.com)) This app is a phonics based interactive reading experience. Bob Books Reading Magic shows children the connection between letters and words. It sounds out simple words and spells the words they have been read. There are twelve scenes with a total of 32 words. The book slowly introduces new letter sounds, using consistency, repetition and stories that fit short attention spans. This app combines the excellent FirstWords learning-to-read

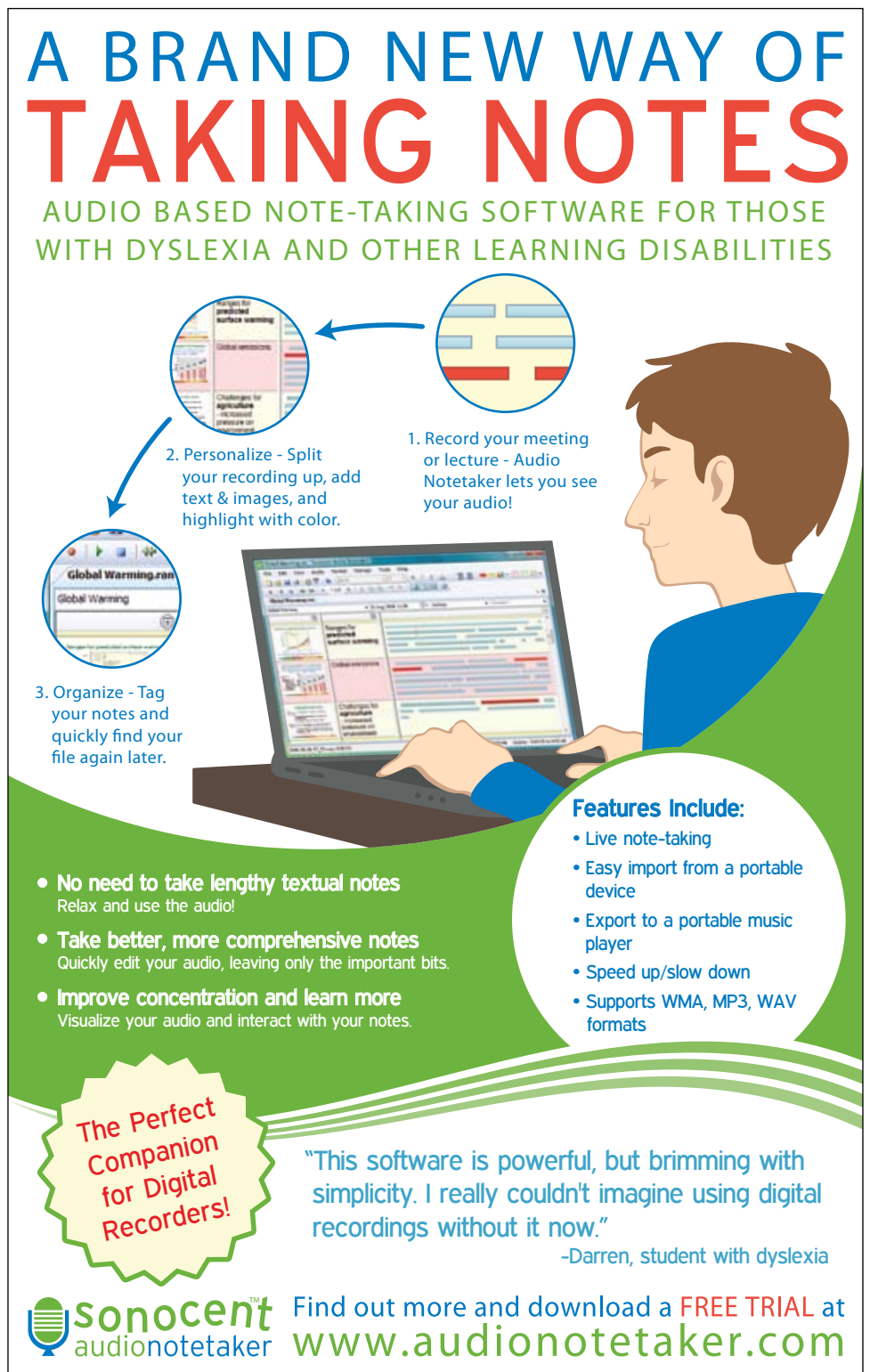
interface with the great characters and stories of Bob Books.

**My Very First App (Night & Day Studios:** [www.myveryfirstapp.com](http://www.myveryfirstapp.com)) This fun app has three matching games using the illustrations of Eric Carle's stories. In the first game (Easy mode), the screen is divided in half and children swipe the lower and upper halves to find a match (i.e. the color red to match the red fire truck, the color yellow to match the lemon). There is an immediate reward when

the match is made. The Medium and Hard modes are games of concentration – match the object to the color by turning over cards (medium mode has 16 cards, hard mode has 20 cards.) Additional libraries are available and each set has been adapted for all three game levels. In Numbers, you match sets of squares to sets of objects (cherries, pineapple, grapes, apples, etc.); in Food, you match animals with the food they eat (i.e. elephants/peanuts) and in Animal Sounds, you match 10 animals to

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FirstWords (Learning Touch: [www.learningtouch.com](http://www.learningtouch.com))

the sounds they make. Additional sets for Words, Motion and Animal Homes will be added in the near future.

**Peekaboo Barn** (Night & Day Studios: [www.peekaboobarn.com](http://www.peekaboobarn.com)) This is a fun, early learning game for the youngest of children. Touch the barn to open the door, see the animal, hear its sound and hear its name spoken and printed. Touch again to get another animal. The door “knocks” and “bounces” until it’s touched again – a great way to reinforce early cause and effect. You can choose to hear the names spoken by a child or adult in either English or Spanish. There are 12 animals. Great illustrations – excellent app. (You can download a free Peekaboo Barn Lite from the iTunes store to try it out.) In Peekaboo Wild, similar in design to Peekaboo Barn, children peek through the grass to find 10

wild animals. Look for these new Night & Day Studios apps coming in the near future: Kindermusic (like Pandora for kids), Peekaboo Forest (using the illustrations of Charley Harper), Yo Gabba Gabb’s Dancey Dance, a Busytown Game with Richard Scarry’s art and a Very Hungry Caterpillar Game.

**Fisher Price Apps** (IDEO: [www.ideotoylab.com](http://www.ideotoylab.com)) Three fun apps in this series: Fisher Price See ‘n Say is just like the toy – touch the dial to spin and one of the six pictures is selected. Children will see a big picture of the animal, followed by a short narrated video that gives some facts about the animal. Tired of the six animals? Shake the iPad and get six different ones. With the Fisher Price Chatterphone, children can touch the phone buttons for different activities. With the numbers (0-9), they touch the number and hear the number named. Touch the center of the dial pad, and the numbers change to letters with musical tones (piano, recorder, violin) and touch again to see the community helpers (doctor, fireman, scientist, teacher, etc.). When the community helper is touched, the phone rings and is answered, for example, “Hi, I’m Fred the Firefighter. I fight fires and rescue people. Goodbye.” In Little People, the opening screen is a farm scene – and children can touch the different objects and animals for different effects. They can wipe the screen to clean off the pig, sing along, swipe to move to another picture, go in the barn, play some games, find matching turtles and more.

Other fun and free apps for young children: Touch N Color, My First Alphabet Puzzles - Free, Alphabet Car Lite, Spin Art Lite, Scratch A Sketch Lite, Bubble Free, iSay Free, ShowMeStories.

## APPS FOR SPEECH AND LANGUAGE:

Just a beginning of apps specifically designed for speech and language therapists – more to come in next iPad article, which will follow soon:

**ArtikPix** ([www.rinnapps.com](http://www.rinnapps.com)) The full version of this app contains 21 decks of articulation cards, with 40 cards each for the following sounds: th, f, v, ch, sh, k, g, s, z, l, r, s bends, r blends, l blends, p, b, m, n, t, d and j. It has both flash card and matching activities for each of the sounds in all positions. The flashcards can be practiced by just swiping to pick the next picture. In the matching activity, the words are randomized into three, six or 10 pair levels and students can practice with a concentration-type matching game. The app allows for recording and playing back the voice recording for each word. You can download the free ArtikPix, which contains the “th” deck of cards. Great way to try the program and see how it can be used to work with articulation with your students.

**SLP Mobile Articulation Probes** (Smarty Ears: [www.smartyearsapps.com](http://www.smartyearsapps.com)) With this app, you can evaluate Phonemes (23), Mode of Articulation (affricates, fricatives, glides, stops, liquids, nasals, plosives) and Phonological Processes (fronting, backing, stopping, final consonant deletion, initial consonant deletion, gliding, deaffrication, consonant cluster reduction.) When you select the area, you are then presented with a screen listing the phonemes, mode or processes with a choice of any or all for initial, medial and final positions. Then you are presented with pictures – over 936 images. The tester then checks either correct or incorrect for each picture as it is presented. Record keeping shows percentage of correct, as well as a listing of the words, and whether they are correct or incorrect. This app can also be used to teach and reinforce the sounds – like a deck of flash cards. You can pick individual sounds and position. All images are automatically shuffled each session and presented randomly.

**Sunny Articulation Test** (Smarty Ears: [www.smartyearsapps.com](http://www.smartyearsapps.com)) This is an individually administered tool for screening, identification and evaluation of articulation skills in English. You can use it to collect information regarding an individual’s articulation skills, to measure treatment efficacy, to determine a therapy plan, etc. You can track

# Miss Sue’s

## keyboard fun ©



Miss Sue’s Keyboard Fun is a software program designed to help children with physical or learning disabilities identify where keys are on the keyboard, then learn to type and spell.

- Suitable for autistic students or those with physical or learning disabilities
- Motivate and reinforce learning
- Large visuals & sound to adapt for poor vision
- Display upper or lower case
- Data collection included
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progress over time. It tests all phonemes, including clusters, in the English language. You are able to also add notes on the app during the assessment.

**Match2Say:** (Smarty Ears: [www.smartyearsapps.com](http://www.smartyearsapps.com)) This program is a group of concentration-type matching games, with each deck of cards representing a specific sound. It includes 32 phonemes, including consonant sounds, digraphs, different types of r sounds, s clusters and 1,500 images. While the users play, they say the words and practice producing the sounds. The words are spoken, and there are several difficulty levels.

**Articulate It** (Smarty Ears: [www.smartyearapps.com](http://www.smartyearapps.com)) This app is designed to help practice all phonemes of the English language. It contains over 1,000 images and lets speech therapists and/or parents work towards improving the speech of children with articulation disorders. When starting the program, users select the Phonemes, Phonological Processes (fronting, backing, stopping, gliding, deaffrication, final consonant deletion, initial consonant deletion and consonant cluster reduction) or Mode of Articulation (affricate, fricative, plosive, glide, liquid, nasal and cluster) to work on. Pictures are then presented, like flash cards, with words spoken (when picture is touched) and the users can also record their words and compare their productions to the audio recording. There is a place to check if the sound is produced correctly or incorrectly. Two or three students can work together on different articulation goals. The pictures will alternate between students, presenting each with their particular sound goals. (There is an option to skip images that you don't want to practice.) There is a record keeping option and individual notes can also be added. Result screens give you percentage of accuracy based on phonemes, position in the word, which words were missed and more. For more detailed information, visit the Web site and watch the instructional videos on how to use.

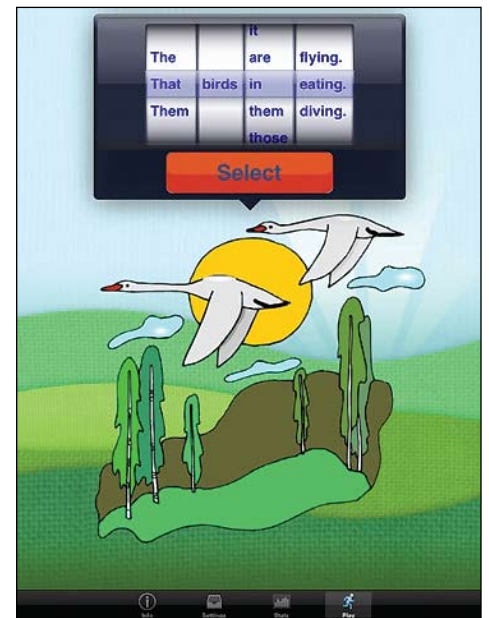
**Kindergarten.com** ([www.kindergarten.com](http://www.kindergarten.com)) Although these apps were not designed specifically for speech pathologists, they provide an excellent selection of flash cards and related language material. They have been created using behavioral techniques that are based on Applied Behavior Analysis (ABA). You will find flash cards by category (actions, shapes, verbs, things you wear, emotions, music, famous places, sports and many more) and they are all free. In addition, look at the language cards, such as Receptive Identification (three pictures on each screen – find the. . .), Which Does Not Belong?, What Goes Together, Identification by Feature, Function and Class, Rhyming words and more. Visit

the app store or Kindergarten.com for more details.

**Story Builder** (Mobile Education Store: <http://mobile-educationstore.com>) This app is designed to help children build a story with relevant and integrated ideas. A picture is presented and questions are asked. There are three levels – on Level 1, four questions are asked and most relate directly to something in the displayed picture. In Level 2, seven questions are asked and the student will need to make inferences, and Level 3 allows the student to make up any story they wish. An audio clip will play a question and students can ask to have the question repeated or record their answer. Once all the questions are answered, all of the answers get stitched together to create a complete narrative. Stories can be saved, deleted or e-mailed. There are 50 distinct story lines to create narratives from, with over 500 audio clips of questions to guide the narrative.

**Question Builder** (Mobile Education Store: <http://mobile-educationstore.com>) This app is designed to help elementary aged children learn to answer abstract questions and create responses based on inference. There are three levels of activity. In Level 1, questions will relate directly to something in the displayed picture, Level 2 questions require the student to make inferences about the picture and Level 3 requires more complex inferences to be made. When users begin to play, a picture appears with a picker wheel. An audio clip will state the question and, if desired, the text of the question can also be displayed. There is only one correct answer for the question, although some or all of the answers might describe the picture. The question can be repeated. The student reads and selects the answer by moving the picker wheel and then hits the select button. There are why, what, where, how and random question formats that can be pre-selected – with 1,200 audio clips of questions and answers and 50 reward animations and audio clips. Student progress can be tracked.

**Sentence Builder** (Mobile Education Store: <http://mobile-educationstore.com>) This app is designed to help children learn how to build grammatically correct sentences. A multi-wheel picker appears with between one and five words. The student is asked to build a sentence that describes the displayed picture. There is only one correct combination. In Level 1, both the subject and adjective of each sentence are fixed. The student chooses the modifier and the verb. In Level 2, the student chooses the modifier, verb and adjective. The student will be given either two, three, or five choices on each wheel. In Level 3, the student must also correctly choose the



**Sentence Builder** (Mobile Education Store: <http://mobile-educationstore.com>)

modifier, verb and adjective, but will have five choices in each picker wheel. There are 100 distinct pictures to build sentences around and 60 reward animations and audio clips. The app also tracks student progress.

Some free apps for speech and language: Talking Tom (definitely try this one), Dragon Naturally Speaking (you will be amazed at the accuracy of the speech recognition!), and NLConcepts: Sort and Categorize Game (great for categorization).

Watch for Part II of this article – I will be covering word processing, word prediction, printing options, apps for occupational therapy, apps for learning basic skills for adolescents and adults, word games and much more – maybe even FaceTime (we can only hope!).

Send me some of your favorites and I'll include them in a list! (Send to [ForTLL@aol.com](mailto:ForTLL@aol.com))

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# It's All About Independent Functioning!

## Using Technology to Develop Critical Life-Skills For Students with Autism Spectrum Disorder

By Susan K. Lewis Stokes

**S**elf-reliance and independent living skills are essential long-term goals for students with autism spectrum disorder (ASD), according to Klin, et al (2008). Therefore, a primary goal when teaching students with ASD should be to decrease dependence on adults. However, this can be quite challenging in school-based settings where the educational climate fosters adult support. Para-professionals have become increasingly common for educational programming to support students with ASD. However, use of 1:1 adult support is often not clearly defined, and the role can easily become one that creates prompt dependency in our students with ASD. For our students with ASD, who by the nature of their disability can become quite "prompt-dependent" due to their unique gestalt learning style, this instructional style can be extremely detrimental, resulting in life-long ramifications. Our students with ASD often learn the prompts given by adults as part of how they perform a task or skill, thus significantly decreasing their abilities to function independently.

Independent functioning is a critical life-skill that is essential to address as soon as our students with ASD enter early intervention programs. The level of independence that our students achieve will ultimately determine post high school options and placements, including post secondary education, employment and living opportunities. Brenda Smith Myles, a professor at the University of Kansas, reports that even though autism covers a range of intellectual

**EXAMPLE:** Jackson learned the skill to spontaneously go to his schedule location immediately upon completion of an activity. However, he could not proceed with independently checking his schedule to transition to the next scheduled activity unless verbally prompted by an adult to "Check your schedule." If an adult did not provide this prompt, Jackson would continue to stand in front of his schedule and attempt to seek out an adult's attention so that he could verbally prompt the adult ("Say... Jackson check schedule") to verbally prompt him to check his schedule so that he could complete the task as learned.

**EXAMPLE:** Maddie could verbalize "I want milk" but only in response to a verbal prompt from an adult, "What do you want Maddie? Say I..." When given this prompt, Maddie would then verbalize the utterance. However, if the prompt was not given, Maddie would become increasingly upset because she did not know how to independently communicate this message. She had learned the adult prompt as part of how to perform the skill to request milk.

abilities, few young people with autism are gainfully employed, primarily due to limitations in independent functioning skills (Myles, 2008). Myles further reports that only 12 percent of individuals considered having high-functioning autism have jobs, while only 6 percent with so-called classic autism are employed. As educators, we should be very alarmed by these statistics!

### **WHAT IS THE MOST EFFECTIVE METHOD TO TEACH STUDENTS WITH ASD INDEPENDENT FUNCTIONING SKILLS?**

Work Systems! In 1995, Division TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children) developed a concept known as "work systems" to reduce teacher support and



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develop maximal independent functioning for students with ASD.

Work systems were based on research that supports what has become fairly common knowledge amongst the autism community – that people with autism spectrum disorder tend to learn and process information best through their visual processing channel. (Krantz, MacDuff and McClannahan, 1993; Quill, 1995; Kuttler et. al., 1998). The Indiana Resource Center for Autism has identified work systems as a strategy that addresses independence as an essential outcome for students with ASD (IRCA Reporter, Fall 2004). In addition, work systems were recently identified as meeting criteria for evidence-based practice by the National Professional Development Center on Autism Spectrum Disorders (<http://autismcdc.fpg.unc.edu/content/structured-work-systems>).

## WHAT ARE WORK SYSTEMS?

According to Division TEACCH, a work system is a systematic and organized presentation of tasks and materials that visually communicates four pieces of information to the student with ASD, for increased independent functioning:

1. What is the work to be done?
2. How much work?
3. When will the work be done?
4. What is next?

Research supports that when the answers to these four questions are visually salient to the student with ASD, independent task completion increases significantly. Work systems assist in organizing a student by providing a visual, systematic work routine for independent completion of any task or activity.

## FOR WHAT AGES ARE WORK SYSTEMS EFFECTIVE?

Work systems are effective for all students identified with ASD, from ages three to 21 and beyond, into adulthood.

**1:1 adult support?** This person's role should be clearly defined for each environment and task/skill that the student requires support, with the primary goal to assist in developing and implementing visual structure that will increase the student's independent functioning, and thus decrease their need for adult support. In other words, the support person's goal should be to work themselves out of a job by teaching students with ASD independent functioning skills through work systems! See figure 1 for a planning guide to assist teams in defining a support person's role to increase independent functioning for students with ASD.

**EXAMPLE:** Joseph's teacher made an individual visual schedule to increase his independent functioning for navigating the school environment, using line drawings (Boardmaker icons) as the VRS. Joseph exhibited increased stress and anxiety through challenging behaviors when directed to check his schedule and required adult support to get to the appropriate scheduled activity. When the VRS was changed to photos (a more concrete VRS) to represent scheduled activities and environments, Joseph's anxiety significantly decreased, and he began to independently transition to the scheduled activity/environment.

## TEACHING A STUDENT WITH ASD A WORK SYSTEM FOR INDEPENDENT FUNCTIONING:

- Limit verbal prompts so that the verbal prompt does NOT become part of the routine! When it comes to talking ... less is more!
- Verbal prompts are the most difficult prompts to fade!
- Use hand-over-hand, gestural or physical prompts to instruct students on how to use independent work systems.
- Quickly fade the prompts (hand-over-hand, physical or gestural) to maximize student independence.

## VISUAL REPRESENTATION SYSTEM (VRS):

VRS is a critical component to consider for the design of work systems to increase students' independent functioning. What does the student understand best visually? The VRS should be instantly recognized and understood by the student. The most common error made is using a VRS that the student does not readily understand. See figures 2 and 3.

## WHAT ENVIRONMENTS AND ACTIVITIES CAN WORK SYSTEMS BE USED FOR?

Work systems can be used for development of *any* skill (e.g., academic, self-help, self-regulation, play, etc.), across multiple contexts or environments (e.g., independent work area, cafeteria, playground, bus, gym, etc.). See figure 4.

## TECHNOLOGY AND WORK SYSTEMS?

As various modes of technology are visual in nature, the use of technology is a perfect fit for increasing independent functioning for our students with ASD. Technology, from low tech to high tech, can easily be incorporated into work systems addressing every aspect of daily living in order to improve the independent functional capabilities of students with ASD.

## WORK SYSTEM EXAMPLE USING THE INDEPENDENT FUNCTIONING PLANNING GUIDE

Mariah's educational team completed the Independent Functioning Planning Guide to define the adult support person's role for this environment and activity and increase

**EXAMPLE:** Upon arrival at school in the morning, Mariah struggled with independently transitioning from the door of the school to her cubby. She often became distracted in the overstimulating school hallway and easily lost sight of where she was going (her cubby) and what she should be doing (complete morning arrival procedures). As a result, Mariah required 1:1 adult support upon entering the school door to get to her cubby and continued adult support to stay at her cubby to complete the morning arrival routine.

INDEPENDENT FUNCTIONING PLANNING GUIDE				
Student:			Date:	
Environment(s) Student Needs Support	Task(s) Student Needs Support	Independent Target Skill(s)	Strategies to Increase Independent Functioning Low Tech / High Tech	Implementation Plan
1. What is the work?	2. How much work?	3. When will work be all done?	4. What is next?	

Figure 1 - Independent Functioning Planning Guide.

Mariah's independent functioning skills. See figure 5.

**Cubby Transition Card:** This visual strategy was used to increase Mariah's independence for navigating the school hallway. Upon arrival at school, Mariah was directed to take the "cubby" card that was attached to the wall right inside the school door. She then carried the visual strategy to her cubby, where she matched the card to a larger visual located at her cubby. Using this visual strategy increased Mariah's attention to where she was going (to her cubby) and her ability to independently transition to this location. See figure 6.

**AM Procedure Checklist:** This work system was used to increase Mariah's attention to this step-by-step task for morning procedures and her ability to independently complete this task. This work system was located at Mariah's cubby. Upon completion of each step, Mariah moved the visual icon to the "all done" side. The last visual icon on her morning procedure checklist was a "check schedule" prompt, for her to independently transition to her daily schedule to start her day. See figure 7.

**Tip for step-by-step checklists:** To increase a student's focused attention to each step of the task, it is important for the

Visual Representation System Hierarchy			
<div style="font-size: 2em;">↓</div>	Concrete	VRS	Examples
		Real Objects (3 Dimensional)	Actual objects
		Minature Real Objects (3D)	Mini doll shoe to represent shoe
		True Object Based Icons (2D)	2D VRS (photos) cut out in the shape of the items they represent to give students additional tactile and kinesthetic information to more readily process the VRS
		Photos (2D)	Digital photos: Picture This photo software; Google images
		Line Drawings (2D)	Boardmaker®; SymbolStix®; Literacy Support Pictures
Abstract	Written Word (2D)		

Figure 2: Visual Representation System Hierarchy



Figure 3: Example of a VRS Hierarchy for "Cheez-it" crackers

### Work Systems

Environments	Skills
<ul style="list-style-type: none"> <li>• Bus</li> <li>• Hallway</li> <li>• Classroom</li> <li>• Cafeteria</li> <li>• Gym</li> <li>• Playground</li> <li>• Independent work areas</li> </ul>	<ul style="list-style-type: none"> <li>• Play</li> <li>• Self-help</li> <li>• Organization / sequencing</li> <li>• Academics / organization</li> <li>• Self-regulation</li> </ul>

Figure 4: Work systems for various environment and skills.

## INDEPENDENT FUNCTIONING PLANNING GUIDE

Student: Maria

Date: 12/10/10

Environment(s) Student Needs Support	Task(s) Student Needs Support	Independent Target Skill(s)	Strategies to Increase Independent Functioning		Implementation Plan
			Low Tech	High Tech	
Hallway	Morning-arrival routine	Transition from door of school to cubby; complete AM arrival routine; check schedule to start school day	Low Tech: Cubby Transition Card given (or student takes) at door of school. Student then transitions to cubby and matches to corresponding visual at cubby. VRS: Line drawing	Low Tech: AM visual procedure checklist VRS: Line drawings	SLP / OT: Make visual strategies  Instructional Assistant: Teach Mariah how to use strategies starting with hand-over-hand prompt, and then gradually reduce prompting to gestural (i.e. tapping visual strategies to draw attention). Limit talking!
<b>1. What is the work?</b>	<b>2. How much work?</b>	<b>3. When will work be all done?</b>	<b>4. What is next?</b>		
Independently complete AM arrival routine	What is listed on AM procedure checklist	When all tasks are completed and icons moved to "all done"	Check individual visual schedule		

Figure 5: Independent Functioning Planning Guide Example

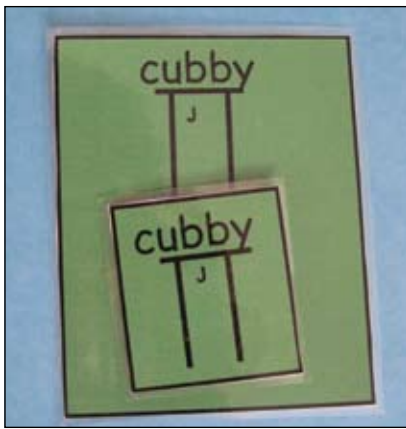


Figure 6: Cubby Transition Card.

student to interact with the work system for each step of the task by either crossing/ checking off the completed step or moving the icon representing each step to an “all done” location.

### LOW TECH WORK SYSTEM EXAMPLES:

#### Environment (See figures 8 - 15)

- Colored floor tape to define environmental boundaries to increase independent functioning.
  - Where to line-up in the classroom, on the playground, etc.
  - Define seat for bus, cafeteria, etc.
  - Food boundaries – square taped off on cafeteria table to define student's food versus others' food on the table.
- Independent work areas for school or home: A scheduled activity in a designated location for students to learn how to work independently, from start to completion, for increased periods of time. The goal of this work area is for the student to learn to work independently, NOT how to complete tasks.

#### Setting up independent work areas:

- Establish a location for independent work time.
- Put simple tasks, ones that a student can easily do on their own, in the independent work area (e.g., “Put in” tasks).
- It is imperative that tasks are set up for the student to complete independently. That is, that the student understands the task expectations and completes it independently, without requiring an adult to manipulate or lay out materials prior to the student starting the task. If a student is struggling with this aspect of the task – even though the adult knows that they have the skill to complete the task – the task will still need to be



Figure 7: AM Procedure Checklist



Figure 9: Colored floor tape to define where student should line-up.



Figure 8: Left-to-Right work system Independent Work Area

re-vamped so that the student can complete it independently.

- If students need adult assistance for any task for completion, the task should not be in their independent work area.
- Start with only a few very simple tasks for the student to complete in an independent manner.
- Left-to-right work system: Activities to be completed are located on the student's left; a finish box/basket/folder is located to the right of the student. Tasks can be completed in any order, in a left-to-right manner. This is the easiest

independent work system for students to learn. See figure 8.

- Matching work system: Student is given a work job list to complete tasks in a specific order. The order is determined by matching the items on the list to the task. Students can match color, shape, alphabet, numbers and words, whatever the student is able to match!
- Written checklist work system: A written list of work to be completed.
- During the instructional phase, the trainer should stand behind the student to physically or gesturally prompt them

through the work system, with no verbal prompting (to prevent the trainer's verbal prompt from becoming part of the routine).

- The independent work area can be scheduled multiple times each day for students.
- Tasks can be set up to focus on academic skills, play skills, domestic skills, vocational skills and recreational skills.

**Resources:**

- Tasks Galore books at [www.tasksgalore.com](http://www.tasksgalore.com)
- How do I Teach This Kid? by Kimberly Henry

**Skill Areas:**

- Self-help skills: Work systems for teaching students to independently wash hands, complete toileting routine, get ready for school, get ready for recess, etc.
- Organization/Sequencing skills: Work systems to increase students' skills for understanding and completing a sequence of activities, such as individual visual schedules, "First - Then" work systems, locker schedules, checklists for task completion, etc.
- Self-regulation skills: Work systems to teach independent skills for self-regulation, such as regulated breathing, the Incredible 5-Point Scale, Communication Problem Solving page, etc.



Figure 10: Two-sided Bathroom Pass.

2/26/10

**Griffin's Schedule**

✓	Music / Gym / Art	☺
✓	Reading 1. Read story pg 92-100 2. Reading worksheet 3. Popcorn	☺
✓	Pressure Writing	☺
✓	Recess <b>Indoors</b>	☺
	Math 1. pg 85-86 Listen 2. pg 86 1-10 problems 3. Math game	
	Lunch	
	Science	
	Pressure Writing	
	<b>Guidance</b>	
	Social Studies	

Figure 12: Individual Visual Schedule.

**HIGH TECH WORK SYSTEMS**

These evidence-based practice high tech work systems teach students with ASD numerous and varied independent skills through motivating mediums (i.e., computers and videos). Research supports that students with ASD exhibit significantly increased focused attention to target skill(s) when the speed and distractions of "real life" instruction and situations are removed, such as through the use of computer assisted instruction and video modeling/video self-modeling. Most importantly, these high tech strategies allow for

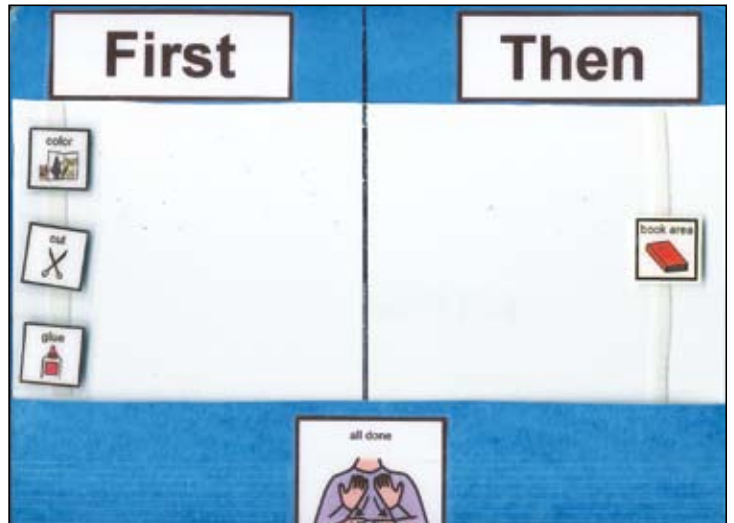


Figure 11: "First-Then" work system.

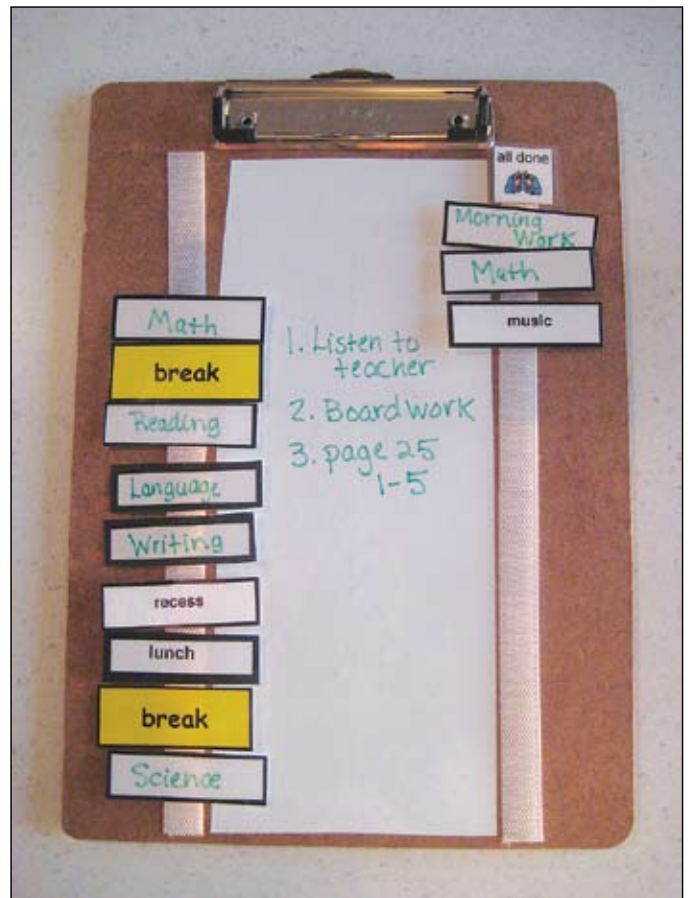


Figure 13: Individual Visual Schedule

repetitious viewing of the target skill(s), presented in a consistent visual format, which is conducive to the learning style of many students with ASD.

**Examples of skill areas that can be addressed to increase independent functioning through high tech work systems:**


- Self-help (e.g., washing hands, putting on winter outerwear for recess, brushing teeth, making the bed, setting the table, etc.)
- Organizing/Sequencing (e.g., AM/PM procedures, lunch routine, getting a book from the library, etc.)
- Self-regulation skills (e.g., relaxation strategies, such as regulated breathing, accessing a designated “quiet spot”, etc.)
- High tech work system examples to increase independent functioning include:
- Computer:
  - PowerPoint presentations
  - Computer software programs (e.g., Conover Company’s Functional Skills System [www.conovercompany.com](http://www.conovercompany.com);

Attainment Company [www.attainmentcompany.com](http://www.attainmentcompany.com); etc.)

- Video modeling (VM)/video self-modeling (VSM): Self-made videos where the student with ASD watches others (VM), or self (VSM) engaged in target skills. A few examples of commercially produced videos for video modeling:
  - Activity Trainer: [www.dttrainer.com](http://www.dttrainer.com)
  - Watch Me Learn: [www.watchmelearn.com](http://www.watchmelearn.com)
  - Social Skill Builder: [www.socialskillbuilder.com](http://www.socialskillbuilder.com)
  - Model Me Kids: [www.modelmekids.com](http://www.modelmekids.com)
  - YouTube!
- Apps for the iPod Touch, iPhone, and iPad: There are thousands of apps appropriate for teaching independent skills for students with ASD in various skill areas. Some examples include:
  - Organizing and sequencing:
    - iPrompts: \$49.99
    - First – Then Visual Schedule: \$9.99
    - ToDo: \$9.99



Figure 14: Communication Problem Solving Work System for self-regulation.



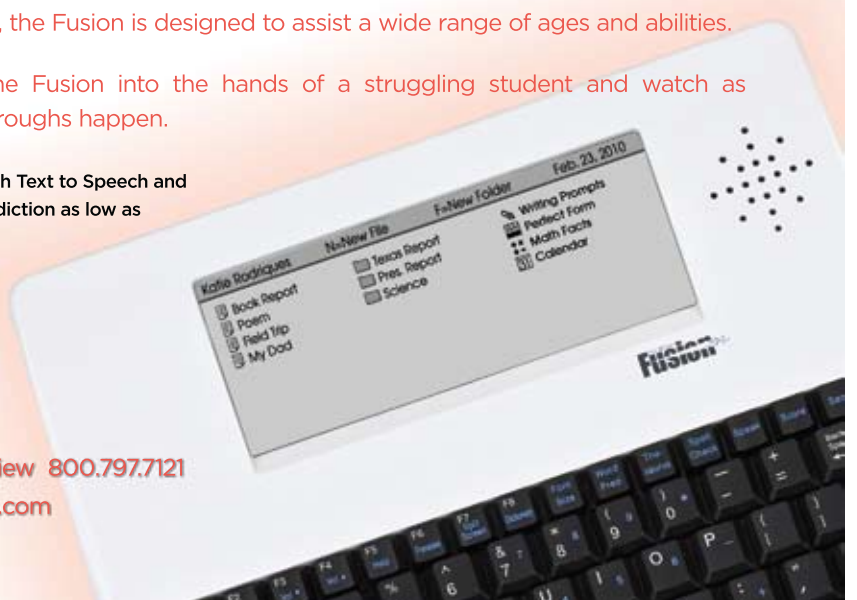
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- Model Me Going Places – free
- Stories2Learn (create your own individualized social narratives to teach skills) - \$13.99

In summary, independent functioning is a critical life-skill for students with ASD to learn, in all facets of their lives. Use of technology, as independent work systems, can greatly facilitate this learning to possibly further enhance positive outcomes post high school for our students with ASD. Independence is the key to our students' successful community inclusion and future

employment, and time is of the essence for developing this skill in our students with ASD.

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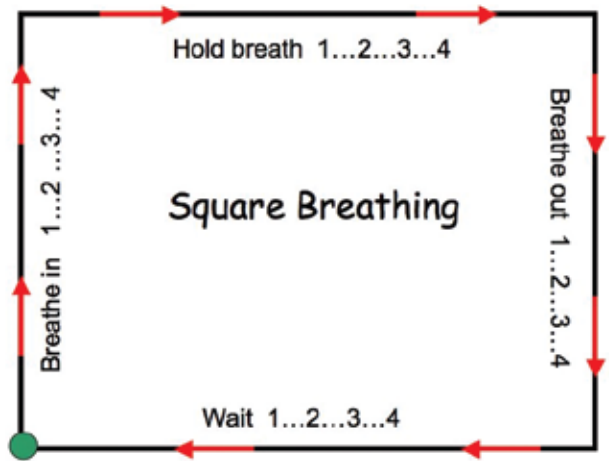


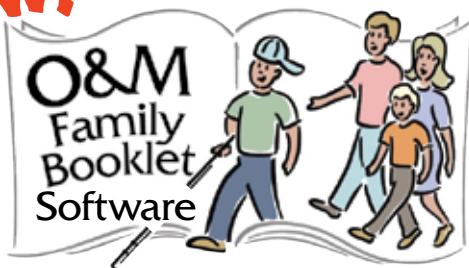
Figure 15: "Square Breathing" for teaching regulated breathing for self-regulation.

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# Lights, Camera, Interaction!

## Focus on Video Modeling Techniques for Inexpensive, Fast and Customized Solutions for Improving Social Skills

By Laurie Jacobs

**W**hen my sister and I began Social Skill Builder in 1999, we were looking for a way to bridge the social language gap to help kids with ASD, Asperger's and other learning disabilities achieve success in social situations. Social Skill Builder has created a series of learning tools that use videos of real kids in computer assisted programs to help teach social understanding. As the video scenarios unfold, the child or adolescent user steps inside familiar social situations to make choices, predict outcomes and problem-solve. With the attraction of the computer, motivating reinforcements and games, the task of learning social skills becomes fun and entertaining. This unique training software provides a reference for language, behaviors and interactions that the children learn to carry into their natural environments.

Users of Social Skill Builder software have exhibited increased confidence and acceptance of transitions in different social scenarios, increased expressive language skills, and decreased anxiety and negative behaviors in situations that once caused problems. Often, social learning opportunities occur so quickly that the teachable moments of body language or a glance are gone before they can be identified, but with Social Skill Builder software, each scenario can be paused, with the opportunity to replay scenarios and study the different layers of social cues for greater understanding. Such practice provides children with more intuitive insight into social interactions and increases their

confidence as they try out new skills in their real-world environments.

### **WHY SOCIAL SKILLS TRAINING?**

A 1992 Duke, Emory University study showed that nearly 93 percent of communication is nonverbal, requiring acknowledgement of gestures, body language and facial expressions. Unlike their peers, children who struggle with pragmatic language do not acquire basic social skills through general experience and observation, usually because of the complexity of the interaction and all of the "unwritten" and situational-dependent rules. Social skills training uses problem-solving techniques to actively teach children the skills they need to be successful and to cope with challenging situations in their social environment. Research has demonstrated that video social skill training using real peer subjects (as opposed to drawings or cartoons) is one of the most effective treatments for helping children with ASDs and other learning disabilities succeed in their interpersonal and social awareness.

Additionally, research has established that many students with pragmatic learning disabilities, particularly those with ASDs, are drawn to visual stimulation and are often visual learners. Because of this visual inclination, video modeling of social skills meets these students where they learn best. As Dr. Temple Grandin, a professor, author and researcher with autism explains, "I think in pictures. I do not think in language. All my thoughts are like videotapes running in my imagination. Pictures are my first language, and words are my second language" (Grandin 2002).

We have found great success and seen lasting improvement using teaching strategies that capitalize on the visual learning strengths of



**LAURIE JACOBS,** M.A. CCC-SLP, is co-founder of Social Skill Builder, a company launched in 1999 to provide computer-based tools for teaching social skills to children affected by Autism Spectrum Disorder (ASD). Laurie, along with her sister and co-founder Jennifer, develops her software products based on the unique needs of her ASD clients.

She can be contacted at Social Skill Builder, Inc., PO Box 2430, Leesburg, VA 20177.

children on the spectrum and allow for repeated evaluation of targeted social behaviors. Social Skill Builder products provide a great outline and guide to start you on your way to using video training techniques by providing the foundational social videos of situations typically seen in a preschool, elementary school or middle school or out in the community and pairing them with systematic levels of understanding, question probes and scoring.

Purchasing Social Skill Builder products to kick start your video modeling library is beneficial to familiarize the parent/professional and student with how simplistic to complex videos and questions should fit into a hierarchy of social learning. Once the parent or instructor is comfortable with the structure of the programs, they can begin to fill in with customized videos that they have created for their particular child or facility. The following levels of skill progression are incorporated into our software and provide an outline for dissection and discussion of the video scenarios that lead to social awareness and integration:

**Level 1, build vocabulary.** Treat the video footage like a picture book, describing what the children are doing. “The children are standing in a line.”

**Level 2, use vocabulary to introduce choices.** As the videos become stories, begin to offer choices that encourage your student to engage in the scenario. Choices build options for those struggling with the knowledge or language to elicit their own response. “When we stand in line, what should we do? (Pause for response.) Should we stand still or push each other? Should we wait our turn or run to the front of the line?”

**Level 3, use vocabulary to expose feelings.** This level assumes a solid use of basic vocabulary and provides a building block toward the critical social skill of predicting outcomes. At this level, focus on feelings through the video subject’s words or body language. Focus on telling the story through emotions. “What would you do if you saw your teacher crossing her arms and clearing her throat? (Pause for response.) ‘Pay attention’ is correct. Do you think your teacher is frustrated or angry? You’re right. When someone crosses their arms it means they are upset.”

**Level 4, feelings and body language lead to inferences.** It is important to discuss contextual cues in the video subject’s body language, behavior and emotions. While

“

Research has demonstrated that video social skill training using real peer subjects (as opposed to drawings or cartoons) is one of the most effective treatments for helping children with ASDs and other learning disabilities succeed in their interpersonal and social awareness.

”



this seems similar to Level 3, it is critical to teach and reinforce because so many ASD learners struggle with nonverbal communication cues and making inference. Take the discussion further: “What is the girl in the video doing with her body to show that she is sad?”

**Level 5, expand upon choices.** This level introduces the social nuances that allow one to compare and contrast similar scenarios to determine the most acceptable pragmatic language and behavior in any given situation. Because social awareness is so subjective, this allows the person with whom you’re working to make a detailed analysis of the better versus the best outcome. “That boy was yelling in the store because they did not have his favorite ice cream. What is your favorite ice cream? Do you like other kinds of ice cream? What are some other things you could do if the store did not have your favorite flavor?”

## BEYOND THE BASICS: MAKING YOUR OWN VIDEOS

I sometimes liken Social Skill Builder software to the solid basics of a good wardrobe: we have the jeans, the shoes, the socks, the sweaters. We’ve already covered standing in line without cutting, talking or pushing, eating quietly and politely in the cafeteria,

taking turns on the playground, bully awareness and hundreds of daily, basic scenarios. The software contains graduated levels of learning as skills are mastered, so use our products to cover the behavioral basics and as a model of the different ways to address targeted behaviors. Then, add to the “wardrobe” with your own custom videos on specific behaviors, otherwise known as “do-it-yourself” (DIY) video modeling. You don’t need to reinvent the wheel, just build on what is readily available to get the best possible outcome for your student.

## DIY VIDEO MODELING IS ECONOMICAL AND FEASIBLE

The technology available now is perfect for DIY video modeling because it is economical, readily available and easy to use. It is no longer necessary to rent or purchase complicated AV equipment because most of us already have mobile phones with cameras or digital cameras, and small video cameras can be very economical, plus the technology is convenient and easy to manage. One of my favorites is a FLIP video camera that plugs straight into a computer USB port. The camera contains all the software needed for editing, compressing, organizing and even adding narration or music.

## VIDEO MODELING GUIDELINES

The primary rule of video modeling is to present real people in real scenarios, rather than cartoons or drawn images. It is critical to focus on facial and body expressions to convey both verbal and nonverbal cues and to use same-age peers whenever possible.

When you begin planning your DIY video modeling project, first evaluate your student – what are their challenges and needs? Each video should focus on one concrete skill. Keep the video very short – no more than 30 seconds. Don’t overload the student with too much action or too many choices that will cause them to lose focus. It is important to eliminate even small distractions, such as a t-shirt with words or pictures, or background noises or activity that can cause the student to fixate on something other than the task at hand.

Communication between parents, therapists and teachers is essential to key in to specific behaviors to target together. Refer to the video during daily situations that arise, and ask the student about the video they

watched when they are in the situation themselves. Get the student into the habit of using the videos that they store so well in their memory as a guide to make better social guesses and make the video learning experience an integrated part of their daily life.

Keep things positive! Show the correct way to do something first, and then encourage the student to predict the positive outcome of a correct behavior with the goal of gradually introducing the consequences of negative behavior. Always keep in mind the objective of meeting the student's pragmatic needs and goals.

Think about how to maximize every part of your videos to extract the full learning value, as well as the time and money that have been invested. For example, pull a still photo from a video and discuss it with the student. Point out posture, facial expression, eye contact, personal space, etc. You can use a still photo or a small clip from a video to stop the action and break down a skill into smaller steps in order to ensure learning. That's what a lot of therapists do with Social Skill Builder products; they break down the lessons into more basic chunks and ultimately build the skills up to the full level.

For portable cuing of social situations, I often take a screen shot of a video or picture to take into a student's own environment. For example, if a student is having trouble waiting in line, I will play the video with him and then print off the screen shots and take them with us to practice when he is standing in line at school. This will help carry over the concepts and consequences learned in the program to his own waiting behavior, and it makes use of a video that you already have.

It is very important, with any DIY video project, that you obtain proper permission to take photos and videos of children. Many schools have signed photo waivers on file, and parents should be included in the decision and give authorization to take photos and videos of their children and the future uses of these projects.

## FREE SOCIAL VIDEOS ONLINE

In addition to available pragmatic language software and DIY video modeling, a wealth of free tools for teaching social skills can be found by a simple Internet search on social language videos. YouTube and TeacherTube are fantastic sources of social videos. Subscribe, upload and join groups! Remember, you are looking for short videos using real pictures and succinct narration to show the skill you are focusing on.

Try these sorts of free video social stories in conjunction with Social Skill Builder's teaching software for even more versatility and application. For example, if you are working with a student on what to do when they go to the movies, use your DIY video or an online video as a basic overview, then dig deeper with the detailed analysis of our My Community CD's movie theater series of videos. As the student gains understanding and mastery of the skills through the software, use the still pictures from the YouTube video to have them create their own "social story" of going to the movies. This activity allows the student to carry skills over into another context, taking them closer to the goal of incorporating the skills into their natural environment.

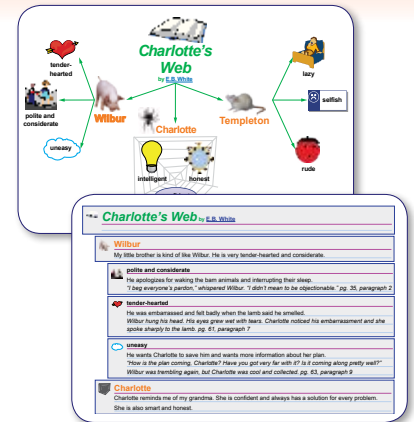
Social Skill Builder has several instructive YouTube videos on DIY video modeling. Visit [www.youtube.com/socialskillbuilder](http://www.youtube.com/socialskillbuilder), and click on uploads to see the available videos. Some clips give tips specifically applicable to Social Skill Builder software, and some give more generic video modeling tips.

## CONTACT US

Would you like to learn more about using video modeling to teach social skills? E-mail us at [info@socialskillbuilder.com](mailto:info@socialskillbuilder.com) or call 866-278-1452 for more information. Visit [www.socialskillbuilder.com](http://www.socialskillbuilder.com) for product information and demos of our software. Click on Products, then Choosing the Right Tool to see which programs target the specific skills you are looking for. Our social skills product line includes:

- Preschool Playtime Volumes 1 and 2: behavioral expectations outside of the home, social relationships, peer conflicts, sensory issues, playground, preschool, park and outing. \$69.95 each
- My School Day, cognitive age 6-12: rituals of recess, peer relations, appropriate classroom behavior, lunchtime interactions. \$89.95
- My Community, cognitive age 5+: social expectations, safety precautions, social behavior, community setting – doctor's office, grocery store, neighborhood and more. \$89.95
- School Rules! Volumes 1 and 2, cognitive age 8 – 18: social interpretation skills, personal awareness, conflict resolution, organization. Scenarios include: getting lunch, eating, talking to friends, hanging out, using schedules and time management. \$89.95 each. ■

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# Two Primary Reasons Switch Access Is **NOT** Successful

By Karen M. Kangas



**KAREN KAGAS**, OTR/L, is a nationally certified and state licensed Occupational Therapist, Seating and Positioning Specialist, Assistive Technology Specialist, Clinical Educator and Consultant. She can be contacted at 6925 Upper Road, Shamokin, PA 17872; E-mail: [kmkangas@ptd.net](mailto:kmkangas@ptd.net)

## THE SWITCH HAS BECOME THE ACTIVITY, RATHER THAN A SUPPORT TO AN ACTIVITY

Switch selection has long been a process in the field of assistive technology as students are being assessed for their access and use of a computer and/or an augmentative communication device and/or a powered wheelchair.

When switches first became available, they were all mechanical switches. Switch lists were made as to size, force required, mounting best utilized, etc. However, all these switches had one thing in common, they were mechanical.

A mechanical switch requires five acts to manage it: step one, the switch must be located (this most frequently occurs visually); step two, then it must be touched; step three, then it must be pressed; step four, then it must be held; and finally, step five, it must be released. The only variation in this process is in step four, as the activity will dictate whether the switch needs to be held for a period of time (while driving forward in a powered chair) or held for a quick moment (while choosing an icon/letter on an on-screen keyboard or an AAC device).

Switches have been made large, larger, largest. Switches have been made small, smaller, smallest. Switches have been made pretty, fancy, visually exciting. It's true, this has made, for some students, the switch more

obvious to "locate."

However, as this "location of the switch" has become the focus, then the switch, itself, has become the activity.

Isn't it more important that the switch be transparent to the activity, and the activity itself be the focus?

If the use of the switch to manage an AAC device or manage activities on a computer is the goal, the switch cannot be located in a central location, it can't be the focus of the activity and it can't be so large that it's unavoidable to manage.

The switch needs to become transparent to the activity if the activity is functional communication, functional writing and/or functional mobility.

If functional communication, literacy, writing and/or mobility are the primary activities being supported and taught, then the switch must not be the focus.

This can occur most easily by using "zero-force" switches or electronic switches. With a switch that requires NO force, there are two steps to manage it; step one is location, which is also activation, and then step two is release.

What type of students are most frequently expected to manage switches? Students who have complex bodies; students who have high tone, fluctuating tone, or decreased tone; students who have unpredictable surges of force or flailing extremities; or students who fatigue easily and whose muscles are weakened by disease.

These students are not children who have easy access to graded movement or to quick actions, managed in coordination. Yet, the activities they are being asked to manage require them to first see a monitor or display; then to locate symbols or letters within that monitor or display; then watch an arbitrary scanning routine (time, length of scan, configuration of symbols that have been created by an adult working with them); then, manage that scanning routine by waiting for the scan to evidence itself; and then

manage the five steps of switch access. The only exception to this above procedure is if the scanning array is one of two-switch, non-timed scanning. However, the five-step switch protocol must be utilized extensively to move around the display/monitor.

Since this is a lengthy and complicated process (complicated for some students in its motor challenges; complicated for some students in its cognitive challenges, and complicated for other students in its lengthy routine), it is not surprising that few students, students who most need functional independence in these activities, are, indeed, the least successful.

Switch placement and switch focus then become of fundamental importance. Next, the scanning array, or choices of words/letters/icons, becomes smaller. The student can frequently be given an activity with a single switch and with only two choices.

Limited choices do not make a scan. Limited choices do not encourage communication. Limited choices, in fact, limit learning.

Limited choices in a scanning array on an augmentative communication device can most certainly presume its lack of communication. Only the most competent communicators (fluent speakers, fluent readers, fluent writers) can use "shortcuts" for adequate communication. Students who are learning to speak, learning to read, learning to write or learning to communicate must be immersed in spoken and written language.

It must be remembered that spoken language and written language are not the same. Spoken language occurs in one part of the brain, while written language occurs in another part of the brain. Scientists are studying this relationship and still are not sure how they relate or work together. Using an AAC device to speak is more like reading and writing than it is like speaking. When writing, the student must first have an idea, then she must "translate that idea" into arbitrary symbols (could be letters of the alphabet or icons), then she must "find" these symbols on a device, then she must choose them in a specific arrangement, and then she must produce them. This is exactly what happens when writing.

In short summary, to manage an AAC device and/or an on-screen keyboard, the student must first be able to manage the process of writing (yes, that whole process above), then manage the machine as it has been "set up" for her by someone else (the scanning display, the configuration of each page, the choice and arrangement of letters/symbols/icons), and then the switch (its five steps).

This is complicated. This process requires a huge amount of cognitive and motor processing. This process is easily fraught with

errors, but frequently, it is difficult to ascertain whether the "error" is an error of body control, and/or of switch control, and/or of icon selection, and/or of array management, and/or of activity management.

Using an electronic switch, one of zero pressure, cannot solve all the potential roadblocks described above, but use of electronic switches can assist the student in dramatically altering her efficiency of access.

Using an electronic switch immediately presents the switch as transparent to the activity, if switch placement is adequate. For many students who have little control of their bodies, this initial switch placement can be at the head, embedded in a true headrest. Force is not required. Just a slight movement near the switch's location activates the switch, and a subtle movement back to center releases the switch. With this configuration, two-switch scanning can be provided to many

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children who could never have managed the repetitive force required in multiple switch hits to a mechanical switch, especially a mechanical switch located near the head. (That would actually require "head banging.") Placement of one or more switches on a tray can now require a simple "slide" rather than picking up the hand and moving it. (The switches can be mounted below the tray, so that cables are not in the way.)

The electronic switches most readily available for use with children who have high tone, fluctuating tone, and/or weakness are proximity sensors. These sensors/switches work by electronic capacitance. Since our skin cells emit electricity, that capacitance can activate the proximity sensor. This sensor can be embedded in a padded headrest, and as the child moves to the headrest, the switch will be activated, or it can be located under a tray (taking obtrusive cables out of reach). The proximity sensor comes in a few different sizes and in two configurations, fixed and adjustable. The adjustable switch is able to be adjusted to "read" through varying depths of materials, like the depth of a tray. Yet, this switch is not activated by a book, just by a hand, or touch.

“It must be remembered that spoken language and written language are not the same. Spoken language occurs in one part of the brain, while written language occurs in another part of the brain. Scientists are studying this relationship and still are not sure how they relate or work together. Using an AAC device to speak is more like reading and writing than it is like speaking.”

Another electronic switch, especially helpful with students who have weakness, is a fiber optic switch. There are several different types (length of beam to be managed). These switches only need the light beam to be "covered" or "broken" to be activated. Due to their extremely small "footprint," multiple switches can be placed very close together for students with limited strength and range of movement.


For more information on electronic switches, contact Adaptive Switch Labs, Inc. ([www.asl-inc.com](http://www.asl-inc.com)), Comation ([www.comation.com](http://www.comation.com)) or AMDI ([www.amdi.net/switches](http://www.amdi.net/switches)).

### STUDENTS ARE NOT SURROUNDED BY COMPETENT, FLUENT MODELS.


For all of us in AT, teachers, therapists, and parents, a large investment in time and learning is natural to us, as we support our students' roads to success. We, ourselves, feel much pressure to get things set up and working right now. We spend hours, extra hours, programming, setting up, configuring, to ensure our students have real opportunities to communicate and use AT functionally. However, in all that time, we have forgotten that we are role models. We all know that

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when we talk about sign language, we talk about total communication, learning to orally speak as we sign. We are role models. Yet, when we are working with a student who is non-speaking and physically disabled, we do not model competency. We speak in our language, and do not use a total approach. We use speech, our speech, our language, yet we ask a student to use a device, a board, symbols, a switch, a mouse, or an infrared device, or their eyes to simulate our speech and our competent speech mechanisms and patterns. We direct our students on how to use tools that we, ourselves, do not use functionally. We expect our students to demonstrate a level of competent use of tools and techniques that we do not use to simulate a complicated pattern of motor behaviors that we do use. We do not provide them with competent role models; we teach them in a void of role models.

We must role model competence. We need to use AAC devices. We need to use switches. We need to use manual boards. We need to use symbols/icons to speak.

We seem to put tools "on" students and "in" their spaces and we tell them how to use them. We have not used it first, we have not used it with them, we have not used it alone. They do not see it within the environment being used consistently, functionally, regularly, powerfully and as a part of daily activity.

We have spent so much time and energy assessing, evaluating and trying out tools and techniques with students, yet we have not climbed into a wheelchair, taken a communication board and gone to a grocery store. We have configured overlays, agonized over vocabulary selection, spent hours programming devices, but have not spent even 10 minutes with an infrared mouse on our own heads writing a short letter or emailing a friend. We have readily taken "home" a device or software to "figure it out," but we have rarely taken home a communication technique or tool and used it for a couple of hours with our family and friends. We have not driven a powered chair to the community library. We have not accessed our favorite software program with a single switch and an on-screen array.

We need to develop and model competency. We need to become better role models in our classrooms and homes. Our students need to see us using the tools and techniques we are teaching them. We need to combine our teaching methods, our practices and the tools we give our students. We need to model competence, fluency, efficiency, and errors and their correction. We need to use the equipment, the vocabulary and the access equipment that we are hoping our students will master. The tools and techniques we are trying with our students need to become a valuable part of our own repertoire of skills.

### SOME INTERESTING FURTHER READING:

Translating Motor Control and Motor Learning Theory into Occupational Therapy Practice for Children and Young Adults,



Headrest with proximity sensors (switches) embedded.

Part One, Nov. 17, 2008, American Occupational Therapy Associations (AOTA Publications) OT Practice.

Translating Motor Control and Motor Learning Theory into Occupational Therapy Practice for Children and Young Adults, Part Two, Jan .19, 2009, American Occupational Therapy Associations (AOTA Publications) OT Practice. ■

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# Some of the Best:

## Advances in Special Education Technology Research

By Dave L. Edyburn

Over time, the federal investment in special education has been identified as one of the fundamental reasons why education for students with disabilities has advanced (West and Whitby, 2008). However, in recent years, the Individuals with Disabilities Education Act (IDEA) has been overshadowed by the emphasis on the K-12 education law known as No Child Left Behind.

One of the tenets of the federal No Child Left Behind law is the requirement that educators use scientifically-based research to inform their instructional decisions and practices (Edyburn, 2010). Many researchers have applauded this development. They argue that much is known about effective instructional practices that should be routinely used in classrooms in order to maximize student learning (Hattie, 2009).

On the other hand, practitioners have responded to this federal edict with caution and confusion. They raise questions like: How do we know whether or not a given instructional practice is research-based? Are we expected to read and critique research studies? What are we supposed to do if there is not adequate evidence supporting an instructional methodology or commercial materials that we intend to purchase? If an intervention has been shown to work with non-handicapped students, can we reasonably assume that the practice is also effective for students with disabilities?

At this point, there is much speculation surrounding the 2011 reauthorization of the Elementary and Secondary Education Act (ESEA, the federal law governing K-12 education before it was renamed No Child Left Behind in 2001). However, early indications are that most foundational concepts will be extended. As a result, there is an urgent need for the field of special education technology to mine its research knowledge base in ways that will inform evidence-based practice in K-12 schools.

### ACCESSING THE KNOWLEDGE BASE

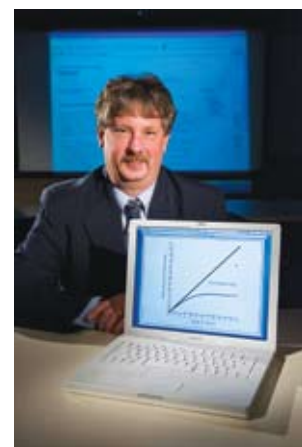
Since 1998, I have been conducting an annual review of the literature. Using a methodology known as “the comprehensive one-year review,” I review all articles published in 31 journals during a calendar year. The purpose is to analyze the new additions to the knowledge base to answer the question, “What have we learned lately?” (Readers interested in more information about my annual reviews are encouraged to visit: <http://people.uwm.edu/edyburn/what.html>).

I am well aware of the problem of information overload and the challenge of trying to stay up to date with the professional literature. My earlier efforts sought to fill this void by writing a comprehensive journal article that indexed the literature of the past year. However, this task began taking longer to conduct and editors were concerned I was filling too many journal pages. Since then, I have experimented with a variety of other containers for facilitating access to the professional literature (e.g., conference papers, a list of the top articles of the year and maps of the literature). According to my analysis of the 2009 literature, special education technology professionals need to read over 10 articles per week during the school year to keep up with what has been published in the past year. Clearly, we need new tools and new approaches to manage an ever-increasing amount of information.

In this article, I have created a must-read list of articles published in 2010 (see Table 1). I have organized the reading list around 10 themes that allow me to highlight 28 articles. For the most part, this list highlights some of the latest research. However, some articles are essays by experts in the field that alert leadership personnel to critical issues. As I write this article in December, not all journals have yet released their final 2010 issues. As a result, this list is not a definitive year-in-review reading list.

### SOME OF THE BEST ARTICLES FROM 2010

In the sections that follow, I highlight 10 topics relevant to special education technology professionals. I encourage readers to focus on the topics that are most relevant for their work and to consider establishing a local or online study group to obtain the original article, read the research, and discuss the implications of the findings. Ultimately, the profession must decide how it will respond to the external



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demands to document evidence-based practices. In the meantime, we must begin the conversations about how to use research to improve practice (Hattie, 2009).

## AAC

Given the scarcity of augmentative and alternative communication devices in the general population, the research on AAC devices is uniquely associated with special education technology. In addition, the specialized nature of these devices requires highly specialized knowledge to maximize their potential for an individual. Research by Dogoe, Banda and Lock (2010) and Prest, Miranda and Mercier, (2010) offer new evidence about the effectiveness of symbol supported communication by students with autism and Down syndrome respectively. Additionally, new qualitative evidence is provided concerning the relationship between writing, communication, AAC and self-efficacy of students who used on-screen keyboards with voice output communication devices (Carpe, Harder, Tam and Reid, 2010).

## ACCESSIBILITY AND USABILITY

Accessibility and usability are related, but distinct factors, that affect the value of technology products used by individuals with disabilities. A study by Liu, Chiu, Hsieh, and Li (2010) describes research and evaluation efforts to enhance the usability of mobile phones by individuals who are deaf. An international comparative analysis of wheeled mobility standards in four countries provides evidence regarding the need to update standards as a result of changing demographics and advances in wheeled mobility technology designs (Steinfeld, Maisel, Feathers and D'Souza, 2010).

## ASSISTIVE TECHNOLOGY RESEARCH METHODOLOGY

Over the past 15 years, increased attention has focused on the need to collect, report and use assistive technology outcome data. Korsten and Foss (2010) remind the profession that while data are easy to collect, it is essential that performance data are analyzed in ways that inform decision-making about the effectiveness of assistive technology devices and services. Research on the development of a virtual reality wheelchair simulator offers keen insights about state-of-the-art techniques for measuring key variables that reflect important outcomes associated with wheelchair use (Harrison,

“

“... there is an urgent need for the field of special education technology to mine its research knowledge base in ways that will inform evidence-based practice in K-12 schools.”

“In this article, I have created a must-read list of articles published in 2010 (see Table 1). I have organized the reading list around 10 themes that allow me to highlight 28 articles.”

”

Grant and Conway, 2010).

## EMERGING TECHNOLOGIES

Most technology professionals are enamored with new products. In many respects, our literature is characterized by an emphasis on what's

new. A secondary wave of attention and activity focuses on the integration of new products into the curriculum. In 2010, this pattern continues as we were drawn to new advances in the marketplace: Interactive whiteboards (Grant, 2010), iPod Touches (Banister, 2010), pedagogical avatars (Blake and Moseley, 2010) ubiquitous mobile computing (Bjerede, Atkins and Dede, 2010), and the Wii (Errante, Peterson, Gunther and Doyle, 2010). Typically, there is a three to five year lag between the time a product is available in the marketplace until research is published examining its efficacy in the classroom. As a result, few new products are adopted by schools based on research.

## EVIDENCE-BASED PRACTICE

The field of special education technology has considerable work to do to identify a body of research-based evidence to such a level that we can claim we are an evidence-based profession. Two recent additions to the knowledge base provide insight about how this might be completed. Kummerer (2010) describes evidence-based language interventions for Hispanic children with language-learning disabilities. Additionally, a literature review provides guidance on the use of coaching to improve the fidelity of teacher implementation of evidence-based practices (Kretlow and Bartholomew, 2010).

## INTERVENTIONS

Among the many studies published in the past year that examine the impact of a specific intervention, five are particularly noteworthy. First, the impact of audio support for struggling readers continues to be examined in many contexts (Wood, Kelley, Test and Fowler, 2010). Alternative formats in assessment contexts also continues to be an important line of research (Lee, Osborne and Carpenter, 2010). Most testing accommodation research seeks to identify a differential boost for students with disabilities. An accessible article for practitioners on this topic examines the boost in math assessment scores by students with learning disabilities (Lindstrom, 2010). Video-based instruction for students with moderate and several disabilities is found in the literature



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**Table 1 - Selected Readings From the 2010 Research Literature**

- AAC**
- Carpe, A., Harder, K., Tam, C., and Reid, D. (2010). Perceptions of writing and communication aid use among children with physical disability. *Assistive Technology*, 22(2), 87-98.
  - Dogoe, M.S., Banda, D.R., and Lock, R.H. (2010). Acquisition and generalization of the picture exchange communication system behaviors across settings, persons, and stimulus classes with three students with autism. *Education and Training in Autism and Developmental Disabilities*, 45(2), 216-229.
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on an annual basis and has demonstrated significant positive outcomes. Ayres and Cihak (2010) examine how computer- and video-based instruction of food preparation skills impacts academic performance in terms of the acquisition, generalization and maintenance of the skills. Finally, a key component of universal design for learning is the concept of engagement. Donovan, Green and Hartley (2010) report on a study of middle school students that sought to examine the relationship between a one-to-one laptop computer program and how increased access to technology might increase student engagement.

## SERVICE DELIVERY

Inclusion has profoundly altered the way special education is delivered in schools. Research continues to explore aspects of how to best deliver services to students with disabilities. This line of inquiry is likely to continue with the reauthorization of ESEA as response to intervention (RTI) models are further expanded. In the meantime, research by Basu, Salisbury and Thorkildsen (2010) provides an inspiring model of how to measure collaborative consultation practices in natural environments. Clearly the field of assistive technology could benefit from such an approach. Research by Simonsen, et al (2010) offers evidence that the role of special educators in school wide service delivery models might be redefined. Finally, Giangreco's essay (2010) takes issues with the routine way that paraprofessionals are assigned to individual students. In this article he seeks to initiate a dialogue to question the conventional wisdom associated with this practice. This conversation has significant implications for the provision of assistive technology because tools that promote independence are not valued in the same way as the provision of an adult assistant.

## STRATEGY INSTRUCTION AND TECHNOLOGY

Researchers have long explored how the power of strategy instruction may be extended with the addition of an appropriate technology intervention. Three examples are found in the 2010 literature. Cihak, Wright and Ayres (2010) studied how picture prompts, using a handheld computer, could facilitate self-monitoring in the general education classroom. Morgan (2010) examined how social networking Web sites could be used to teach students with emotional and behavioral disorders appropriate social skills. Finally, Strickland and Maccini (2010) outline research-based strategies for teaching algebra to students with learning disabilities.

## TECHNOLOGY LEADERSHIP ISSUES

Technology leaders are charged with monitoring trends and issues that will impact short and long term planning. Two recently published articles may be particularly useful in this regard. Lei (2010) summarizes a variety of lessons learned from a longitudinal study of ubiquitous computing. Lim, Chen and Hung (2010) observe that the trend to smaller handheld computing devices may require the profession to rethink the contemporary technology instructional model; they propose a learning model of "learner as developer."

## UNIVERSAL DESIGN FOR LEARNING

With the reauthorization of the Higher Education Opportunity Act of 2008 and the release of the 2010 National Technology Plan (<http://www.ed.gov/technology/netp-2010>), universal design for learning has become a centerpiece in school reform conversations. Edyburn (2010) reviewed the first 10 years of UDL and offers a prognosis of turbulent days ahead (e.g., adolescence) unless 10 new directions are initiated.

## CONCLUDING COMMENTS

The purpose of this article was to briefly highlight recent additions to the special education technology knowledge base. The goal was to provide a manageable set of readings for busy professionals to begin examining some aspect of evidence-based practice. I hope I have facilitated the process of getting started. However, the most important work, acquiring the article, reading it, discussing it and considering the implications for improving professional practice, lies ahead.

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# The AIMing for Achievement Series: What Educators and Families Need to Know about Accessible Instructional Materials



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## Part Three: AIM Support at Your Fingertips

introduction to the robust, resource-rich AIM Navigator, a process facilitator for decision-making teams. Part Three focuses on the National Center on Accessible Instructional Materials (AIM Center) Web site and the products that are available to support all with interests and responsibilities related to the provision and use of accessible instructional materials.

The AIM Center is located at CAST and funded by the U.S. Department of Education's Office of Special Education Programs (OSEP). The purpose of the AIM Center is to provide information, technical assistance and leadership that supports the implementation of the National Instructional Materials Accessibility Standard (NIMAS) and the development of systems that support timely provision of accessible instructional materials to students who need them for educational participation and achievement.

The AIM Center Web site is located at <http://aim.cast.org>. The site serves as a resource to state- and district-level educators, parents, publishers, conversion houses, accessible media producers and others interested in learning more about and implementing AIM and NIMAS.

Visitors to the AIM Center homepage can find information, such as what's happening in your state, the NIMAS primary contact for your state, upcoming Webinars and learning opportunities, a link to NIMAS-related resources located at [ed.gov](http://ed.gov). The homepage also provides access to the three major sections on the site: Learn, Experience and Collaborate.

The Learn section provides background information on the National Instructional Materials Accessibility Standard and accessible instructional materials (NIMAS/AIM) and is where the knowledge development information can be found. Some of the topics explored include AIM, accessible media, practice, policy, research, post secondary education and AIM for families.

**I**f students have difficulty reading or using standard print materials, they may require specialized formats of textbooks and related core print instructional materials. The complexities, challenges and opportunities related to the provision of accessible instructional materials (AIM) are explored in the AIMing for Achievement Series: What Educators and Families Need to Know about Accessible Instructional Materials. Part One of the series provided a general introduction to AIM and some highlights of the legal context. Part Two laid the foundation of a process for how state education agencies (SEAs) and local education agencies (LEAs) can make decisions regarding need, selection, acquisition and use of AIM and also included an

The Experience section includes information, tools and resources for training, decision-making and file conversion. Many of the products highlighted in this article are located in the Experience section under Teaching and Training Resources and Decision-Making Tools and Resources. The featured products were developed by the 15 states that were involved in the AIM Consortium, along with CAST, and these tools are now accessible on the AIM Center Web site. Information about upcoming and archived Webinars and presentations is also available in Teaching and Training Resources.

The Collaboration section is where everyone has the opportunity to not only gain information, but also use social media tools to be a part of building information through collaborative discussion with others. In this section, there are places to sign up for the AIM Connector, an e-Newsletter, join a listserv or participate in forums. The forums provide opportunities to take part in rich discussions around a variety of issues related to NIMAS/AIM.

We encourage you to further explore all the areas of the AIM Center Web site and to let us know if there are other things that we should include that would be helpful.

## **TOOLS AT YOUR FINGERTIPS AVAILABLE ON THE AIM CENTER WEB SITE**

In order to support effective decision-making in all phases of need, selection, acquisition and use, the AIM Center Web site (<http://aim.cast.org>) provides numerous training and teaching products that are Web-based and free to all. The only exception is the DVD, which is available for a nominal charge for duplication, shipping and handling.

### **• THE AIM NAVIGATOR**

The AIM Navigator, which was discussed in Part Two, is a free Web-based tool that facilitates the process of decision-making around accessible instructional materials for an individual student by IEP or other decision-making teams. The four major decision points in the process include determination of need, selection of format(s), acquisition of formats, and selection of supports for use. The AIM Navigator provides extensive support for decision-making at each point by providing guiding questions, resources and links to other tools created by the AIM Consortium. The AIM Navigator is available at <http://aim.cast.org/experience/training/navigator>.

### **• AIMING FOR ACHIEVEMENT DVD**

The AIMing for Achievement DVD includes content of national impact on a variety of topics, including legal issues, a student-centered decision-making process, an overview of specialized formats, a review of multiple sources from which to acquire specialized formats, and an overview of which students can receive materials from each source, as well as detailed discussions about technology and other supports for using accessible instructional materials. The DVD content is designed to be useful across multiple environments with differing models of service provision rather than highlighting a single model. The DVD contains interviews and illustrative scenarios that increase awareness and knowledge that support timely provision of AIM to students who need them for educational participation and achievement. An informational video about the AIMing for Achievement DVD can be viewed on the AIM Center Web site at <http://aim.cast.org/experience/training/AIMAchvDVD>). This location also provides information about obtaining copies of the DVD at a nominal cost when it becomes available.

### **• THE AIM EXPLORER**

The AIM Explorer is a free downloadable simulation tool that combines grade-leveled digital text with access features common to most text readers and other supported reading software. Educators, families and students can use the AIM Explorer to try out a variety of settings for magnification, colors of text and background, text-to-speech (synthetic and human), text highlighting and layout options. Each of these features is presented in a logical sequence, and working through the simulation can help educators, families and struggling readers decide ways in which these supports can be configured to help with access to and understanding of text. The AIM Explorer collects information as users progress through the system and creates a summary report that includes all collected information. The summary report can be printed or saved to a local computer. Information on how to download the AIM Explorer is available at <http://aim.cast.org/experience/training/explorer>.

### **• USER'S GUIDE TO FEDERALLY FUNDED ACCESSIBLE MEDIA PRODUCERS**

The User's Guide to Federally Funded Accessible Media Producers provides detailed and "at-a-glance" formats of in-depth information about the three federally-funded accessible media producers – Bookshare, Recording for the Blind and

Dyslexic and the American Printing House for the Blind. The User's Guide includes a detailed list of Frequently Asked Questions (FAQs) completed by each of the featured accessible media producers and a side-by-side summary chart that includes the information. The AIM User's Guide is available at [http://aim.cast.org/learn/practice/acquisitiondistribution/amp\\_survey](http://aim.cast.org/learn/practice/acquisitiondistribution/amp_survey).

### **• AIM PRODUCT TUTORIALS**

The AIM Product Tutorials include 101 captioned videos that provide detailed, practical instruction for classroom and home use of 10 AIM-related assistive technology products. The 10 products featured in the AIM Product Tutorials are those identified by the AIM Consortium state leaders as the most commonly used products across their states. The AIM Product Tutorials also contain a printable AIM Products Features Chart that includes the 10 products and links to the manufacturers of each product so that users of the tutorials know where to find information about updates and new releases of the products. Each of the captioned videos included in the AIM Product Tutorials are accompanied by a complete transcript. The list of products, videos, transcripts and Summary Chart of Features included in the AIM Product Tutorials are available at <http://aim.cast.org/experience/training/tutorials>.

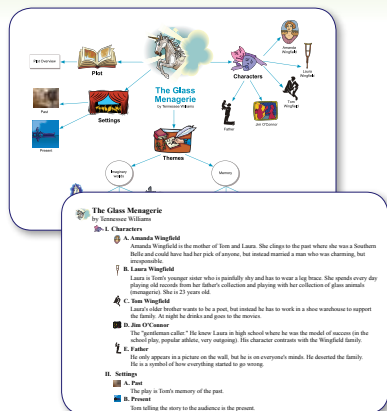
#### **• AIM Implementation Guide and Video**

The guide, Text-to-Speech (TtS) and Accessible Instructional Materials (AIM): An Implementation Guide for Use of TtS and AIM in Secondary Classrooms, contains materials that provide state and local education agencies with the supports and strategies needed in order to design and implement programs in which accessible instructional materials and text-to-speech technology are routinely used by secondary students with print disabilities. This project includes two major products: a comprehensive guide that can be downloaded and printed on demand and a dynamic video that demonstrates the efficacy of using AIM and TtS to achieve successful outcomes by students with print disabilities. The content of the guide includes tools for planning, implementing and evaluating the outcomes of AIM-infused programs. Both, the print-on-demand guide and the streamed video, are available to at [http://aim.cast.org/experience/training/aim\\_implementation\\_guide](http://aim.cast.org/experience/training/aim_implementation_guide).

### **• AIM ONLINE COURSES**

Two graduate-level courses have been made available to colleges, universities and professional development groups who are interested in offering comprehensive courses on AIM-related issues. AIM 101: Accessible

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Instructional Materials provides basic foundational knowledge about the provision of AIM; and AIM 102: Preparing AIM for Students with Print Impairments provides an understanding of various types of instructional materials used in classrooms and tools, strategies and training necessary to prepare students with print disabilities to effectively use these materials. The courses were developed to be delivered asynchronously via Moodle, a robust online course management system. The advantage of the Moodle system is that the entire course – lessons, activities, assignments, discussion groups, etc. – can be compressed and exported for use by others. These courses are expected to be facilitated by a sponsoring group and are not intended to be used by an individual for independent study. Information about the courses and a link to further information can be located on the Web at <http://aim.cast.org/experience/training/courses/>.

## IT'S HARD, BUT OPPORTUNITIES ARE JUST A FINGERTIP AWAY!

SEAs and LEAs are finding that there are multiple complexities involved in

developing and implementing comprehensive systems for the timely provision of NIMAS/AIM that are responsive to student needs and provided in accordance with IDEA requirements, the Library of Congress regulations and the 1996 Chafee Amendment to the U.S. Copyright Act. Although NIMAS/AIM was included in legislation in 2004, it is apparent that implementation varies widely across the country and that not all students who need AIM receive them in a timely manner. In order to support effective provision of services, OSEP has funded several AIM-related projects, including the AIM Center and the federally funded AMPs, to improve implementation. SEAs and LEAs have the unique opportunity at this point in time to take advantage of the supports and services offered and move forward with the continuing development of NIMAS/AIM-related systems. Improved systems would be expected to ensure that students have and can use the AIM they need for educational participation and achievement, thus improving outcomes for children and youth with disabilities. ■

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# Closing The Gap

## 29<sup>th</sup> ANNUAL CONFERENCE

Assistive Technology in Special Education and Rehabilitation

Wednesday, Thursday and Friday

**OCTOBER 12-14, 2011**

Preconference Workshops

Monday and Tuesday - October 10-11, 2011

**MINNEAPOLIS, MINNESOTA**

# CALL FOR PARTICIPATION

**CONFERENCE:** CLOSING THE GAP'S ANNUAL CONFERENCE HAS AN INTERNATIONAL REPUTATION AS A LEADING SOURCE FOR INFORMATION ON INNOVATIVE APPLICATIONS OF ASSISTIVE TECHNOLOGY FOR PERSONS WITH DISABILITIES.

The 2011 Conference builds on a tradition of providing a comprehensive examination of the most current uses of technology by persons with disabilities and the professionals who work with them.

Topics will cover a broad spectrum of technology as it is being applied to all disabilities and age groups in education, rehabilitation, vocation and independent living. People with disabilities, special educators, rehabilitation professionals, administrators, service/care providers, personnel managers, government officials and hardware/software developers will share their experiences and insights at what has become known as the best educational AT conference in North America.

Groups or individuals who wish to participate in Closing The Gap's 2011 Conference should send their proposals for one-hour and multiple-hour presentations as soon as possible. Directions and information are found within. Please fill out the proposal form completely; incomplete proposals will not be considered.

## PROPOSALS:

Closing The Gap will consider proposals for one-hour or multiple-hour sessions that describe and/or demonstrate successful applications of assistive technology for persons with disabilities.

Proposals are invited that report results of current applications, research, development of hardware, software, or adaptive devices, model programs or procedures used by and for persons with disabilities.

Proposals for sessions that demonstrate the use of software programs, adaptive devices or the innovative use of assistive technology are highly encouraged – especially specific how-tos, tips and tricks and product comparisons.

Proposals should focus on practical applications, implementation strategies and best practices rather than theoretical discourse.

Proposal content should be supported by evidence and should include quantitative performance data.

Proposals for open forums in which participants discuss, comment openly and share ideas and opinions relevant to a primary subject or focus are also encouraged.

Because the median assistive technology sophistication level of Closing The Gap Conference participants

advances each year, Closing The Gap encourages proposals for sessions directed at persons who are actively using assistive technology in education, rehabilitation, vocation or independent living – typically intermediate to advanced level users.

Closing The Gap recognizes the continued need for introductory activities as well, and will select a range of proposals that meets needs across the assistive technology experience continuum and facilitates a balanced interchange between special educators and rehabilitation professionals.

## PROCEDURE:

**ABSTRACT:** A 300- to 500-word abstract must accompany a copy of the proposal form found within this Call for Participation. This abstract will be reviewed by a conference panel and is critical in determining the quality and acceptance of the presentation.

**SUMMARY:** A separate, 100-word summary must also be submitted for inclusion in the Conference Directory. This summary should be written in the future tense, using person-first language, concisely stating presentation sequence and scope, and highlighting concrete examples and products. This summary must be congruent with the content of the actual presentation. It will be used by participants as the basis for attending and evaluating the presentation.

**PROPOSAL FORM:** The proposal form must be completely filled out and returned with the abstract and summary. If there will be more than one presenter, a lead presenter must be designated and complete contact information provided for each presenter.

Also, please only list those persons who will actually attend and present at the conference. You may note the appropriate author/creator of your presentation on your abstract, but do not list the author(s) or creator(s) as presenters unless he, she or they will be present at the conference.

## SUBMISSION DEADLINE:

The proposal form, abstract and summary must be received by Closing The Gap on or before 2:00 pm Central Daylight Time on Thursday, May 5, 2011. Incomplete submissions will not be considered.

## NOTIFICATIONS:

Confirmation of presentation proposal acceptance/declination, and confirmation of specific date and time of accepted presentation will be mailed by the first week in August.

In offering to present a paper, it is expressly understood that the presentation may be scheduled at any time on any of the conference days at the discretion of the conference organizers.

Presenters will be expected to provide all handouts at the conference. In addition, handouts must be made available to Closing The Gap for posting on Closing The Gap's Web site. Failure to adequately supply handouts, both on-site and Web, will result in nonconsideration of future proposals.

Selected manuscripts submitted by conference presenters will be published in the Closing The Gap magazine, both in print and online. Guidelines for submitting materials for these proceedings will be sent upon confirmation of presentation acceptance.

## REGISTRATION:

Presenters may register for the three-day (October 12-14, 2011) conference for \$325 (regular registration is \$455).

Presenters do not have to register for the conference to present; however, only those presenters who have registered may attend conference sessions/exhibits other than their own.

All-day preconference workshops are scheduled for October 10-11 and cost \$275 for one day or \$490 for two days.

## "RETURN" DISCOUNT:

A \$30 "return" discount is available to ANY past conference registrant and must be used by June 30, 2011.

This discount can be used for any preconference workshop OR conference registration and is IN ADDITION to any and all other applicable discounts.

If registering online, you will be required to enter code **RETURN** at checkout.

Online submission available at

[www.closingthegap.com](http://www.closingthegap.com)

**Closing The Gap**

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# 2011 PRESENTATION PROPOSAL FORM

CLOSING THE GAP 29<sup>th</sup> ANNUAL CONFERENCE - WEDNESDAY, THURSDAY AND FRIDAY, OCTOBER 12-14, 2011

Presentation title: \_\_\_\_\_

Presenter name(s): (If more than one presenter, designate lead presenter and provide complete contact information for each presenter. List only those persons who will actually attend and present at the conference.)

Professional experience: \_\_\_\_\_

Position / Title(s): \_\_\_\_\_

Institution / Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State / Country: \_\_\_\_\_ Zip / Postal code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Summer phone: \_\_\_\_\_ E-mail address: \_\_\_\_\_

Web site: \_\_\_\_\_

Have you or any co-presenter(s) presented this proposal before?  yes  no

If yes, please indicate when and where: \_\_\_\_\_

Will you or any co-presenter(s) submit this proposal to or present this proposal at any other national conference in 2011?

If yes, please indicate what conference, when and where: \_\_\_\_\_

The content of this session is supported by evidence and references are provided.  yes  no

This session includes quantitative performance data.  yes  no

## TYPE OF PRESENTATION:

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> demonstration                   | <input type="checkbox"/> hands-on workshop (Macintosh Lab)                   | <input type="checkbox"/> hands-on workshop (presenter-provided devices / materials) |
| <input type="checkbox"/> lecture                         | <input type="checkbox"/> hands-on workshop (PC Lab)                          |   |
| <input type="checkbox"/> make-it, take-it                | <input type="checkbox"/> hands-on workshop (participant-provided computers)* |   |
| <input type="checkbox"/> networking session / discussion | <input type="checkbox"/> hands-on workshop (iPad / iPod Lab)                 |   |

\*If computer is participant provided, this information must be included in the session's description.

List software to preinstall (if any): \_\_\_\_\_

List computer platform: \_\_\_\_\_ List operating system requirements: \_\_\_\_\_

List Web browser requirements (if any): \_\_\_\_\_

## COMPANY AFFILIATION / PRODUCT DEMONSTRATION:

Are you or any co-presenters affiliated in any manner with a company or organization whose commercial products you will be presenting or demonstrating?  yes  no If yes, please explain affiliation: \_\_\_\_\_

If this is a product demonstration, is the product available for purchase at this time?  yes  no

*Please note, if representing or endorsing a product, please be very careful to share information, strategies and implementation ideas rather than to "sell the product." Participants have commented and requested this to be the case.*

## LENGTH / SOPHISTICATION:

Length of presentation:  1 hour  2 ½ hours

Audience computer sophistication level:  beginner  intermediate  advanced  n/a

Presentation subject sophistication level:  beginner  intermediate  advanced  all



**EQUIPMENT:**

Standard equipment in each presentation room:

- projection system used for computer and / or video display
- one screen
- wireless Internet connection
- two wireless microphones

Equipment requested from Closing The Gap:  Mac  PC  no equipment requested

Additional equipment that you, the presenter, will supply: \_\_\_\_\_

If you supply your own laptop computer, it is necessary for you to list the make and model: \_\_\_\_\_

**PRIMARY SUBJECT OF PRESENTATION** (please be specific; if more than one is applicable, rate 1, 2, 3):

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> accessible instructional material                | <input type="checkbox"/> environmental control            | <input type="checkbox"/> professional development                |
| <input type="checkbox"/> assessment                                       | <input type="checkbox"/> functional living skills         | <input type="checkbox"/> research                                |
| <input type="checkbox"/> augmentative communication                       | <input type="checkbox"/> funding                          | <input type="checkbox"/> response to intervention                |
| <input type="checkbox"/> autism   | <input type="checkbox"/> geriatrics                       | <input type="checkbox"/> screen alternatives                     |
| <input type="checkbox"/> cognitive redevelopment                          | <input type="checkbox"/> IEP / IPP                        | <input type="checkbox"/> (Braille / large print / speech output) |
| <input type="checkbox"/> curriculum development / modifications           | <input type="checkbox"/> inclusion / cooperative learning | <input type="checkbox"/> seating / positioning / mobility        |
| <input type="checkbox"/> deaf communications                              | <input type="checkbox"/> keyboard alternatives            | <input type="checkbox"/> technology integration                  |
| <input type="checkbox"/> differentiated instruction                       | <input type="checkbox"/> language development             | <input type="checkbox"/> transition                              |
| <input type="checkbox"/> early childhood development                      | <input type="checkbox"/> learning styles (LD)             | <input type="checkbox"/> universal design for learning           |
| <input type="checkbox"/> employment / job accommodation /<br>job training | <input type="checkbox"/> legislation                      | <input type="checkbox"/> Web 2.0                                 |
| <input type="checkbox"/> literacy   |   | <input type="checkbox"/> other (please state):<br>_____          |

**LEARNING OUTCOMES:** As a result of this activity, participants will be able to: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*(Check the CEU area of the AAC Institute Web site for appropriate verbs to be used for learning outcomes statements. <[www.aac institute.org](http://www.aac institute.org)>)*

**PRIMARY FOCUS OF PRESENTATION** (please be specific):

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> administration    | <input type="checkbox"/> cognitive disabilities           | <input type="checkbox"/> infant / toddler skill level     |
| <input type="checkbox"/> rehabilitation    | <input type="checkbox"/> hearing impaired / deaf          | <input type="checkbox"/> preschool skill level            |
| <input type="checkbox"/> service / care    | <input type="checkbox"/> learning disabilities            | <input type="checkbox"/> kindergarten-grade 6 skill level |
| <input type="checkbox"/> special education | <input type="checkbox"/> physical disabilities            | <input type="checkbox"/> grades 7-12 skill level          |
|  | <input type="checkbox"/> speech / language disabilities   | <input type="checkbox"/> adult skill level                |
|  | <input type="checkbox"/> vision impaired / blind          |   |
|  | <input type="checkbox"/> behavioral / emotional disorders |   |
|  | <input type="checkbox"/> traumatic brain injured          |   |

**COMPUTER TYPE ADDRESSED:**

- Macintosh  PC  iPod / iPad

**SUBMIT PROPOSAL FORM:**

Return proposal form, abstract and summary by mail or fax to, Presentations Manager, Closing The Gap, 526 Main St., P.O. Box 68, Henderson, MN 56044. Fax: 507-248-3810.

To submit a proposal form, abstract and summary online, visit <[www.closingthegap.com/conf/call\\_for\\_participation.lasso](http://www.closingthegap.com/conf/call_for_participation.lasso)>.

For additional information, call 507-248-3294, e-mail Closing The Gap at <[info@closingthegap.com](mailto:info@closingthegap.com)> or visit our Web site at <[www.closingthegap.com](http://www.closingthegap.com)>.

**SUBMISSION DEADLINE:**

Proposal must be received by Closing The Gap on or before 2:00 pm Central Daylight Time on Thursday, May 5, 2011.

**CONFIRMATION DATE:**

Confirmation of presentation proposal acceptance / declination and confirmation of specific date and time of accepted presentation will be mailed by the first week in August.

# 2011 RESOURCE DIRECTORY

*A guide to the latest assistive technology products for children and adults with disabilities*

## ▶ PRODUCT GUIDE

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**This Directory** is the culmination of a year-round search for products and services available to best meet the needs of children and adults with disabilities. The purpose of this Directory is to help you sort through the myriad of technologies to find the products and their specific features that best meet your needs.

By following a few simple steps, this resource can become a valuable tool for successful assistive technology implementation.

Just as a good map can guide you through a strange city, the 2011 Closing The Gap Resource Directory can guide you in your search for and review of assistive technology products and services.

**EDITOR'S NOTE** *The 2011 Closing The Gap Resource Directory is a reference guide based on editorial questionnaires, phone interviews and materials provided by producers. The listings are not advertisements nor are their inclusion in the Directory an endorsement or guarantee by Closing The Gap. Descriptions are edited material submitted by producers. They are not product reviews. Information provided is as current as possible at time of publication.*

## How to be **INCLUDED** in the Resource Directory

If you are a producer/manufacturer of an assistive technology product that is not listed within this guide, you may submit products for consideration by using our online system to submit software, hardware and/or other assistive technology questionnaire(s).

There is no charge for listings in the Resource Directory.

[www.closingthegap.com/submit\\_product.lasso](http://www.closingthegap.com/submit_product.lasso)

# HOW TO BEST USE THIS DIRECTORY

**1** *Ask yourself, what are my needs, what are my goals, what am I looking for?*

Look at the hardware, software and other assistive technology matrixes (including their corresponding descriptors) to determine which, of the three, best meets your needs.

**2** *Once you have determined whether it is hardware, software or other assistive technology that you will search, select descriptor(s) found within the matrix to identify products of interest.*

Remember, the more information that can be identified before your search begins, the more specific your outcome will be.

Definitions for all categories and descriptors can be found in the glossary that begins on page 199.

**3** *Once you have identified the products that meet your search criteria, move on to the description section for more detailed information about them.*

For additional information, contact the producer. Refer to Directory of Producers that begins on page 178 for complete contact information.

For more dynamic interaction with this Resource Directory information, check out Closing The Gap Solutions online.

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