

# Closing The Gap

OCTOBER / NOVEMBER, 2011  
VOLUME 30 - NUMBER 4

*Solutions*

**APPSOLUTE FIT:  
SELECTING THE RIGHT  
MOBILE DEVICE APPS**

**DISCOVERIES - NEW  
SOFTWARE AND HARDWARE,  
PROFESSIONAL RESOURCES,  
DVDS FOR LEARNING AND  
APPLE APPS AND IPAD  
ACCESSORIES**

**CONVENTIONAL WRITING  
FOR STUDENTS  
WITH DISABILITIES**

**PROMPTING:  
A CAUTIONARY TALE**

**ORGANIZATION TOOLBOX:  
TOOLS AND STRATEGIES  
FOR DEVELOPING  
ORGANIZATION SKILLS  
(PART ONE OF A TWO-PART SERIES)**

# RJ COOPER

PRESENTS NEW SWITCH-ADAPTED GADGETS



**BIG BUTTON iPod REMOTE** - Dillon is able to use my BIG buttons, but the remote also has switch inputs for Play/Pause, Next Song, Previous Song, Volume Up and Volume Down.

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# SWITCH-ADAPTED GADGETS



## DIGITAL CAMERA

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## TV REMOTE

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The LOGAN<sup>®</sup> PROXTALKER<sup>®</sup>, developed by a dad for his son who has autism, is an easy to use mid-tech device that adds spoken words to picture communication.

- ideal for 1:1 communication or group participation
- offers lesson support to a range of students in the classroom
- students with Visual Impairment benefit from use of tactile symbols to identify the tags
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- **New** easy to use Visual Suite software now available directly from ProxTalker.com which supports personalization of the LOGAN<sup>®</sup> PROXTALKER<sup>®</sup>



## Introducing the LOGAN<sup>®</sup> BRAILLECOACH<sup>™</sup> teaching device which supports independent practice of Braille

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- **Easy to use** - BrailleCoach comes with an alphabet set of pre-programmed Braille tags making it useable out of the box
- **Easy to progress** - there are three modes of learning which allow progression through grades 1 and 2 - Mode 1 Dots and Letters; Mode 2 Letters only; Mode 3 Letters and Words
- **easy to extend** – print and record your own resources to extend practice beyond the alphabet set

'I have to tell you about my student who just started learning with the Logan BrailleCoach. In a week he has learned the entire alphabet, its dots, and the word associations. He is ready to practice with words and I am going to get on that next week, so grade 1 for him is essentially done in just 1 short week at 30 minutes a day!' reported James a BLV educational consultant, Kansas City.

For more information visit [www.proxtalker.com](http://www.proxtalker.com) contact [info@proxtalker.com](mailto:info@proxtalker.com) or call us at (203) 721-6074 Toll free (877) 776-9175

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## 2012 SAVE THE DATE

PLEASE JOIN US FOR CLOSING THE GAP'S

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

*Assistive Technology in Special Education and Rehabilitation*

► Conference:  
**Wednesday, Thursday and Friday,  
October 17-19, 2012**

► Preconference Workshops:  
**Monday and Tuesday, October 15-16, 2012**

Minneapolis, Minnesota • DoubleTree by Hilton Hotel Bloomington

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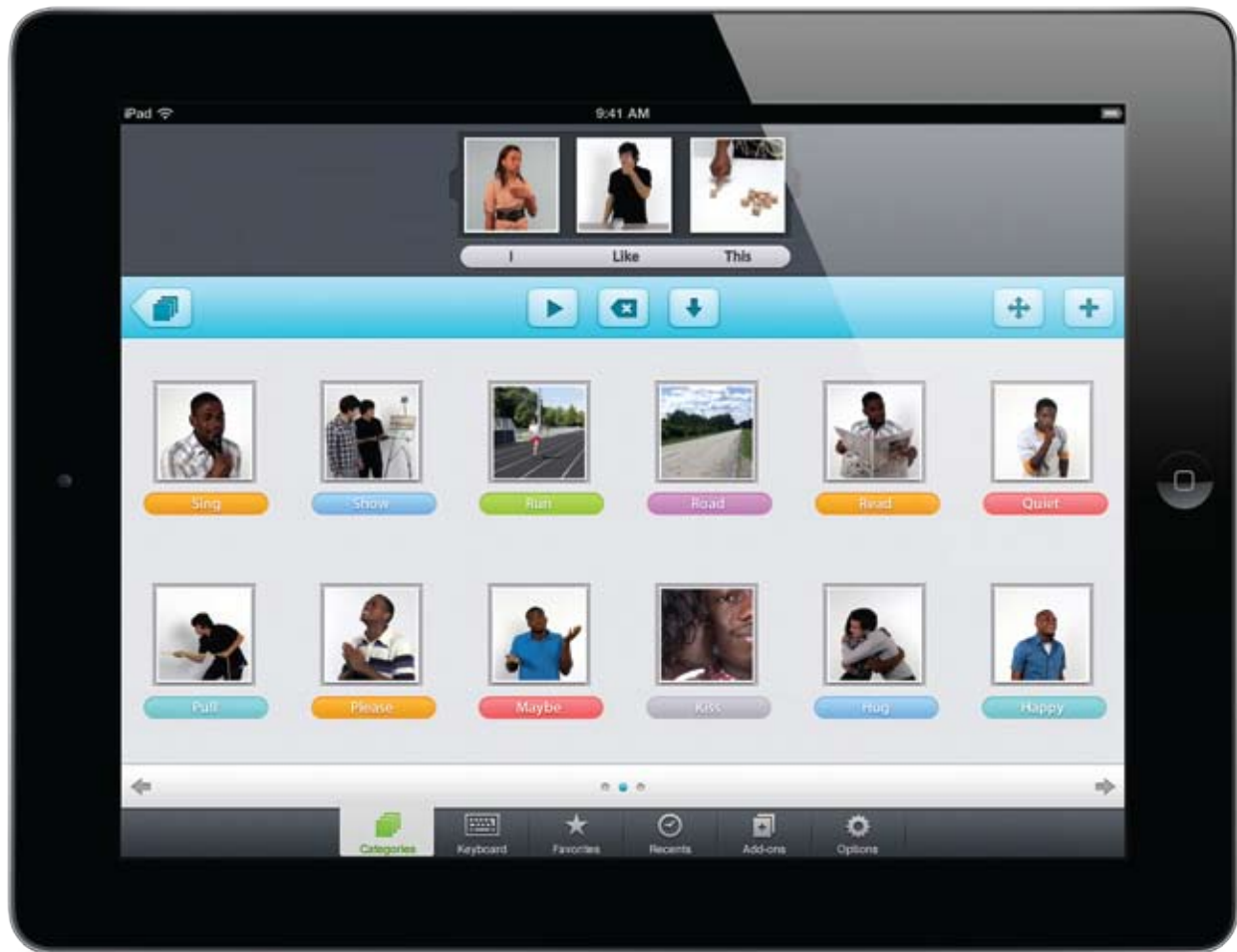
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Technology can open the world to individuals with disabilities by providing a vehicle for communication, a magnification of information, a voice and access to information. Through the use of technology, individuals become empowered in the world around them.

# THE POWER to do more

By Kelli Hodges, Business Development Senior Consultant, Dell Global Education - Kelli\_hodges@dell.com

## Impacting the lives of individuals with disabilities through robust technology solutions

Successful implementation of assistive technology is complex, requiring multiple steps to ensure the tools an individual is receiving are the best for their overall learning experience and quality of life. As schools and universities plan for the acquisition of appropriate assistive technology tools, it is important that they address the following: awareness, access, acquisition, integration, time, implementation, training, resources and funding. The complexity of this process can strain a school board's/DSS office's infrastructure and overall funding and resource allocation.

### Common challenges include:

- Distributing the appropriate resources to the program
- Properly evaluating and prescribing for each student's specific needs
- Sourcing special computer hardware and software from multiple vendors
- Tracking and waiting for equipment to arrive
- Managing a procurement process that involves multiple purchase orders to multiple vendors and tracking to ensure everything arrives on site
- Training students, teachers and parents on both hardware and software
- Supporting and servicing the special needs technologies throughout the student's time at school

### What Does the Dell Solution Deliver?

Dell's Specialized Equipment Solution Program provides each school board or DSS office and student with one complete solution, including:

- Single purchase order for ALL technology items
- One stop shopping for Dell and non-Dell technology, such as specialized peripherals and devices and special needs software licensing
- Custom factory integration services, such as imaging, unique asset tag relating to special needs claim ID, and asset reporting
- On site delivery, including pre-staging of all hardware to ensure functionality
- Single consolidated delivery
- Scheduled installation services with advance notice of deliveries
- Dedicated Project Manager who will engage with your school board/DSS and manage the program from start to finish
- Dedicated training team to ensure that student, parent, teacher and specialist are trained on the assistive technology solution, as well as best practices in instructional approaches
- A direct line to speak to both instructional and technical support as you look to improve the overall educational experience for the student

### SES Program - Enhanced Commitment

A one-to-one initiative goes far beyond just a student and notebook. It is a total solution supporting teaching and learning



Administrators



Students



Parents



Teachers



Without proper planning and management, the process can be unwieldy, costly and result in frustration for students, parents, IT administrators and school board management.

### How Can Dell Help?

As part of Dell's commitment to improving the K-20 educational experience, Dell offers a fully managed Specialized Equipment Solution (SES) Program, designed to simplify the procurement, deployment and on-going support of assistive learning programs.

With Dell managing the acquisition and delivery of assistive learning technologies, educators are able to focus more time on instructional practices that empower learners and not on the administrative tasks of deploying technology. Dell's SES solution provides school boards/DSSs with a one-stop shop for all their special equipment needs, incorporating the best of Dell partnerships, deployment processes and training.

### The SES Solution is Focused on:

- Improving student achievement and 21st century skills
- Assisting teachers with integrating technology into the classroom and providing meaningful instruction to students
- Providing gains in administrative effectiveness through process efficiencies
- Including parents in the education process
- Engaging industry partners to deliver a "One Stop Shopping" solution for students with special needs

**Dell is committed to being your direct service provider to empower individuals with disabilities to engage, communicate and collaborate with assistive technology.**



**will**

I want to give every child the power to learn.

## Intel® Reader

The Intel® Reader is changing the lives of people with reading-based learning disabilities such as dyslexia, low vision, or blindness. This extraordinary mobile device takes a picture of printed text and converts it to the spoken word. Based on extensive assistive technology research, the Intel Reader is making printed text accessible to children and adults, so they can participate fully and excel.

Consider making the Intel Reader part of your education strategy. Students using the Intel Reader **increased reading comprehension test scores by up to 23 percent.**<sup>1</sup>

**Learn more about improving student performance. Visit us at booth 106.**



1. *Evaluation of the Effects of the Intel® Reader on Improving the Reading Performance of Adolescents with Learning Disabilities*, SRI International, November, 2010.

The Intel Reader should not be relied on as the sole means of reading when a reading inconsistency or misreading of written text might put a person at risk for personal injury or economic harm. The Intel Reader is not intended for reading data that is primarily mathematical, scientific, or financial.

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

## Closing The Gap

OCTOBER 12-14, 2011  
Preconference Workshops  
October 10-11, 2011  
MINNEAPOLIS, MINNESOTA



The best educational  
assistive technology  
conference in North  
America

*Assistive Technology in Special Education and Rehabilitation*

**A TRADITION OF EXCELLENCE** Over the years, the annual Closing The Gap Conference has become known as the best educational assistive technology conference in North America.

Through shared best practices and research, networking, training, hands-on opportunities and an expansive exhibit hall, participants have found information, strategies and products that have proven beneficial and, oftentimes, unsurpassed for use in their work and in their lives.

The 29th Annual Conference runs Monday, October 10th through Friday, October 14th and is held in Minneapolis, Minnesota.

Preconference workshops are scheduled for Monday and Tuesday, October 10th and 11th, and the Conference officially begins with a preview of the exhibits on Tuesday evening,

followed by three days of presentations, hands-on labs and exhibitions.

With multiple registration options available, numerous and diverse discounts, group savings and preconference workshop bundling, we invite you to participate and encourage you to bring your team!

Closing The Gap promises to work hard to insure that the content and learning opportunities are many, varied and exceptional throughout the conference week.

### ★ 24 PRECONFERENCE WORKSHOPS

Closing The Gap preconference workshops are all-day, in-depth workshops presented by experts in the field in very practical and effective ways. The content and delivery are unsurpassed and the resulting outcomes for persons with disabilities are overwhelmingly positive and bright.

Many of this year's workshops are new, some advanced, with state-of-the-art technologies being addressed and best practices demonstrated and taught.

### ★ OVER 200 PRESENTATIONS

Practical and expert-lead presentations during the Closing The Gap Conference will include over 200 one- and two-hour sessions and hands-on labs, including PC, Mac and iPad labs, that describe and/or demonstrate successful applications of assistive technology for persons with disabilities. Select handouts will be available onsite and online following the conference.

### ★ COMMERCIAL EXHIBITS

An impressive and varied scope of AT products will be on display and will range from low tech to high tech and represent solutions for all disabilities and ages. Daily regular AND exclusive hours are scheduled to give participants quality time to explore, try, learn and ask questions, first-hand and face-to-face.

Attend all five days and earn up to  
**THREE GRADUATE-LEVEL  
ACADEMIC CREDITS  
AND UP TO 3.4 AAC  
INSTITUTE CEUS!**

*Registration is Still Open - Online and On-Site Registrations Welcome!*

LEARN MORE AT [WWW.CLOSINGTHEGAP.COM](http://WWW.CLOSINGTHEGAP.COM)





**WHO SHOULD ATTEND?** ANYONE interested in finding practical and readily available AT solutions for ALL disabilities, mild to significant, infant through adult.

- Teachers
- Occupational Therapists
- AT Consultants
- Parents
- Administrators
- Technology Specialists
- Students
- Speech Language Pathologists
- Physical Therapists
- Consumers

**WHY ATTEND?** Participants will have numerous and unique opportunities to learn, first-hand, from experts in the field, network, ask questions, and see and try the latest AT products and strategies available today.

## CONFERENCE SCHEDULE

### Sunday, October 9

5:00 pm - 8:00 pm ..... Registration Desk Open

### Monday, October 10

7:00 am - 8:00 pm ..... Registration Desk Open

8:00 am - 4:30 pm ..... Preconference Workshops

### Tuesday, October 11

7:00 am - 9:00 pm ..... Registration Desk Open

8:00 am - 4:30 pm ..... Preconference Workshops

5:00 pm ..... Complimentary Hors d'oeuvres

*Sponsored by Care Innovations an Intel • GE Company*

5:30 pm - 8:00 pm ..... Preview of Exhibits

### Wednesday, October 12

7:00 am - 8:00 am ..... Continental Breakfast

*Sponsored by Dell: Global Education Solutions*

7:00 am - 5:30 pm ..... Registration Desk Open

8:00 am - 4:30 pm ..... Presentations

\*10:00 am - 5:30 pm ..... Commercial Exhibits

3:00 pm ..... Apple and Candy Break

*Sponsored by Lingraphica - The Aphasia Company*

### Thursday, October 13

7:30 am - 5:30 pm ..... Registration Desk Open

8:00 am - 4:30 pm ..... Presentations

\*10:00 am - 5:30 pm ..... Commercial Exhibits

3:00 pm ..... Apple and Candy Break

*Sponsored by Lingraphica - The Aphasia Company*

### Friday, October 14

7:30 am - 2:00 pm ..... Registration Desk Open

8:00 am - 1:30 pm ..... Presentations

9:00 am - 1:30 pm ..... Commercial Exhibits

*\*The exhibit floor will close for an exhibitor break from 12:30 pm - 1:30 pm.*

## AAC INSTITUTE CEUS

AAC Institute will again provide CEUs for both the conference and pre-conference workshops. CEUs will be offered for all sessions without charge. AAC Institute CEUs that relate to the practice of speech-language pathology and audiology can be used for ASHA certification maintenance. RESNA accepts AAC Institute CEUs for ATP/ATS credential maintenance. Most state licensure systems accept AAC Institute CEUs or other forms of self-reporting. Pre-conference workshops are offered for up to 1.4 CEUs. The conference is offered for up to 2.0 CEUs. For additional information visit [www.aac institute.org/CEUs](http://www.aac institute.org/CEUs).

CEU details and documentation will be available at the Closing The Gap registration desk located on the second floor of the DoubleTree.

## CERTIFICATES OF ATTENDANCE

Closing The Gap-issued Certificates of Attendance for conference participation will be available upon request at no additional fee. All preconference workshop participants will receive a Closing The Gap-issued, presenter-signed Certificate of Preconference Workshop Attendance upon completion of the workshop.



## ACADEMIC CREDIT

Graduate-level academic credit from Hamline University is available for a variety of levels of conference attendance. Participants will have the option of one, two or three full semester credits.

### ONE FULL SEMESTER CREDIT

**Cost: \$128**

#### Requirements:

- 12 contact hours
- An outside assignment

(12 contact hours require conference participation or two preconference workshops.)

### TWO FULL SEMESTER CREDITS

**Cost: \$256**

#### Requirements:

- 24 contact hours
- An outside assignment

(24 contact hours require conference participation AND at least one preconference workshop.)

### THREE FULL SEMESTER CREDITS

**Cost: \$384**

#### Requirements:

- 36 contact hours
- An outside assignment

(36 contact hours require conference participation Wednesday - Friday AND two preconference workshops.)

# APPsolute Fit:

## Selecting the Right Mobile Device Apps

By Madalaine Pugliese and current students from the Simmons College Assistive Technology Graduate Program



**MADALAINE PUGLIESE**, Ed. S., is the owner of Assistive Learning Technologies (ALT) and is the author of the Stages© framework. She serves as Simmons College Assistive Technology Graduate Program Coordinator. She also serves as Assistive Technology Consultant for Marblehead, MA Public Schools. She can be contacted at [madalaine@comcast.net](mailto:madalaine@comcast.net).



As the original author of the Stages Framework, it became clear to me that an update to include strategies for selecting mobile device apps might also be helpful for the same reasons that software recommendations were originally beneficial. Not only does this article uniquely organize suggestions for mobile device apps, but these also align with the original Stages framework in order to help decision-makers guide recommendations for assistive technology assessment.

### INTRODUCTION

In more than 20 years of working with graduate students in assistive technology, I have seen how the role of assistive technology specialists has changed. We are no longer only called upon to recommend physical access to the curriculum. Now we are also asked to become curriculum and strategy advisors. We need to understand content and be able to design modifications that maintain the essence of the classroom experience for any learner, regardless of challenge. The tools and strategies that we recommend must be invisible and put the student and curriculum first, resulting in a successful active learning environment.

In an effort to constantly update our graduate program curriculum, each year our faculty meets to reconsider which tools and strategies we'll address in our courses. In the last year, it became obvious that the integration of mobile devices and appropriate applications (apps) throughout our classes was imperative. We were noticing a frenzy of individual success story articles and lists upon lists of recommendations for mobile device apps that we didn't find as helpful as we hoped. Yes, we found lists of recommendations, however, few seemed

to put the student first. Instead, they were organized by task and offered little information about features within the settings. This article will organize recommendations for mobile device apps from a developmental perspective and offer rationale for each recommendation that is supported by features or design found within the app.

### FRAMEWORK FOR RECOMMENDATIONS

I teach a graduate course entitled Technology for Cognitive and Language Development and Alternate Assessment. In this class, we learn about assistive devices and specialized software that can facilitate including learners with cognitive or language challenges in the general classroom curriculum, along with strategies documenting learning. We take a developmental approach to language and cognitive milestones, following the Stages© Framework (Cambium Learning Technologies, 2008). This framework takes a research-based approach to defining observable learner characteristics for each Stage and recommends features to look for in computer software for learning that

► **PROCESS** - First apps were collected based on type of learner task, as well as favorable recommendations from a variety of previous lists, some referenced below. Next, apps were collected based on recommendations in response to queries on professional listservs. Finally, apps were collected based on reviews from users posted in the iTunes store. We not only collected apps that were especially designed for users with special needs, we also collected apps that were believed to serve the purposes as described within the originally published software selection guidelines. After a master list was collated, we provided these apps on iPads for graduate students to review and recommend for developmentally appropriate use within the Stages framework. This article collects their recommendations, considered from this developmental perspective.

► **STAGES FRAMEWORK** - The seven Stages are not grade level or age referenced. Instead, they are competency based. Each Stage identifies skills or milestones to achieve. Once those milestones are determined, and from the perspective of student first, features to seek in skill-building applications are suggested. The next step is to go on a search for apps that offer the identified skills practice, as well as the access features required for a specific student. With permission from Stages publisher, the following outlines specific learner characteristics and features to consider for each Stage, then lists our recommendations from what we believe is a developmentally appropriate perspective for learners with need to practice cognitive or language skills development.

match and scaffold student need. This approach has proven very helpful in supporting educators, therapists and families in selecting appropriate learning materials.



## STAGE ONE – CAUSE AND EFFECT

### ABOUT THE LEARNER

In Stage One, the learner begins to use an appropriate input device to control the computer and establishes a reliable access behavior. She realizes that pressing a switch or pressing on the touch interface for the device can make something happen on the screen. This reliable access behavior is the first step in the learning process.

The purpose of the app at this Stage is not to present information to discover, but to motivate the student to find out how to control the device. Therefore, appropriate apps generally offer very light content or meaning.

For example, when the user initiates an interaction, colors might change on the screen or a sound might play. For some learners, that amount of feedback is enough to call their attention to the device or motivate them to work toward device control. For others, the content itself might motivate interaction. Working toward an age-appropriate animation, humorous image or inviting sound can be just what some learners need

to inspire more deliberate interaction with the app.

Selecting age-appropriate apps is important when considering motivation. Not all Stage One learners will be young children. Older learners may well need to begin at Stage One to develop device mastery through cause and effect.

### FEATURES TO CONSIDER

When you select apps at this Stage, it is critical to consider the prompting for the learner interactions. Some apps offer only auditory prompting, motivating the learner to interact with the software by responding to encouraging sounds and spoken language. Other apps offer only visual prompting, motivating the learner to interact with the software by responding to pictures or animations that encourage the appropriate behavior. Some apps offer multisensory prompts that are both auditory and visual in nature. In selecting the appropriate app, consider the learner's strengths, as well as areas in which the learner needs practice.



## STAGE TWO – LANGUAGE READINESS

### ABOUT THE LEARNER

In Stage Two, the learner is exposed to deliberately richer language experiences. She learns that objects have names and that actions have words to describe them. The

learner is not asked to identify objects, but simply to be a sponge and absorb information about them. This Stage develops receptive language and pre-linguistic skills.

### FEATURES TO CONSIDER

Finding apps that are designed only for Stage Two can be challenging because we are moving from a content-light to a content-rich environment. Keep in mind that you still need to consider the appropriate access device and procedures. In addition to using apps recommended for Stage Two, look for menu settings to help you modify Stage One apps for Stage Two learning.

Look for apps that offer brief, repetitive and consistent learner prompts. Use the type of prompt (auditory, visual or multisensory) proven successful during Stage One so that the interaction does not confuse or distract the learner from focus on the content. If she randomly activates a target by using an access device, reinforce the language content whether or not the selection was deliberate. Say, for example, "Look, that's a dog!"

Continue to use age-appropriate apps. For example, apps presenting traditional nursery rhyme content would be most appropriate for younger children, whereas apps depicting current music might be more appropriate for teens and adults. Pick apps that allow you to customize the content by adding digital photos

of things that are personally familiar to the learner.

Some aspects of the learner's behavior may be measured and recorded. For example, some apps keep track of the learner's time on task. You can create a portfolio of observations so that improvement can be noted across several behaviors simultaneously and over time.

We can only expect a learner to make use of vocabulary or language to which he has been repeatedly exposed. In short, a learner will not understand the meaning of a word or concept unless he has seen numerous examples.



## STAGE THREE – EMERGING LANGUAGE

### ABOUT THE LEARNER

In Stage Three, the learner demonstrates an understanding of language through object identification and categorization. For example, she can show that she knows what a dog is (identification) and that an apple is a type of food (categorization). This is the first Stage in which the learner is asked to make a selection or respond to a question based on a prompt. Choice-making skills, as well as the ability to wait as choices are presented, develop now.

Also introduced in this Stage are the concepts of divergent and convergent thinking skills. We use divergent learning activities when we want

STAGE ONE - APPS TO CONSIDER			
Title	Publisher	Cost	Rationale/Description
Baby Butterfly – my first colors	Kids Place	\$0.99	Provides instant feedback on the screen. Wherever the user touches, the butterfly flies to that spot.
Baby Rattle Toy	Selena Soft Inc	\$1.99	Allows the user to touch the screen to make objects appear.
Balloonimals	iDEC	\$1.99	Using finger touches and swipes on the screen, the child can blow up a balloon, turn it into an animal and pop it. The colors, graphics, sound and action are exciting. Great for the learner who needs to develop better visual attention and the concept of cause and effect.
Bebot	By Normalware	\$1.99	Touch the robot to make it move and make sound. Music synthesizer with unique touch control. Students learn they have control of program.
Bubbles	Hog Bay Software	\$0.99	Pop bubbles with pleasing sounds. Can touch, hit or drag with finger or any part of body. Multisensory feedback
Fireworks	PDJ Apps	\$0.99	Bright colors, simple to activate, changeable modes and patterns.
Hand Drums	Cody Rotwein	\$0.99	Two drums are on the screen. A simple tap activates the drum momentarily; to continue play, the user is required to tap and release. There are 19 different types of drums that can be programmed. Settings also allow activation by shaking the iPad. Drum animations can be turned on/off depending upon visual needs of user. This is primarily a music app so there is no data collection. However there is a record option that would allow playback to determine the pattern of taps.
My Furry Friend	Plutinosoft	Initial purchase if free, but there are six in-app purchases for \$0.99	Children can pop Leonard's bubbles and his balloon by touching them. Leonard imitates children's vocalizations, giving immediate feedback when a child vocalizes.
Pocket Pond HD	John Moffett	Free	Create soothing ripples with calming sound. Interact with fish (feed them, catch them) and change the weather. Touching the screen adds lily pads, dragonflies and more fish.
Rad Sounds	R J Cooper	\$29.99	Cause and effect music program. Able to record sounds and import from iTunes. When the screen is touched, the people dance. Both momentary and timed switch play.

the learners to explore and discover content. We use convergent learning activities when we want learners to demonstrate how much they have understood from their earlier explorations.

## FEATURES TO CONSIDER

Now that the learner has accomplished preliminary and reliable mastery of access to the learning environment and has benefited from a receptive vocabulary environment, content becomes our primary focus at Stage Three. We are ready to look at deliberate ways to determine how much vocabulary the learner has absorbed from all of her hard work during Stages One and Two.

Apps for a Stage Three learner provide opportunities to work with different levels of representation or abstraction with which objects are represented on the screen (such as photographs, drawings or symbols) as appropriate. Object and action identification is simply matching an object or action to its spoken name (for example, “Find the cat” or “Which one flies?”). Category identification enables the learner to demonstrate an understanding of language by categorizing or identifying objects that belong to the same group (for example, an apple is a type of food).

Apps that include function identification might feature activities that ask a learner to show her under-

standing of an object’s purpose. It might ask the learner to discriminate among several objects that are called the same thing, but are used differently (for example, toothbrush or paintbrush or hairbrush).

Watch for menu or settings options that permit adjustments to the way the content is presented to the learner. For example, if the learner is startled by sudden animation, look for a way to turn it off. Such adjustments might also extend the range of the content, offering a cost-efficient strategy for using the same app as a learner progresses within a Stage, as well as from Stage to Stage.

Look for ways to change the activity from a simple presentation

of named objects to one in which the learner must identify a target on her own. A Stage Two “Here is a dog” activity becomes a “Find the dog” activity in Stage Three. The content carries more meaning at this Stage, so be sure that the settings elicit the learner’s best performance.

It is important that the app you choose supports the access method your learner uses. If she is a switch user, her interaction with the switch will now involve scanning. During scanning, choices are highlighted on the screen, one by one, then selected when highlighted by pressing a switch. The learner must wait for the desired target to highlight before she presses the switch. As she learns

STAGE TWO - APPS TO CONSIDER			
Title	Publisher	Cost	Rationale/Description
ABA Flashcards, Fruits and Nuts	By Kindergarten	Free	50 flashcards of colorful and bright images of various fruits and nuts. If the item is touched, a clearly articulated audio feedback is given of what the item is.
ABC Wildlife	Peapod Labs LLC	\$0.99	Animal themed touch and learn activity. Touch each animal to see the name spelled out, read, picture, and video.
Color Blender	WILLHALL SIAU	\$0.99	Build receptive language skills and have increased exposure to nouns, verbs and attributes, which are provided in this simple app. This application exposes the user to colors and nouns that are that color. Very realistic pictures used throughout.
First Words	Story Boy Media	Free	In this app, students are presented a word. When they tap the picture, a voice speaks the item name. Items are also classified by function.
First Words	Serendipity Apps, Inc	\$1.99	Teaches first words and builds vocabulary. Sound effects and animation. Child touches pictures on animated screen to reveal words with audio feedback.
First Words Deluxe	Learning Touch	\$4.99	Touch the object and see and hear the name of the object. Goes through things with wheels, animals, in the house, and food.
Green Apple Color Flashcards	Robert Meier	\$0.99	The top slide of the slide show labels the color and object. The center of the slide has an illustration of an object that is the color labeled at the top. The right of the slide has a solid stripe of the color being addressed. The bottom of the slide has the color label repeated in a bold font size. The slide is accessed by a single tap that reads the top label. A tap anywhere in the slide repeats the label. A single swipe advances to the next slide. Setting options provide a choice of having the slide read automatically when the page advances or requiring a single tap to read. Slides can be presented by showing multiple slides of one color before transitioning to a new color or randomizing colors with each slide.
Itsy Bitsy Spider	Duck Duck Moose	\$1.99	The app is accessed by a single tap and release or single swipe. A music button allows you to record your voice or have prerecorded singing. It is an errorless explore program. Touching the spider activates singing and page turn. When program has been idle, the spider moves as a visual prompt to interact. Each page has a minimum of five interactive items. There are a total of four pages, which loop until exploration is completed. The pages are brightly illustrated but not overly stimulating.
Moo Baa La La La by Sandra Boynton	LoudCrow	\$2.99	A familiar book for many kids, the iPad version is so interaction. The text is simple, providing simple language input. Pages are interactive, exposing children to early basic concepts.
My First Words-Flashards by Smart Baby Apps	MindValley LLC	Lite version is Free. \$0.99 for expansion packet	Vocabulary builder. Vocabulary includes actions, animals, baby things, body, clothing, feelings, food, Mommy’s purse, on wheels, shapes and toys. You can also add your own photos for classroom themes and their vocabulary.
Peekaboo HD	Gotclues, Inc	Free	Farm themed language development multisensory activity.
Peek Barn	Night and Day Studio	\$1.99	When the user touches the animal, the animal makes the appropriate sound and the animal is labeled. This activity begins to teach single word labels.
PhotoTell	Adaptitec	Lite version is free; \$9.99 for full features	Organize your own digital photos with audio captions that you record. Photos can be linked to multiple pages.
PickPix Tot	Ken Liu and Lisa Tang Liu (Crimson Hammer Software)	\$2.99	Flash card environment provides the opportunity to expose the user to text labels and the corresponding object. It allows you to set the level to two sets, five sets or 10 sets. All audio prompts are human voiced. The home page provides two options “See Cards” and “Play Game.” In the “See Cards” option, one color picture is displayed with a text label underneath it, an audio description identifying the object and its function is automatically played. A single swipe is required to move to the next card. Pictures are clear, vivid and on a plain background. Provides a consistent format of naming objects that can be viewed at the user’s pace and can be repeated. The “Play Game” option is Stage 3.
Zoo Animals	Kindergarten.com	Free	A simple touch on real photos of animals and the name of the animal is spoken, followed by a musical flourish. Touch the screen again to get a new page. Good vocabulary builder and has enough action, sound and color to help with visual attention on the screen.

to use her switch in this way, she may need coaching to wait until the desired target is highlighted before she presses the switch. Waiting is a sophisticated skill.



## STAGE FOUR – EARLY CONCEPTS

### ABOUT THE LEARNER

Stage Four marks another significant turning point in the learner's progress – the learner moves from language foundation to academic readiness. Until now, the content has focused on building a solid language foundation. The Stages framework stresses that before a learner can be expected to enter an established academic program, she must have a stable foundation in language. In Stage Four, the focus shifts toward more traditional development in both academic and social skills. Whereas

the language foundation of the first three Stages followed a sequential pattern of development, academic discovery does not. The skills developed in Stage Four through Stage Seven are interconnected and may develop concurrently as the learner acquires complementary skills.

In Stage Four, the learner applies the language skills that were introduced in earlier Stages to progress toward academic readiness. This means that she begins to lay the foundation for learning to read, write and calculate. For example, in reading readiness, the learner develops phonemic awareness, and, in phonics, she matches letters with their sounds. However, she is not yet responsible for actually reading words. In math readiness, she is expected to learn to identify numbers and know their values by counting objects. She builds a vocabulary for understanding math, such as the language for making comparisons (small, medium, large). However, she

is not yet expected to calculate or operate with the numbers.

The learner is becoming prepared for higher-level concepts by building the conceptual framework for the full academic content to come. Readiness for academics also means that she discovers the joy of learning new things and begins to build self-confidence.

### FEATURES TO CONSIDER

Learners need opportunities to develop and experience both divergent and convergent thinking. Divergent thinking allows them to explore a body of information, making observations and gaining confidence as they explore. Convergent thinking allows them to demonstrate their understanding of the information that they have been exploring. Support and encouragement are vital to both types of learning experiences. This is a large step forward in both cognitive and language growth, thus, adults

guiding the learning process tend to become very excited about the progress toward a more standard curriculum. In reviewing apps for content, you must exercise caution to stay true to what is most appropriate for your learner. Remember to look for software with readiness content rather than software with higher academic content.

A constructive readiness environment places more importance on the opportunity to explore concepts than on the correctness of responses. If an app provides feedback for learner response, take care that it offers a risk-free, supportive, encouraging learning environment.

For example, if a learner is asked to identify a certain item, letter or number, the software could eliminate distracters as incorrect responses are made. In this way, the learner is permitted to continue exploration, but with a more manageable number of targets. Eventually, the

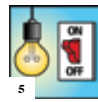
### STAGE THREE - APPS TO CONSIDER

Title	Publisher	Cost	Rationale/Description
ABA Receptive ID	Kindergarten.Com	\$0.99	The user is given a direction to choose a picture out of an array of three. This activity teaches target words.
Clean Up Category Sorting	Different Roads to Learning	Free	Users sort items into toys, clothes and food. When the user puts the item in the right place (picnic basket, toy chest, closet) a star comes up on the screen as positive feedback.
Families 1 & Families 2	www.myfirstapp.com	FREE or in-app purchase of \$0.99 for three additional families	An app to develop categorization skills. The user is presented with a "family" board with three images and the user must select the other family member from seven other pictures to complete the family.
Giraffe's Matching Zoo	TomatoInteractive, LLC	Free	Animal matching; object representation and categorization. Also, memory/focus and visual perception. Animation and entertaining sound.
Magic Piano	Smule	Free	Chose a song and students can play the tune by pressing each of the bubbles as they appear. No sound is produced unless the bubbles are pressed.
Preschool Games Farm Animals (Photo Touch)	Grasshopper Apps	\$0.99	Real photos of farm animals; asked to touch the animal asked for. Voice output.
See Touch Learn	Brain Parade	Initial app and one library is free. Additional libraries/ lessons require a purchase ranging from \$1.99 to \$3.99	Pre-loaded lessons and the option to create your own lessons. Lesson set up is a text directive at the top of the screen which is read using synthesized speech and an adjustable amount of pictures below it. Pictures do not have text labels. An example directive is "Point to the cat." A response is activated by a single tap on a picture. Feedback for an incorrect answer is a sound with a picture shake. Feedback for a correct answer is provided by a sound and zoom in on the correct selection. Single tap on the next button advances to the next picture set. Preloaded lessons have levels of Basic, Medium and Advanced. The Beginner level gives the directive to "Touch the ___" and only provides one picture (errorless). The next slide repeats the same directive but now presents a field of three pictures, including the picture from the first slide. The Medium and Advanced levels repeat this format but increase demands by adding choices that are more similar in nature and adding various vocabulary to the directives, such as "point, touch, press" for the same action. Feedback response sounds can be customized through a menu. Audio and visual prompts can be turned on/off.
Verbs with Milo (Could be Stage Two also)	Doonan Speech Therapy	\$2.99	App for giving meaning to verbs. Children touch Milo and he does an action. The word for the action pops up on the screen and is said aloud, combining multi-sensory input. There is also a button to hear the verb in a phrase.
What's That Sound	Different Roads to Learning Inc	Free	Real pictures category ID. Asked to choose the object that makes the sound. (i.e. alarm clock that rings)
Which Go Together	By Kindergarten	\$0.99 cents	Categorizing of items. The child problem solves and figures out which item goes together using bright and colorful images
Word SlapPs Lite	Zorten	Lite version is Free. Full version is \$2.99	Teach vocabulary, object identification and categorization with choice making skills. The lite version of this app provides the categories of animals and colors. Select a category and there are three levels. Level 1 asks you to find the object given one choice. Level 2 asks you to find the object given two choices and level 3 asks you to find the object given three choices. Correct answers are followed by audio and visual rewards.

correct response is presented in isolation. After locating the correct item, the learner should be rewarded for finding it no matter how many tries it took. This helps build self-esteem and confidence.

Both social and academic developments go hand-in-hand at Stage Four. It is important to provide opportunities for social interactions and play at this Stage. Many child development specialists believe that if there is a barrier to working in small groups, interacting in fine and gross motor activities, engaging in pretend play,

sharing materials or communicating, then there is a potential roadblock for cognitive and further language development. If there is an obstacle to the peer interaction process, select apps that create electronic play environments to facilitate such activities. Alternative access devices offer ways to customize and simulate the play opportunities so that learners of varied abilities can play together in facilitated settings.



## STAGE FIVE – ADVANCED CONCEPTS AND COMMUNICATION

### ABOUT THE LEARNER

The majority of the learner's academic growth occurs at Stage Five. She expands her skills from learning simple mathematical concepts to solving more complex problems. She grows from basic spelling skills to full and fluent literacy. This type of academic journey takes time. The

development of full academic functioning begins now and continues through the rest of the learner's life.

A Stage Five learner should be working on Stage Seven writing skills at the same time that she is working on complementary reading skills. She will be reading and writing simple sentences at first. As skills progress, she will be expected to incorporate vocabulary words and other content-related words, as various subjects of study become part of her curriculum. For example, if a particular word is part of her study of science, she may

STAGE FOUR - APPS TO CONSIDER			
Title	Publisher	Cost	Rationale/Description
ABA receptive ID – by Class	Kindergarten.com	Free	Categorizing activity using real pictures. Asks you to pick the picture receptively (example – show me the one that you take to school – the backpack)
ABC Magic 2	Preschool University	Free	Learn letter sounds through rhythm and repetition
Abc PocketPhonics Lite: letter sounds and writing plus first words	Apps in my Pocket Ltd.	FREE or in-app purchase of \$2.99 for complete alphabet	Three apps in one that, combined, address many readiness and assessment activities
Animals in Pieces HD	RT Studios	Free	Beginning puzzles of four to five pieces. Pieces can be moved and placed with a finger or by touching a button (magic wand). Helps the child practice organizing shapes into a whole. After a puzzle is solved, the child earns a chance to listen to a nature story about the animal. Settings allow choice of relaxing music or no sound and English or French. This is nice for grades K-3 as a science resource.
Autism Shapes	Dr. Gary Brown and Bob Bradley	\$1.99	Select the shapes for the students to identify. The program gives them two choices of shapes and the student needs to correctly identify the prompted shape.
Baby Shapes	Kindergarten.com	\$0.99	This app describes objects by shape. This activity teaches shape concept.
Bert's Bag	Sesame Workshop	\$2.99	Math readiness by having the user open a paper bag by sliding their finger over it. Next, the user must shake the bag by either double tapping the bag or shaking the iPad. Objects then fall out onto the table. The user can then slide an object over from the pile or single tap the object. As each object is touched, it is verbally counted and the number of items also appears. Already counted items cannot be counted again. When all items are counted, the total is repeated and the category label for the objects is also repeated. Bert provides verbal prompts when the program is idle for more than five seconds.
Count TV	Sesame Workshop	\$2.99	Math readiness skills through errorless counting. The user first chooses a number from one to nine on a number pad by a single tap. This selects a Sesame Street video focused on the number selected. The video pauses at a point where the user is asked to count the objects by a single tap on each object. When an object is tapped, a purple star is placed over the object to show it has been counted. If the user tries to count it again, a verbal prompt is given "oh, you have already counted that one." As objects are counted, a verbal and visual number count is provided.
(DTT) Shapes	ZbobbApps.com	\$3.99	Teaches shape discrimination. At first, the child has two choices, then the program can be set for more. The shape words are paired with the images. Motivating verbal rewards keep the child going. This is a beginning game for the Stage Three learner to move towards, making choices using a finger touch. Designed to support teaching using discrete trial training.
Letter Land	Ensensoft	\$0.99	This app provides multiple activities for matching letter names.
Magic Penny 1	Magic Penny Reading, LLC	\$9.99	Teaches phonemic awareness with letter recognition. Has both parent version and teacher version so child can also use at home.
Monster Squeeze	McGraw-Hill Company	\$1.99	In Monster Squeeze, students are given a number line and have to make guesses to determine the secret number. As students guess, they are given prompts, such as "that is larger than the secret number" or "that is smaller than the secret number." Students need to use these clues to guess the secret number.
My PlayHome	Shimon Young	\$0.99	Navigate through different rooms of the house as your child makes different members of the family do things. The adult can give students directions or users can give each other directions, having family members do different things and manipulate objects in the house
Phonics Made Easy	School Zone Publishing	\$4.99	Skills addressed include letter sounds, rhyming, blends and digraphs.
Pre Math HD	By Mintmomeg	\$1.99	Development of basic mathematic skills. There are 10 different games of colorful and easy-to-use games to develop basic math skills. Gives auditory instruction and feedback from a child.
The Foot Book	OceanHouse Media	\$3.99	Text is highlighted as it's read so children can follow along. After the page is read, user can tap on words and the word will be highlighted and read again. Many opportunities to hear rhyming words as well.

be asked to read this word in other classroom materials.

Apps recommended for developing Stage Seven writing skills certainly can be used as practice or study environments for addressing Stage Five language arts and reading skills. Apps used for spelling practice at Stage Seven can also be used to develop Stage Five reading skills.

## FEATURES TO CONSIDER

Stage Five reflects local and national curriculum standards and traditional approaches to academic content. The curriculum your learner follows will be set locally and will

address a broad range of skills needed to succeed in areas of study, such as reading, mathematics, science, social studies and geography.

We can never know how much any learner will achieve. We must assume that all learners will progress through Stage Five if given the proper support for modifications and scaffolding in the learning process. These might include the use of the right adaptive access device, as well as appropriate content.

A Stage Five learner is able to make choices in the activities used and to pace herself throughout her

interactions with the device. Look for controls, such as enlarged or spoken text, that allow her to make selections, to save or print her work and to quit the program independently.



## STAGE SIX – FUNCTIONAL LEARNING

### ABOUT THE LEARNER

A Stage Six learner applies academic concepts to real world situations. In this Stage, the learner is aware of and wants to be involved in the world around her. She begins

to apply her knowledge to allow her to become more independent. The focus changes from academics to applied knowledge and functional learning skills, commonly referred to as activities of daily living (ADL). This is indeed a thrilling Stage for the learner. Academics and social skills come together in a pragmatic way for the learner at this time. The learner's needs and goals will continue to dictate the focus and content of her education. For example, some learners may not achieve the skills needed for reading for enjoyment. However, they may acquire the ability to read for safety, which is an important skill

STAGE FIVE - APPS TO CONSIDER			
Title	Publisher	Cost	Rationale/Description
Bluster!	McGraw-Hill School Education	Free	Single or multi-player, match rhymes, prefixes, suffixes, synonyms, homophones and adjectives. Positive reinforcement and unlimited tries.
Everyday Mathematics Name that number	McGraw-Hill School Education Group	\$1.99	Practice computation and order of operations. It consists of addition, subtraction, multiplication and division.
iTouchiLearn	Staytooned	\$1.99	Teaching word and image associations
iWriteWords	gdiplus	Free - \$2.99	Teaches and reinforces letter/number construction and spelling. Fun and rewarding images and sound effects.
LAZ Reading Library (A – I)	Reading A-Z	\$6.99 for library of each level; some free, some \$0.99 for each individual book	Books are available at all reading levels. User can choose an independent level and read with independence.
MathBoard	PalaSoftware	\$4.99	Math operations in a multiple choice or fill in the blank quiz format. Setting options allows variability in what operations are addressed and how many are addressed at a time. The number of problems in a quiz can be set from 10 to 250. Problem layout can set as either horizontal or vertical. The number range can also be customized according to ability level. Quiz sessions can be timed or un-timed and a record of the user's time and accuracy level is kept. Multiple users can be maintained. Users have access to a virtual chalkboard where they can work out problems. There is also a problem solver, which provides step-by-step instruction to solve the problem. Incorrect answers are marked in red.
Milly and Molly and the Bike Ride	Kiwa Media	\$0.99 for each book in the series	A series of books with a wide range of features. Stories will read aloud. Users can click to hear individual words. Users can illustrate themselves or use published pages. Users can record themselves reading. Font sizes are adjustable. Stories can be read in five languages.
MyWordWall	FunPlay	\$0.99	Reinforces early learning, reading and writing skills. Includes 75 sight words, 12 word families, 65 word family words. Includes word puzzles, spell to match image, seek/find, memory match. Offers multi-sensory feedback.
Number Fun	Icodeway.com	\$1.99	Practice for all math facts: addition, subtraction, multiplication and division. Bright graphics. Can set level of difficulty. The Stage Five learner can work on computation skills using an online calculator.
Pizza Fractions: Beginning with Simple Fractions	Brian West	Free	Simple app that reinforces learning of fractions related to functional activity of dividing pizza into pieces.
PopMath	PopSoft	\$1.99	Basic math facts practice in colorful interface
Spelling Bug	Power Math Apps	Free	See, listen and spell 50 most common sight words.
Spellbug	By ProjectOneLA	\$2.99	Assist children in beginning spelling and reading. There are 60 preprogrammed words or you can customize your own list. You can add your own photos and voice.
SpellBoard	PalaSoftware	\$4.99	Quizzes come preloaded but can also be individually created and customized. The app maintains data on multiple users. Words lists are based on Dolch graded lists. Access is by single taps and swipes. Words can be read by a single tap on the word and are human voice recordings of a child. The study part of the app offers the user a visual of the word, pronunciation of the words and then reads a sentence using the word. Words can be copied using a virtual whiteboard. Whiteboard does not provide feedback of proper spelling. If the sentence does not provide enough context support, the definition button can be accessed for a specific definition. Definitions do not have text-to-speech support. Quizzes can be presented in the same sequence as the study quiz or randomized. The user is required to use an onscreen keyboard to input answers. Immediate feedback is provided through a visual of a green checkmark or red X. A record of words attempted and percentage correct is stored in the user file.
Splash Math	Study Pad, Inc	\$4.99	Creative math app with 16 chapters covering 200 math skills and an endless supply of problems. Fun and reinforcing graphics and sounds.
Word World: Build a Word			
Word World: Build a Word Lite	WordWorld LLC	\$0.99	Based on the PBS show Word World. Shake the screen and the letters of the names of the characters mix up. Slide the letter onto the word and the character comes to life. Lite version has only "Dog." Regular version has more characters.

for community independence. In this way, Stage Six is an academic detour from Stage Five, still offering educational content but in a more applied way.

## FEATURES TO CONSIDER

This Stage does not concentrate on educational skills in isolation. Instead, applied, practical, real world skills are the focus in a supportive and frequently practiced environment. Many of the topics addressed in Stage Six, such as money skills, have been introduced before. Now, however, the material must be practical and connect with an authentic experience. A learner might rehearse money skills within the electronic learning environment, then use those same skills when shopping for supplies at the school store.

The graphics shown on the screen should present objects realistically, as in photographs, rather than in representational drawings. This helps the learner make the connection between the representation and the real world object. A green rectangle with a large five drawn in the center does not look like an actual five-dollar bill. The Stage Six learner will have a difficult time understanding how to make the connection (generalize) between working with money in the apps practice activities and handling real money if the images on the screen don't look like the real thing.

Incorporating video modeling is ideal at Stage Six. Not only does a learner practice a skill in real world context, she also sees interactive real life examples of desired behavior.



## STAGE SEVEN

### ABOUT THE LEARNER

The ability to clearly and independently express one's thoughts on paper is the most sophisticated skill in the Stages framework. Independent writing is a high-level skill that incorporates other literacy skills, such as reading, spelling and organization. Because there is a separate teaching methodology associated with writing and the related apps selection is unique, it is set aside as a separate Stage.

A learner's ability to write independently is essential to continuing her education, seeking employment, living independently and communicating with others. When a learner writes a sentence, tremendous potential for academic independence begins. The skills involved in written expression include both language use and mechanical conventions, such as spelling and grammar.

Writing skills are interwoven with other skills considered in earlier Stages. At Stage Four, a learner works on reading readiness skills by trying to write the letters of the alphabet

and perhaps her own name. She also begins to associate sounds with letters. At Stage Five, she uses writing skills to complete most academic assignments and projects. She writes simple sentences at first, and, as her skills develop, she will incorporate vocabulary words and content-related words she encounters in other subjects.

Keep in mind that learner independence in written language is the eventual goal. Learners with more intensive cognitive and language delay can work toward supported independence in their writing. Stage Six learners do not write for academic purposes, but are expected to master functional writing skills that are needed for real-world efforts, such as writing shopping lists and filling in job applications.

## FEATURES TO CONSIDER

Most educators agree that multisensory writing environments can be very effective. It is widely accepted that the more senses the learner uses, the better she will understand and remember the skills addressed. Giving learners the opportunity to apply both eyes and ears to the writing process employs this multisensory advantage. Mobile devices offer a medium where learners can benefit from the visual presentation of letters and words combined with sound. People with learning challenges can greatly benefit from using a word processing

program that takes advantage of the device's text-to-speech capability.

Using auditory feedback, such as text-to-speech, can enhance a learner's ability to self-correct writing errors. This builds both independence and self-esteem. Turning on or off features that offer auditory reinforcement eventually gives the learner full control over the writing and editing process. Using headphones helps make this process more private. If two learners are working cooperatively, a simple audio splitter cable, available from any electronics shop, allows them to work together, both hearing their work simultaneously through headphones. While skills evolve, observe how and to what degree the learner uses auditory feedback. For example, is she helped by an auditory support that reads back each word as she types it? Does font type, size or color encourage or facilitate independence?

Productivity tools, such as word completion or word prediction, can be enormously helpful as long as the learner understands the pros and cons of their use. These tools save keystrokes and incorporate perfect spelling as long as word use is carefully considered. Learners need to be aware when words are changed because of the use of one of these tools.

STAGE SIX - APPS TO CONSIDER			
Title	Publisher	Cost	Rationale/Description
Coin Math	Recession apps	\$1.99 and free lite version	Wide range of money activities from simple coin ID to more complex concepts.
Community Signs and Words	The Conover Company	\$1.99	Designed to teach and reinforce common signs and words found in the community for independent living. Contains videos and customizable assignments.
Count Money – Coin Matching	Grasshopper Apps	Free	The real life images used for identifying and counting coins.
First Then Visual Schedule	Good Karma Apps	\$9.99	For individuals who benefit from a visual and structured schedule and environment.
Going Places	Model Me Kids	Free	Video models of community, social and ADL skills of places people may go, what to expect. Photo slideshows of children modeling appropriate behaviors.
Life Skills Sampler	The Conover Co.	Free	Videos modeling real life environments and tasks that might be unfamiliar to the learner, such as the airport. Offers videos for simpler topics, such as one for apples. Helpful for life skills learning.
LookTel Money Reader	IPPLEX	\$1.99	Mobile assistant to verify money and to ensure you are getting the right amount of change back.
Shopmate	Doublewedge	\$0.99	Shopping list organizer. You can set the store, date, payment information and additional notes. Add items to a list and the app will sort them for you when shaken. You can e-mail or message your list. The list can be populated from previous lists and from a favorites list. Gives statistics of shopping patterns as well.
Shopping List	Target Works	\$1.99	User generates a grocery list using a combination of pictures, illustrations and text labels. It comes with a starter library; however, photos can be imported from your own library. The library is categorized according to departments of the grocery store. Access is through a single tap. The selected item is transferred to the list on the left and automatically put in a category heading. The list can then be used at the store. A single tap to the item on the list checks it as bought and moves it to the bottom of the list. When adding your own photos, you have the ability to add a label and category. The app does not provide text-to-speech support; however, Voiceover can be used in the lists page.
Tell Time-Little Matchups Game	GrasshopperApps.com	Free	Telling time matching game with digital clock and analog clock.
ZoomReader	Ai Squared	\$19.99	Optical character recognition and text to speech used to read back text captured by device camera.



## CONCLUSION

This is by no means is a comprehensive list. For example, we chose not to mention apps designed for augmentative communication. Another example is the category of reminders or schedule support apps. There are numerous valuable options to consider. Making recommendations for mobile device apps is like aiming at a moving target. It's practically impossible to keep meaningful and timely lists of recommendations. Instead, it is important to consider a framework within which apps might be considered on an ongoing basis.

Because the Stages framework was originally developed as a way to suggest meaningful software recommendations, it makes sense to apply this strategy for also selecting appli-

cations for mobile devices. Although there is minimal cost involved when considering which app to select, there is so much more than cost to be considered. Making developmentally appropriate content selections lead to learner independence and success in vitally important ways. Mobile devices offer an unprecedented learning environment that must be purposefully implemented.

Using this framework for selecting apps, it is possible, even likely, to find content that was not necessarily designed for users with special needs. Not only are mobile devices socially acceptable, but now fun content and skills practice might also be provided through the use of apps designed for anyone, as long as the features we need are provided in settings and

content adjustments created within apps features. This opens a whole new world for differentiating learning opportunities for everyone.

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## WEBSITES

<http://www.diigo.com/user/mobilelearning>

My own diigo page collecting articles and Web sites for further information

<http://mobilelearning4specialneeds.wikispaces.com/>

Wiki created and updated by Apple Distinguished Educators Mark Coppin and Luis Perez

<http://ipadforlearners.wikispaces.com/>

Wiki created and updated by Karen Janowski of EdTech Solutions

<http://www.iear.org/>  
Web site posting apps recommendations for and by educators ■

STAGE SEVEN - APPS TO CONSIDER			
Title	Publisher	Cost	Rationale/Description
Dr. Peet's Writing Buddy	Dr. Peet's Software	\$1.99	Speech to text support for the writing process. Font size and color are customizable. Information written can be used to text or e-mail a contact in the contact list. Videos and maps can also be searched by accessing an icon that will load the appropriate Google. Talkback settings can be customized to read letter, word, sentence or all the above. Common mispronunciations or abbreviations can be customized to be read in a particular way.
Evernote	Evernote	free	Organize your notes and ideas. Capture in one place but access from other places and on other devices.
My Photo Story	CLIC360	1.99	Create your own story using pictures and text in a simple comic book type layout.
Sentence Builder	Northwest Kinematics	\$3.99	Students choose the correct words to build a grammatically correct sentence about a picture. The user's progress is tracked individually and each user has a stats page.
SentenceBuilder	Mobile Education Tools	\$3.99	Help learner generate grammatically correct sentences via a selection wheel/spinner. Helps improve grammar as well as sentence structure by providing lists of words to select from and gentle feedback where he makes a mistake.
Speak It	Future Apps Inc.	\$1.99	The user can enter text via the on-screen keyboard or cut and paste information from another document. Accessing the "speak it" button with a single tap will read the document. An audio file can be generated and e-mailed. Documents can be saved within SpeakIt. Spelling errors are not prompted or corrected. Voices can be changed and purchased through iTunes. Font size, voice volume, and voice speed can all be customized.
Story Builder	Mobile Education Tools	\$3.99	Helps students improve paragraph formation, improve integration of ideas, and improve higher-level abstractions by inference. Audio clips promote improved auditory processing.
Story Patch	Haywoodsoft LLC	\$2.99	Story starters are available if needed, or students can write their own story. There are over 800 illustrations. They can be customized, and photos can import. There is also a tutorial and stories can be read and shared by email.
Story Wheel	EverAge	Free	Students record a story by spinning a wheel to get a picture, and then narrate a portion of the picture. Students can then listen to their story with animated pictures.
Type-O HD	2nd Guess	14.99	Teaches writing & spelling skills. Audio feedback, word prediction, spell check. Writing can be e-mailed or saved on clipboard for opening elsewhere.
Writing Prompts	21x21 Media, Inc	\$1.99	Writing prompt generator with scene elements, sketches, colors, genres and writing types

# DISKoveries

New Software and Hardware, Professional Resources, DVDs for Learning and Apple Apps and iPad Accessories

By Joan Tanenhaus

## FOR MAC ONLY

As assistive technology specialists, we are used to seeing “Windows only” on software. This section will describe some Mac only software, as well as some new Mac versions of programs that previously were Windows only.

**Parallels Desktop 6 for Mac** ([www.parallels.com](http://www.parallels.com)) Parallels Desktop for Mac is a great solution if you are trying to run Windows applications on your Macintosh side-by-side. When installed, you will be able to run Windows programs as if they were native to your Mac, all without rebooting. You can drag and drop documents, pictures and music between Windows and Mac applications or launch your favorite Windows programs right from your Mac Dock. You can choose to run Windows in full screen mode if you want – which replaces your Mac desktop with Windows 7, Vista or XP – or you can run them side by side. You can also use Apple Gestures in Windows applications – Parallels supports multi-touch Trackpad gestures in Windows applications. Parallels works on any Macintosh computer with an Intel processor (1.66 GHz or greater). To run 64-bit operating systems, an Intel Core 2 or higher processor is required. A minimum of 1GB of memory (2 GB recommended) and about 500 MB of disk space on the Macintosh HD is required.

**KeyStrokes4 with Layout Kitchen** (AssistiveWare: [www.assistiveware.com](http://www.assistiveware.com)) For Macintosh users only, KeyStrokes is a full-function advanced on-screen keyboard floating above other applications that can be used with a mouse, trackball, head pointer or any other mouse emulator. It comes with many different types of keyboards, ranging from very small to king size, extended with numeric pad, simple alphabetic (for beginning users), chubon and damper layouts (for single digit use), standard

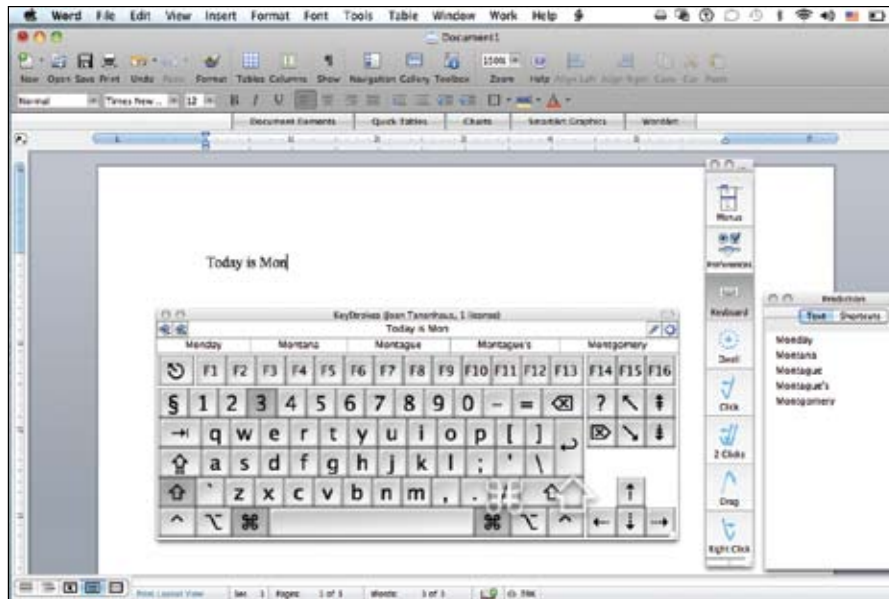
plus keyboards with Undo, Cut, Copy, Paste and other keyboard shortcut buttons and many more. For those who can position the pointer but cannot click the mouse button, Dwellix is integrated within the program – it allows mouse button clicks to be entered by holding the cursor motionless for a programmable period of time. It includes right and left clicking, double clicking and dragging. (The user can decide which of these should be visible and active so if you never use one of these functions, you can turn it off.) In addition, KeyStrokes now includes LayoutKitchen, which lets users design

included for English US, English UK, French, German, Dutch, Norwegian, Italian, Spanish and Russian. KeyStrokes4 works seamlessly with all standard OS X applications. It learns your vocabulary as you type. The word prediction features also include the word prediction within the keyboard or as a separate window. The bar above the prediction also shows the sentence that is currently being written, which might be helpful for those who prefer monitoring their sentences without looking away from the keyboard. Another interesting feature is that you can turn off/on some of the features so you can show

just the keyboard, just the word prediction or just the Dwellix – or any combination of these. Other features include the ability to speak what you type (English), configurable auto-spacing and auto-capitalization features, shortcut expansion features and a simple mode to limit a student’s access to more advanced features. In addition, KeyStrokes can be used with Windows applications that you have running in the Parallels environment (see above for review of Parallels). KeyStrokes4.1 requires Mac OS X 10.4 or higher with a minimal screen resolution of 800x600 and at least 10 MB of free memory. For optimum performance and access to all features, Mac OS X 10.5 Leopard or higher is recommended. This is an extraordinary program that is extremely functional,

customizable and flawless in its operation. You can try before you buy – download the time-limited full trial version to see how it works before making a purchase.

**GhostReader** (ConvenienceWare: [www.convenienceware.com](http://www.convenienceware.com)) ConvenienceWare is a new product family from AssistiveWare, the leader in accessibility solutions for Macintosh computers. GhostReader is a text-to-speech program that lets you listen to your Mac talking in the language of



KeyStrokes4 with Layout Kitchen (Assistiveware).

their own virtual keyboards for typing, for launching applications, to run AppleScripts and much more. It allows the keys to be given color so that vowels or functions keys can be color coded to help learning them. KeyStrokes also includes advanced multilingual word prediction with word completion, next word prediction and multi-word prediction in many languages. Choices can be displayed either by alphabetical listing or by frequency of word choice. Currently, multi-word prediction dictionaries are

your choice. It lets you listen to selected text in an application with word or sentence highlighting. You can point the cursor to text in Safari or Pages to hear the paragraph below the cursor. When writing, you can listen to your own text to proof read for spelling, grammar, sentence structure and paragraph integrity. You can also create personal podcasts by converting text to audio files or to iTunes tracks. Listening to these audio files on your MP3 or iPod is a great way to listen to driving directions, to help a student with difficulty reading, to enhance listening and reading comprehension, improve pronunciation of foreign words and study while commuting or driving. There is a pronunciation editor that can be used to modify the way a word is pronounced or to add new abbreviations. GhostReader includes naturally sounding voices in a language of your choice. Available languages include American English, Arabic, British English, Czech, Finnish, French, Canadian French, German, Greek, Icelandic, Italian, Danish, Dutch, Flemish, Spanish, American Spanish, Polish, Portuguese, Brazilian Portuguese, Norwegian, Russian, Turkish and Swedish. This is an excellent program for Macintosh users who struggle with reading and writing difficulties. Like AssistiveWare products, you can try GhostReader before you buy – download the time-limited full trial version to see how it works before making a purchase.


**The following programs are not Macintosh only programs, but some are recently available on Macintosh and the others are available separately from the Windows versions. I wanted to highlight them so that Macintosh, as well as Windows, users are aware of their availability and their uniqueness in Special Education.**

**WordQ V3 for Macintosh** (WordQ- [www.goqsoftware.com](http://www.goqsoftware.com)) WordQ is not a Macintosh only program, but it is new to Macintosh and I felt it was important to let all Mac users know that this excellent word prediction program is now compatible with their computers and works along with any standard writing software (Microsoft Word, Pages, e-mail, Web browsers and instant messaging). When you type a letter, WordQ predicts what you might be writing. It displays a list of words and if the word you are entering is there, just chose it with a single keystroke or with the mouse. All words can be read aloud to help you make the selection. You can also use different included vocabulary lists and/or create specialized topic lists of your own (i.e., if the student is writing a report on biology) to make predictions even better and faster. As the student uses the program, WordQ learns the vocabulary and predicts with even greater accuracy. In addition, WordQ allows users to select the root word and see different word endings by pressing backspace; has high-quality natural sounding text-to-speech voices; has in-context prediction that displays word predictions wherever the text cursor is placed (even when the cursor is in the middle of a word); usage examples with speech feedback of commonly confused words, such as there/their; user vocabularies and examples; and consideration of creative spelling when making predictions. Word Q can be used also for assisted reading and beginning writing skills.


Highlight the text, click the read button and your text is read aloud. For beginning writers, it can be set to say each letter as it is typed, to speak each word when the space bar is pressed and to read the entire sentence when a period is entered. WordQ turns any word processor into a talking word processor and word prediction does not have to be used for very early writing development. This same feature lets the older and more experienced writers use the word prediction only as needed, to spell words that are difficult for them. They can leave the prediction box hidden most of the time and show it only when they need help spelling a word. The word prediction box can be customized in the following way: number of predicted words (one to nine), font style and size, order of words (most likely or alphabetical), layout (vertical or horizontal list), position (follows text cursor or remains in one location) and color of background and text). WordQ is an excellent writing tool for learners of all different levels. You can download a free 30-day trial of WordQ to try before you buy or watch tutorial videos and other helpful information at [www.goqsoftware.com](http://www.goqsoftware.com). (Requires Mac OS X 10.4 or newer.)

**Read & Write 4 Gold for Mac** (Texthelp: [www.texthelp.com](http://www.texthelp.com)) Read & Write 4 Gold for Mac is also not a Macintosh only program but is published separately from the Windows version. This is a review of the Macintosh version that now incorporates all the features of the Windows program. Designed for individuals who need support with reading, writing and learning, it has features that improve reading fluency and comprehension and helps with writing, spelling, test taking and research. It also includes

some powerful teacher support tools. Read&Write GOLD is a customizable easy-to-use toolbar that integrates directly with mainstream applications, allowing students to access the reading and writing support tools they need from within the programs they use every day. Some of the features that make Read & Write 4 Gold an extraordinary learning program are: Text to speech (hear your text read aloud, with dual highlighting, and also works with Flash and text embedded within graphics); Phonetic spell checker; Word prediction (learns the user's style and predicts words they are typing or words they might want to use next); a talking dictionary (each word has a description and sample sentence); a thesaurus and homophone checker; a pronunciation tutor (breaks words into syllables, allowing easy recognition of syllables in a word, and includes an on-screen moving mouth to help develop more accurate speech); and a talking calculator. Read & Write 4 Gold also includes a screenshot reader – used to read aloud all text, including text that is embedded within an image or video or is contained within inaccessible flash. Simply click the toolbar button and surround the area you would like read. The selected text will be analyzed with an OCR process and be read aloud with highlighting. The speech maker allows the conversion of text to MP3, WMA or WAV files that can be played on your iPod. In addition, you can scan paper-based documents into Word or to PDF format and the text can be read aloud and edited. Study and Internet tools include Web searches through your default search engine, an online translator that translates into multiple languages and speaks aloud while highlighting,




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and Study Skills Tools that highlight and extract text from any document or Web site to create study guides, outlines, etc. Read & Write 4 Gold for Mac also comes in a Mobile USB format that includes all of the features of Read & Write Gold on CD with no installation necessary. It comes on a flash drive that contains all of the files required to run Read & Write GOLD and lets users store their own files in addition to their personalized settings. Great for those who use multiple computers and want to always have Read & Write Gold available to use – encourages independence and inclusion. Visit the Texthelp Web site and download a free trial of the program and use it for 30 days.

**Kurzweil 3000 Version 4.5 for Macintosh Standalone** (Kurzweil/Cambium Learning: [www.kurzweiledu.com](http://www.kurzweiledu.com), [www.cambiumtech.com](http://www.cambiumtech.com)) Kurzweil 3000 is also not a Macintosh only program but is published separately from the Windows version. Again, I want Macintosh users to know that this valuable program is available for them. Kurzweil 3000 is a curriculum independent tool that can be used across the range of curriculum areas, grade levels and student skill levels. It is a powerful way for students who struggle with printed text to access curriculum materials so they can keep up with assigned reading, learn critical study skills and successfully complete writing projects and tests independently. Kurzweil 3000 for Macintosh is designed specifically for Macintosh computers with a simple, graphic user interface. Some of the features include dual highlighting (highlight a sentence, line or phrase in one color and each word

in another color as it is read aloud); one-click access to reference tools like dictionaries, synonyms, syllables, word spelling, etc.; writing tools, such as spell check when writing, text-to-speech options (talking word processor), audible spell checker and word prediction. Kurzweil can read document in modes such as continuously, self-paced or Word-by-word. In Read Silently, the words are highlighted but not read aloud. You can also magnify spoken words. You can specify how fast or slow you want Kurzweil to read. Some of the powerful study skills include text highlighting, annotations, bubble notes (teachers can embed bubble notes containing questions and instructions to assigned reading to help students stay on task and support reading comprehension), voice notes, bookmarks (that mark where they left off in a text or date points in text where assignments are due) and extraction of outlines or word lists. The same reading and reference features are available with Mozilla Firefox on the Internet. Teaching tools also include the Writing Path – students can take notes from text, import to Writing Path, then review, create outlines and check work with a teacher-guided review checklist. There are also pre-made graphic organizers, with notes, to guide the process of writing for a number of different kinds of writing. Using Kurzweil 3000, you can create audio files so you can take your reading where you want on your iPod. With Kurzweil 3000, teachers can provide tests in digital format that provides full audible support for reading and re-reading questions as needed. Some of the unique test-taking capabilities include the ability of students to independently complete



Pix Writer (Slater Software).

worksheets, classroom test or standardized exams containing circle-the-answer, fill-in the blanks, true/false and essay questions within the program. Kurzweil 3000 for Macintosh is compatible with most electronic files, including Microsoft Word, RTF and PDF files (PDF file support only with Kurzweil 3000 Professional Color and Black and White editions), as well as the Windows version of Kurzweil 3000 for easy file sharing across school networks. Documents can also be scanned and read aloud. In the manual, there is also a chart of Keyboard Equivalents (shortcuts) that can be used for many different functions. These are particularly helpful for students who have difficulty with mouse access or just prefer to use the keyboard. Included also are over 1000 electronic texts, including literary classics for adults and children, reference materials and historical manuscripts.

**Picture It and Pix Writer** (Slater Software: [www.slatersoftware.com](http://www.slatersoftware.com)) PictureIt V5.2 is a picture-assisted reading program that is available as separate versions for both Windows and Macintosh, in both English and Spanish. It is a teacher resource that lets you adapt materials for any curricular area. With over 10,500 literacy support pictures and the ability to import photos to personalize and customize, teachers can create their own picture-assisted reading materials to help develop literacy skills. With it, they can make reading material in any curriculum area, print the documents or worksheets, use Reader Mode to hear them read aloud, create communication boards and game cards, create and send flash cards home and much more. To make a document, you just enter the words in the story text window and click a button to add pictures to the words – it's that easy! Print out or listen at the computer. You can also import your own pictures, use a phrase with one picture (i.e. peanut butter, thank you), customize layouts to create interesting activities and worksheets, customize fonts, change voice, rates and pronunciation, add borders, change color of words, etc. This program is easy to use and an excellent way to assist reading in children and adults who are struggling with literacy. Pix Writer is a companion program that is designed as a picture-assisted writing tool for beginning and struggling writers. It is a writing-with-pictures talking word processor. Also for Windows and Macintosh and in both English and Spanish, you can create a word bank for students to guide their expressive writing so that they can write whole words, sentences, and even stories by selecting buttons that contain both the words and the pictures. You can easily



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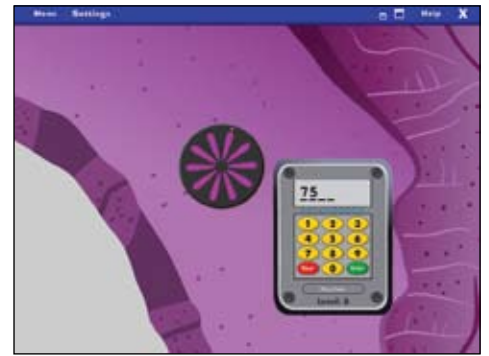
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create PixWriter word banks by typing in a word and pressing the space bar – a button is instantly created. When you have completed the word bank, you lock it and it's ready for the students to work with. Students simply click the button to write, using mouse, keyboard, touchscreen or switch with scanning. PixWriter gives immediate speech feedback. With buttons structured for individual students, writing is guided and children tend to include more detail in their writing. Easy to use and so motivating and powerful for beginning writers. By grouping your buttons and color coding them by parts of speech (i.e. subject, verb, small words, nouns, etc.) you will also be guiding grammar, word order and sentence structure. To see a video of PixWriter, you can visit <http://www.youtube.com/watch?v=LtxEj2ESIBo&feature=related>. There are also free interactive webinars, and demonstrations of both programs on the Slater Software Web site. You can also visit a section called Free Stuff. There you will find all kinds of resources created with PictureIt and Pix Writer that can be downloaded free of charge. They are stories created in Picture It in all categories, including animals, holidays, seasons, school, explorers, social stories, biographies, weather, hygiene, and much more – with new things coming every month. If you have children struggling with beginning reading and writing, these two programs are an excellent way to reinforce beginning literacy and give the children an opportunity for success that will motivate them to achieve even further.

## SPECIAL NEEDS: NEW SOFTWARE, PROFESSIONAL RESOURCES AND DVDS

### Webber HearBuilder Auditory Memory

(SuperDuper Publications: [www.superduperinc.com](http://www.superduperinc.com)) This is the fourth in the excellent HearBuilder series. For both Macintosh and Windows, it is designed to practice auditory memory, closure and comprehension skills by teaching key strategies for remembering numbers, words, sentences and stories. It is set within an adventure where each activity is a different mission. However, it can also be used by older students by skipping the introductions and proceeding directly to the activities. This research-based software includes five listening activities with many levels each. Memory for Numbers (listen to a secret code), with 17 levels, has goals for students to recall three digits with no delay with visual cues through recalling six digits with a 10-second delay without visual cues. Memory for Words, with 84 levels, has students recalling three related, one-syllable words presented at half second intervals with no delay, no foils and with visual cues through recalling five unrelated, one- to three-syllable words presented at quarter second intervals when given a 10-second delay, with no visual cues and four foils. Memory for Details, with 64 levels, has students identifying a person from a field of three, given one detail, visual cues, no delay and no distractions through identifying a person from a field of five, given four details, no visual cues, a 10-second delay and distractions. Auditory Closure, with 22



Webber HearBuilder Auditory Memory (SuperDuper).

levels, has students determining the missing word in the final position of a phrase or sentence that has a high predictability, given a phonemic cue through determining the missing adjective in any position of a sentence that has low predictability and is less than 13 words and given no phonemic cue. Memory for WH Information, with 12 levels, has students answering one WH question given two sentences with repetitions and no background noise through answering four WH questions given three sentences with no repetitions and background noise. As with other HearBuilder software, there are two editions. The Home Edition is for use with one to four children, monitors progress and prints progress reports. The Professional Edition monitors progress and tracks data for an unlimited

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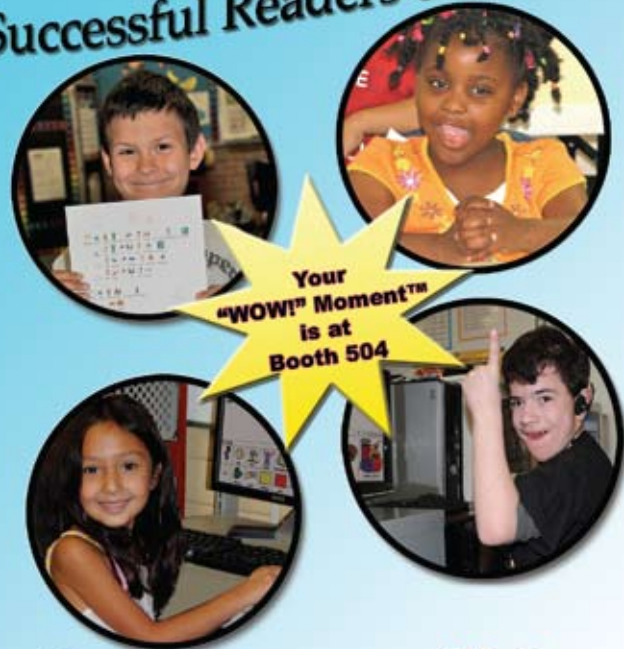
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number of students, allows you to individualize each student's programs and to set levels of difficulty for each activity. You can also add background noise at any level and adjust the volume for each student. It lets you customize and print reports and analyze all responses. As with the other HearBuilder programs, this program is extremely well designed with great graphics and sound and with creative learning activities that engage the students and help them master the tasks.

**Counting Songs 1 and Counting Songs 2** (Inclusive: [www.inclusivetlc.com](http://www.inclusivetlc.com)) This is a delightful set of two programs for both Macintosh and Windows. Counting Songs 1 is designed for young children just learning early number concepts. There are 10 different songs, including songs like Five In A Bed, Five Little Ducks, Five Little Firefighters, Five Little Monkeys, Five Little Speckled Frogs and others. Seven of the songs count up from one to five (or one to three if you choose). The remaining three count down from five to one. There are three stages – the songs play through one verse at a time; there is counting before each verse; and the user counts every number before each verse. The songs are lively and fun, with repetitive lines. The graphics are clear and large with fun animations and adorable characters that engage the children. You can also print out all the lyrics to each song. Counting Songs 2 is designed for children ages up to 11 with difficulties learning number concepts. The format is similar, but the songs feature characters and animations that are appropriate for older learners – such as Five Girls in a Ring (hula-hoop), Five Rock Stars,

Five Superboys, Five Singers, etc. Both programs can be used with mouse, touch screen and whiteboard. Users just click the characters or the arrow key to advance the program and hear the counting. Both are excellent for individual and for group use. An audio CD of the songs is included in each program.

**Listen & Respond Professional Edition** (Judy Lynn: [www.judylynn.com](http://www.judylynn.com)) In the June DISKoveries, I reviewed an excellent new interactive program from Judy Lynn for learning transitional skills, life skills, pre-vocational skills and with those who are becoming more involved in the community. It introduces and reinforces the connection of a verbal request to pictures or words within seven familiar environments (Cafeteria, Convenience Stores, School Store, Farmers' Market, Hardware Store, Boutique and Sporting Goods Store). The user is the worker and customers come up to the counter, one by one, to order one or two items found in that type of store. Now, there is a new version – Listen & Respond Professional (Windows only), with many outstanding new features. The new edition allows the customers to request one to 10 items (this feature is set by the teacher.) It also lets the teacher set the customer's speech rate, add customers from photos or from any picture file, and create photo ID cards for screen display or for printing. You can specify which items can be requested by the customer (from 161 different items), determine the frequency of the store manager's positive or encouraging comments, access via touch window, mouse, auto scanning with one switch or step scanning with two switches. You are also able to choose to



Early Literacy Skills Builder (ELSB) Software (Attainment Company).

display pictures, words or both pictures and words on the buttons. Data is automatically collected for each student that can be viewed as text or in a spreadsheet.

**Early Literacy Skills Builder (ELSB) Software** (Attainment Company: [www.attainmentcompany.com](http://www.attainmentcompany.com)) Early Literacy Skills Builder Software (ELSB), for Macintosh and Windows, is a language-based, pre-literacy curriculum for elementary aged students with moderate to severe developmental disabilities. It's a multi-year program with seven levels (each with 14 objectives) that teaches both print (sight words) and phonemic awareness. It incorporates scripted lessons, least-prompt strategies (a system of prompting the student in which the student is first given the opportunity to respond independently; if no response, a verbal prompt is given; if no response, a model is given; if still no response, a physical prompt is given until the correct response is given), teachable objectives, built-in lesson repetition, and ongoing assessments. All students begin at Level 1, but if a student struggles at that level, you can go back and administer Level A. Recommended instruction is on a one-to-one or small group basis, for two 30-minute sessions daily. The software can be used as a stand-alone curriculum or together with the print version. Lessons and objectives include Flashcard Games (to read sight words and to point to sight words to complete sentences), Pointing to Words (point to text as it is read), Hidden Words (say and/or point to a word to complete a repeated story line), Answering Questions (respond to literal questions about a story), Chunking Words (syllable segmentation), Tapping Out Sounds (tap out sounds in CVC words – consonant-vowel-consonant); Letter Sound Game (identify letter-sound correspondence); First-Last Sound Game (identify the first and last sounds in words); Finding Pictures with Special Sounds (identify pictures that begin/end with given sounds); Stretching Words (point to sound in words – sound segmenting); Finding Pictures (blending sounds to identify pictures); New Word Games (point to pictures/words representing new vocabulary); and Fun With Writing (use new vocabulary words and personal information to increase awareness of print and promote use of new vocabulary learned). Assessments are assigned at the end of each level. (Lessons may be repeated many times before the level is completed.) Sight word flashcards plus images in the program are available to print. They can be used to create overlays for communication devices or other support materials you create to be printed. These will all help with generalizing learned information. ELSB is a scientifically-based early literacy curriculum that



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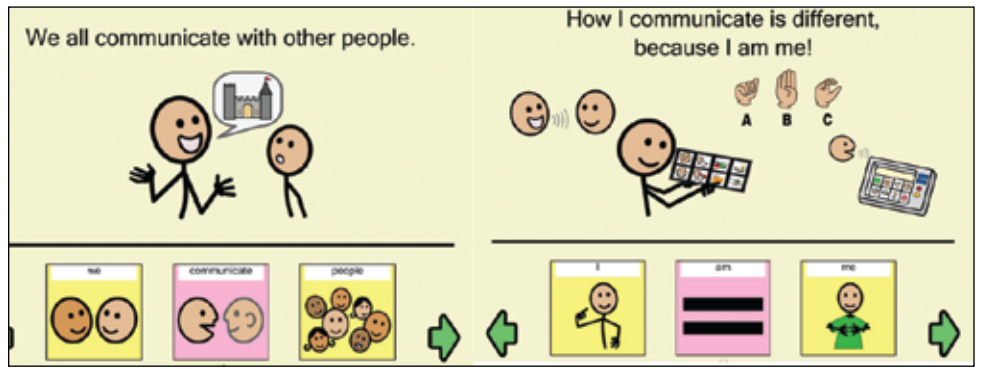
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**Click To Read: All About Me** (Marblesoft: [www.marblesoft.com](http://www.marblesoft.com)) This is the third in the Click to Read Series for Mac and Windows. The first two, Click to Read Life Skills and Click to Read Animal Habitats, were reviewed in previous DISKoveries. This new program, Click to Read: All About Me, follows the same format. There are four stories for early readers, using SymbolStix picture communication symbols (color coded by parts of speech). Designed for ages 3-7, this is an excellent program for vocabulary and language development and the development of early literacy. Each of the included stories has a reading mode, where the reader listens to the story, sentence by sentence, and becomes familiar with the vocabulary and symbols. Clicking anywhere advances to the next page. The story can then be read in an Interactive mode. In this mode, the learner again sees the text, picture and three symbols for the text. They can then click any symbol to hear its meaning read aloud. When they are finished exploring, they can then click the arrow to advance to the next page. In the Tell The Story mode, there are three levels and children tell the story by arranging the symbols. The first level is errorless – two of the symbols are in place and the third (only symbol below the line) just gets selected to complete the sentence. In the second level, two of the symbols are already in place but there are now three symbols below the line and only one is correct. In the third level, children must arrange



Click To Read: All About Me (Marblesoft)

the three symbols in correct order to re-create the sentence. There is a Show What You Know activity for each story, where the players can demonstrate their understanding of the core vocabulary in a practice mode or by playing Bingo or Concentration with the picture symbols. The original and motivating stories included are I Am Me (highlighting difference and similarities between all people), How Do You Feel (emotions), Using My 5 Senses, and Looking Good (daily hygiene). Each story builds vocabulary through simple text and picture support and encourages literacy while providing student independence and success. The program works with mouse, touch screen or switches and has many options to change voice (male/female, background, etc.). Along with each program is a "print book"

that allows you to print a copy of the story for each student that can be used during guided reading, for independent practice or for home reading. The core vocabulary is also provided on small cards that you may print, laminate and cut apart. All three of the programs in this series are excellent for literacy and language for all young learners. Programs are available individually or as a bundle of all three.

**Switch Skills Scanning** (Inclusive: [www.inclusiv-etc.com](http://www.inclusiv-etc.com)) This program, for Macintosh and Windows, contains 22 simple activities that can be played with one or two switches. To help learners make choices with scanning, these activities for single and for two switches are split into five sections with increasing levels of skills and complexity. They begin with "free choice" activities (errorless) and progress to specific



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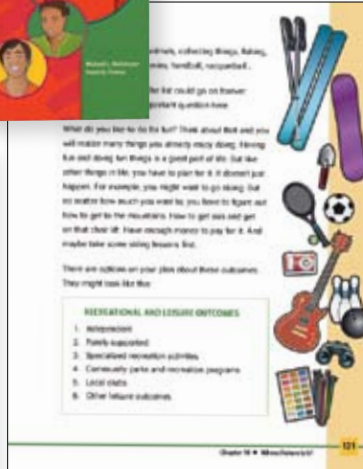
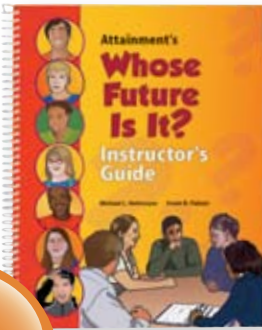




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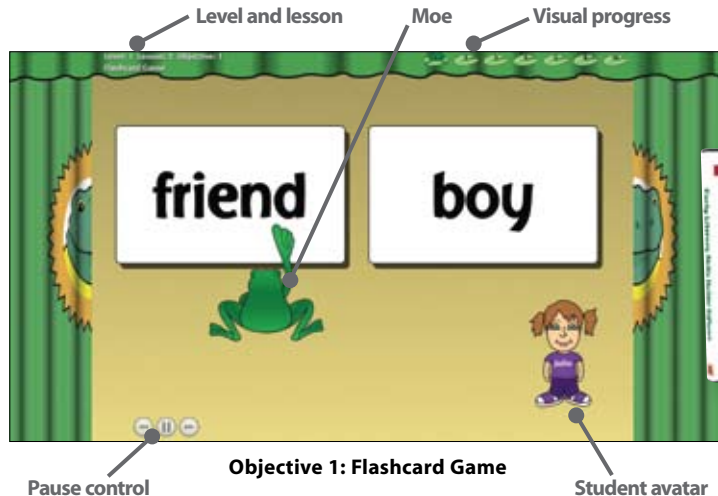


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targets. "Free Choice" activities include Instruments, Rockets, FunFair and Gadgets. Three objects in the category appear on-screen in a line. Players press the switch to begin the scan and then choose any of the objects to see it animate. "Find The Object" activities have seven more advanced versions of Free Choice activities. A single object will appear in one of the three boxes. When the scan box is on the object, users select with their switch to see it animate. In "Complete the Set" activities, users select the object that belongs with two others that are already on screen. Only the object that completes the set is in the scanning boxes (other boxes are empty). The four activities in "Create A Scene" are slightly more advanced. Multiple objects (four) must now be added, one by one, to create a scene. They can be selected in any order. The final activity is "Grid Scanning"- with two or three rows. These begin with free choice activities that allow the user to pick any objects. More demanding tasks with specific targets are then introduced. This is another excellent program from Inclusive and ideal for students learning to use switches with scanning to make choices. Great practice for learning to use scanning with communication devices.

**Matrix Maker** (Inclusive: [www.inclusivetlc.com](http://www.inclusivetlc.com)) Matrix Maker was designed by Inclusive for Window XP and higher to be a simple and easy software program for making printed communication overlays and educational resources. There are templates for communication devices, schedules, calendars, communication books, boards, flash cards, scheduling charts, labels and games/worksheets. It uses the 12,000 SymbolStix library from News-2-You.

There are many options to add pictures from the computer, flash drive, camera, etc., as well as Webcam. You can flip, rotate, make painting adjustments to the picture, cell color, add and change text and many other options.

**My Crazy Life** (Apte: [www.apte.com](http://www.apte.com)) Looking to motivate young girls to do some writing at the computer? This standalone multimedia program for both Mac and Windows provides a personal diary that can be kept on the computer – with the ability to add pictures, videos and music, as well as text. Without going online, girls can record their private thoughts, personal pictures and favorite music in a private format (password protected). Just click the calendar feature to review and browse old entries. There are log-ins for up to 10 users, so it's a good program to also use in the classroom for journaling or within the therapy situation.

**Other language programs from Super Duper** ([www.superduperinc.com](http://www.superduperinc.com)) include: Funzee Everyday Go-Togethers. In this fun learning game for ages 4 and up, players learn the vocabulary and find the 72 pairs of photos that go together, in five interactive activities, with three difficulty levels. As difficulty level increases, so do the go-togethers! In Learn Go-Togethers, players look at the photo on the left and click the photo on the right that goes with it for a grid of four pictures. The program will repeat any items the student misses until they are answered correctly. In Bingo/Lotto Game, they look at the photo on the left and click the photo that goes with it from a grid of 16 pictures. In Matching Game, they play concentration and match up the go-togethers. The remaining two activities are

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for groups of players – you can enter two to four players or teams and they can play a concentration game. You can also create bingo or lotto boards and print them out so the whole class can play. Teachers can build their own lotto and bingo boards and save them. Webber Basic Classifying: This program includes seven Classifying Fun Decks, including Action-Agent (i.e., What rings? Bunny, telephone, tape), Classifying (hammer and nails go with which group: tools, communication, colors), Function Match-Ups (you wash your hair with it: rake, remote, shampoo), Name that Category (a frog, a kangaroo and a rabbit are: places, yellow things, hopping animals), Part to Whole Sorting (these are all parts of a ...) and Things That Go Together. Webber Figurative Language Interactive Fun Decks, for Kindergarten and up, contains six fun decks: Idioms, Metaphors and Similes, Famous Words and Proverbs (The more the merrier really means: \_\_\_\_\_), Homonyms (his favorite fruit is a pair, pear), Multiple Meanings and Synonyms (one word in a sentence is highlighted and players find a synonym from three choices). All questions and answers are read aloud. All games can be played with or without sound, with a partial or full deck or multiple decks. The programs track data for an unlimited number of students and store the items each student identifies incorrectly. You can also print progress reports and change settings for each student.

**Attribute Tiles** (Attainment Company: [www.attainmentcompany.com](http://www.attainmentcompany.com)) This software program teaches students to name and sort objects of different sizes, colors and shapes. There are three activities, each with many options. You can choose

to name and match by shape, color, size or by all randomly. You can select to have one to nine different tiles on-screen at the same time. The Place activity is really fun after basic shape and color discrimination is learned. A design made up of different shapes appears on the screen and the user has to match and move the required pieces to the puzzle to color and complete the picture. When completed, a full color, real picture of the object appears. Options for this activity include the option to show only required pieces, to show a color picture or to hint shapes as mouse passes over. Attribute Tiles works with Windows and Mac OS X and is touchscreen compatible.

**Step-by-Step Choice with Levels Communicator** (Ablenet: [www.ablenetinc.com](http://www.ablenetinc.com)) With all the features of the Big and LITTLE Step-By-Step Communicator, this new one adds the power and convenience of levels. Levels can be used to pre-record messages to be used at specific times or for recording and storing sequential messages. There's a total of four minutes of recording time. To advance the messages, you activate for the first message and then activate again. You can put in one word prompts at each level (i.e. cookie, music, book) followed by the full request. Users would then listen to the prompt, and if it's not what they want, advance to the next level. When they hear what they want, they let the full message play. You can attach the switch of your choice and play messages with an external switch. If you want only a repeating message, you can set up so that the same message will repeat with each activation of the switch top.



Model Me Going Places Model Me Kids DVDs ( ModelMeKidspany).

Switch includes interchangeable switch tops in Red, Yellow, Green and Blue.

**Logitech Wireless Illuminated Keyboard K800** (Logitech: [www.logitech.com](http://www.logitech.com)) With this wireless keyboard, the backlit keys automatically adjust based on the amount of light in the room, helping preserve battery life. You can also manually adjust the keyboard's backlighting, using the FN+F5 and F6 keys to adjust to off, 25 percent, 50 percent, 75 percent or full brightness. The sensors detect your hands as they approach the keyboard to turn the backlight on and off. You get bright illumination day or night. The concave design of the keys, along with softly rounded edges, help position the fingers properly. To charge the keyboard, you connect the included cable to a USB port – no disposable batteries needed. You can always check the level of your battery by pressing FN+F7. This is an excellent

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option for those who need visual support when using a standard keyboard. The keyboard can also be used with a laptop.

**Logitech Wireless Solar Keyboard K650** (Logitech: [www.logitech.com](http://www.logitech.com)) This wireless keyboard is solar powered and charges itself whenever there's light. It stays charged for at least three months in total darkness. It's only 1/3 inch thick and will work with a laptop or a desktop. This is a very "green" keyboard with a small footprint – PVC-free construction and a fully recyclable box.

## PROFESSIONAL RESOURCES

**The Ultimate Guide to Assistive Technology in Special Education** (Joan L. Green: [www.innovativespeech.com](http://www.innovativespeech.com), [www.prufrock.com](http://www.prufrock.com)) This is an excellent, comprehensive guide to using technology in all aspects of special education and intervention, including language comprehension, speaking, reading, writing, thinking and memory. It is written for parents, teachers, therapists and individuals with learning challenges. An introductory chapter explains in detail some basic issues of computer access, switch software, speech recognition, keyboard and mouse options, different computer types and operating systems, and Windows and Macintosh accessibility options. The book is divided into chapters on Technology to Improve Verbal Expression, Auditory Comprehension, Reading Comprehension, Reading Skills, Written Expression and Cognition-Learning-Memory. These chapters include treatment approaches, specific software programs with detailed descriptions and other technology options and tools, such as closed captioning, electronic organizers, talking photo albums, talking translators, LeapPad and digital photography. Extensive and excellent references are made for online programs, Web sites, and apps for iPad. There is a section on features of different word processors, picture-based talking word processors, word prediction, dictionaries and graphic organizers. Included also are chapters on games, free programs, online interactive activities, Internet communication (blogs, chat rooms, e-learning, podcasts) and much more. This book is a must-have for those who provide assistive technology services, who use technology in teaching or therapy and anyone who uses a computer or related technology with individuals with special needs. Also visit Joan Green's Web site, [www.innovativespeech.com](http://www.innovativespeech.com), for helpful resources and up-to-date information and to sign up for her newsletter.

**Comprehending More Complex Auditory Information** (Jean Gilliam DeGaetan, available from SuperDuper Publications, [www.superduperinc.com](http://www.superduperinc.com)) This is a workbook designed for students who are having difficulty with auditory processing of oral language, remembering events in order, retaining specific information, retaining subtle implied information and who need practice in relating events that occur in more than one time period. The goals are to listen to two-part and three-part sequential stories to retell the order of events, to comprehend and retain important details and subtle information and to be able to accurately answer questions at both the end of each paragraph and at the end of the complete story. The instructor reads the first part of the story aloud while the students look at the picture that shows a scene from the story. Then the instructor reads five questions aloud for the students to answer. Then the second part of

the story is read aloud, followed by the questions again. After that, there are follow-up activities to remember and understand subtle (implied) information, to understand time concepts in the story, to rapidly recall specific information, to remember sequencing through clues and to be able to retell the story. Directions are provided on each instructor's worksheet to enable the professional to use the unit without prior preparation. There are 21 different activities. Good for teaching sequencing, concrete details, subtle clues and social language.

**Attainment's Writing with Purpose Teacher's Guide** (Angel Sterling-Orth and Linda Schreiber, available from Attainment, [www.attainment-company.com](http://www.attainment-company.com)) Writing With Purpose is a resource written for teachers to use with students in grades 4-9 who need support in the writing process. It builds written language skills using oral language and thinking. The book's major emphasis is on the different types of expository text (text that instructs or presents information): writing to sequence, to compare, to describe and the writing process (planning, writing, reviewing, adjusting and monitoring progress). There are four units, each with detailed lesson plans. Unit One, with five lessons, covers topics such as what we write, what we know about writing, writing as a form of communication, and the writing process. In Sequential Writing, students write a letter home, an e-mail, a note and a recipe. There are also units on Descriptive Writing and Comparative Writing. In the Appendix, there are excellent teacher/student resources, such as an evaluation guide for rating the students' writing, outline guides for sequencing, written guidelines for descriptions, and a Venn diagram for comparing.

## DVDS FOR LEARNING

**Model Me Kids DVDs** ( ModelMeKids: [www.modelmekids.com](http://www.modelmekids.com)) Four excellent new DVDs for video modeling from Model Me Kids. For ages 2-8, Model Me Going Places has 12 different sequences in which children model appropriate behavior. These include the Doctor, the Mall, a Birthday Party, the Hairdresser, two sequences about the Dentist (one on what the dentist does and the other on what the patient does), the Grocery Store, Transportation, the Library, Playground a Restaurant and at School. The sequences feature songs by music therapist Rachel Rambach. This unique merger of video modeling and music therapy is designed to help teach skills in a way that appeals to the strengths of children with developmental disabilities. The graphics and the music are used to make the video appealing to children with autism, Asperger syndrome, and preschool children of all developmental levels. A CD-ROM of photographs is included with each video. The photos are a great way to demonstrate and review the social skills shown in the video. Photos may be printed as flashcards for handy reference or viewed as a computer slideshow. Also included is an insert with song lyrics. Also for ages 2-8, Model Me Faces and Emotions also feature the songs by Rachel Rambach. Children on the video demonstrate a variety of faces and emotions, including happy, sad, afraid, tired, angry, excited, surprised, bored, calm, proud, love and shy. Each scene lasts between one and two minutes and at the end is a storyboard summarizing the emotion shown. Each emotion is demonstrated in more than one situation and across environments to help promote generalization. A CD-ROM of photographs

is also included, along with the storyboards. Model Me Kids also has two new DVDs for older children, those between ages 9-17. The first of these is Model Me Organization & Motivation: teen-aged children model skills for getting organized, staying motivated and persisting with tasks, including: Do My Best, Planning Ahead, Being on Time, Note-Taking, Organization, Persistence, Break It Down, Flexibility, Focus, The Big Picture, Memorization and Mistakes. The children in the video narrate each scene. There are two versions of the videos. The first is with narration and graphics that help explain the particular rule. In the second presentation, the same video is repeated without narration and graphics. This allows a parent, teacher or therapist to customize the lesson to the need of the individual child. Each skill is demonstrated in more than one situation and across environments to help increase the generalization of the material. The second video for older children is Model Me Confidence & Bullying Prevention. It includes children modeling skills to prevent bullying and to build self-esteem. These include Self-Advocacy, Peer Pressure, Choosing Friends, Building Strengths, Visualization, Positive Self-Talk, Scripting, Stay with Others, Telling Isn't Tattling, Walk Tall and a Group Discussion. The video is hosted by children from the DVD, who narrate each scene. As with the Organization & Motivation DVD, there are two version – one with narration and one without, and each skill is demonstrated in more than one situation and across environments. All DVDs include a CD-ROM of photographs also. Visit the Web site to see screen shots and short videos of each DVD to see actual sequences and music. All DVDs are extremely well done.

**Shalom Sesame** (SISU Home Entertainment: [www.sisuent.com](http://www.sisuent.com), [www.shalomsesame.org](http://www.shalomsesame.org)) Five wonderful new volumes of this exceptional DVD series starring the Sesame Street characters. These complete the 12-part DVD series starring Grover and Anneliese can de Pol as they travel to Israel to learn about the Jewish culture and tradition, as well as showing the diversity of Israeli life to American children. In Volume 8, Grover Learns Hebrew, Grover learns new words in Hebrew, sings the Aleph-Bet song and tells about his favorite Hebrew word. Volume 9, Countdown to Shavuot, tells about the celebration of receiving the Torah. Volume 10, The Sticky Shofar, is about Rosh Hashanah, the Israeli New Year. Grover and others learn a valuable lesson about friendship and forgiveness just in time to start the New Year right. In Volume 11, Monsters in the Sukkah, children learn about the two holidays Sukkot and Simchat Torah as Grover decorates the sukkah, and take a visit to a kibbutz. Volume 12, Adventure in Israel, is the final DVD in this series – watch Grover explore Israel his own way – by balloon.

**Some other fun DVDs for preschoolers include Timmy Time Picture Day** ([www.timmy-timedvd.com](http://www.timmy-timedvd.com)), Bob The Builder The Big Dino Dig ([www.bobthebuilder.com](http://www.bobthebuilder.com)) and Roary the Racing Car ([www.roarytheracingcar.com](http://www.roarytheracingcar.com)), all from HIT Entertainment, distributed by Lionsgate.

## APPLE APPS AND IPAD ACCESSORIES

**Big Grips Frame and Stand** ([www.biggrips.com](http://www.biggrips.com)) This is an iPad case that is made for children – it is a soft foam frame that makes the iPad easy to

grab and hold. It does not cover the back or front of the iPad, just surrounds the edges. The iPad slips in easily and snugly and leaves access to all ports and controls. It has a matching stand for working at a desk or watching movies. It can be placed in the frame in either portrait or landscape orientation. Made from the same material, the stand is sturdy and stable. The frame and stand are non-toxic and lead and latex free and come in a variety of colors that children love. They are lightweight, durable, easy to clean and are sold separately.

**BoxWave styluses** (BoxWave: [www.BoxWave.com](http://www.BoxWave.com)) If you thought that the only stylus out there were the thin ones (slightly smaller than 1" circumference), you are going to love these styluses from BoxWave. The Universal Capacitive Stylus and the Universal Capacitive Styra are both 1.25 inches in circumference and, as a result, provide a little better gripping capability. In addition, the Universal Capacitive Stylus has a small connector on top through which is a string handle that can be attached to keychain or other places to keep it safe. The Universal Capacitive Styra also has a pen at the other end so it serves a dual purpose. It features either a magnetized or a non-magnetized cap. The magnetic cap option allows you to store the cap on the stylus when the ballpoint pen is in use, ensuring you never lose your cap while writing. But my favorite for adults and children with special needs is the Universal Sketching Capacitive Stylus. It has a pencil-shaped design (eight sided) with a circumference just short of an inch and one half. It is made of durable aluminum with BoxWave's high-quality responsive tip. It really provides a good


grip for those with grapho-motor difficulties and is excellent to use, especially with writing and tracing apps, like Space Board (see below).

**More iPad cases:** With the new iPad2, there are many additional kinds of cases available. If you have the Apple Smart Cover, you still need additional protection for the back of your iPad. So here are some new and great solutions to this problem, all from [www.boxwave.com](http://www.boxwave.com): iPad2 Smart Sleeve – this is a thermoplastic polyurethane case specifically designed to be paired with Apple's Smart Cover. It's thin, flexible and lightweight. The Smart Sleeve picks up where the Smart Cover leaves off, providing durable protection for the back of your iPad. When combined, the result is all-around protection. The Smart Sleeve has cut-outs that provide access to all of the iPad speakers, controls and ports. It also has a cut-out section designed to fit the Smart Cover hinge. (It comes in all colors to match the Smart Cover.) iPad2 Smart Back Cover: This is a polycarbonate (firm) case that also pairs with the Apple Smart Cover. It is lightweight and durable and designed to protect the back of your iPad with its clear, glossy finish. iPad SoftSuit with Pocket: This is a slim carrying case with a zipper. It cushions your device and also has an integrated pocket for carrying the charger when needed. Fits your iPad with the Smart Cover, too. Quilted iPad Carrying Bag: Your iPad fits snugly inside with thick and soft padding all around that's internally reinforced with a firm plastic shield. With its double zipper design, you can lock your iPad as you carry the carrying bag by its integrated and removable handle.

**PCS Apps** (Mayer-Johnson: [www.mayer-johnson.com](http://www.mayer-johnson.com)) There is now a new series of apps from Mayer-Johnson using Picture Communication Symbols – you will love using them with your students with autism, Down syndrome, language delays, pervasive developmental disorder and more. They will be great at home, in school, in speech therapy – and anywhere the iPad is. There are four apps available free of charge. In each, there is one set of PCS cards/symbols and you can order more sets if you like through iTunes. In PCS Vocabulary Flash Cards, there is a sample deck of 50 symbols. (You can order other categories, such as places, holidays, food, action, emotions, etc.) The picture appears with the word below – touch to hear it spoken. In PCS Scramble, there is a sample deck of 50 symbols (other sets include three-letter words, four-letter words, etc.). In this app, you see a symbol (touch it to hear its name) and below are the letters to spell the word all scrambled up. Children touch and drag the letters to spell the words. PCS Vocabulary Bingo contains the animal set. Others available are actions, foods, holidays, home items and much more. You select a board size (3x3 or 5x5) and match the picture on the side to a picture on your bingo board. PCS Vocabulary Memory also has an animal set, board sizes 4, 6, 8, 12, 16 and 20 and children can play a concentration-type game with the pictures.

**SpaceBoard Digital WorkBooks PreK** ([www.space-boards.com](http://www.space-boards.com)) With this excellent app, students with grapho-motor difficulties can use the iPad to learn and practice their basic writing skills. This app, the beginning one in the series of 12, developed by classroom teachers, focuses on tracking and tracing,

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directionality, tracing large pictures, tracing basic shapes, numbers and upper and lower case letters. Using a matching technique (i.e., trace or draw a line from .... to .....), other preschool concepts are integrated into the learning (i.e. go-togethers, rhyming words, initial consonant sounds, matching skills, etc.). Within the app, there are 18 Skill Packets with about 20 pages in each packet. Children can choose their pencil width and color to work in. There is an eraser to choose to remove small areas, as well as the ability to clear the page completely. This gives users the opportunity to correct errors and to practice repeatedly. There is also a Clear All Books feature on the main menu. Some other options include Wrist Protection (protects the screen from accidental wrist and hand movements) and right/left hand selection. There are also blank pages for creative drawing and blank ruled pages for creative writing. A stylus is recommended (see above Boxwave reviews for a description of some of the styluses available that might be appropriate for preschoolers.) This is a company that is committed to supporting the special needs population and would appreciate any feedback.

**Speech With Milo: Sequencing** (www.Speechwithmilo.com) Milo is back, this time with 35 sequencing activities. Children put three cards in order to create a sequence – for example, planting a flower, baking a cake or catching a ball. There is no narration, but under each card is the printed text (i.e., getting in car, starting car, driving car). When a piece is placed in the correct box, there is reward applause, if selected. (There also is an option for a sound indicating an unsuccessful choice.) Touching

the phrase button at any time will give you the topic (i.e. Milo is driving a car.)

**Super Duper Webber Photo Cards: What Are They Thinking?** (www.superduperinc.com) This app include 60 photos of different situations. Students are encouraged to look at the picture, analyze the situation and make suggestions regarding what the characters in the card are thinking. It is designed to improve inferencing, reasoning and conversational skills. All the people and animals in the cards have a thought bubble above their heads. Touch the screen to hear what everyone is thinking or touch a thought bubble to hear just what that person is thinking. Touch the refresh button to hear some other thoughts that fit the card, too. When the students answer with their thoughts, you can keep track of them by touching the red circle for incorrect and the green for correct. Slide the cards to get to the next picture. You are then able to collect data for one student and you can e-mail your results. Good to use in speech and language therapy to work on grammatical and linguistic skills, articulation and fluency, narrative skills and increasing sentence length. Super Duper also has a Data Tracker app that can be used to track success during a therapy session and an Age Calculator app (free).

**Shake & Make** (Day and Night Studios: http://www.nightanddaystudios.com) With this new puzzle app, players, ages 8 and up, see the picture, study it, then shake the iPad and the pieces fall to the floor. Goal is to put the picture back in under a minute. There's a hint button for another peek at the picture if you're not sure what to do next. More difficult puzzles unlock as you solve easier ones. There

are over 100 puzzles to unlock. For younger children, you can turn off the time to allow more time to solve the puzzle. They can also solve the puzzle by tilting and rotating the iPad to watch each piece snap into place.

**EBooks from Oceanhouse Media** (Oceanhousemedia.com) This company continues to be a leader in bringing classic children's books to the iPad. In the past few months, they have continued to develop new storybook apps and to increase their range. All the books are presented with three ways to read. 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. Some of the new stories they have created recently include: Dr. Seuss's Happy Birthday to You, Mr. Brown Can Moo, Can You?, The Cat in the Hat Comes Back, and The Thanks You Can Think. This title offers a new interactive feature. For the first time, you can "build" each page by touching one of the floating question marks that appear in the white sections of the screen. After each page is created (typically taking about five taps), you can see the items labeled both in print and with clear speech. There is also a new Mercer Mayer book, I Was So Mad, two Berenstain Bears books – Learn

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to Share and Bedtime Battle, and three of Helen Lester's Tacky books: Tacky the Penguin, Tacky & The Winter Games, and Tacky's Christmas. There's also Elmer's Special Day by David McKee (the story of Elmer the Patchwork Elephant), It's Not What You've Got by Wayne Dyer (lessons for kids on money and abundance) Five Little Monkeys Sitting in a Tree and Five Little Monkeys Wash the Car, both by Eileen Christelow. Once Upon a Potty by Alona Frankel is also available in both a girl and a boy version, and includes the potty song and a sing along included, in addition to the read aloud features. And for those dinosaur seekers, there's Tyrannosaurus Rex from the Smithsonian Institution. Oceanhouse Media now has several "lite" versions online – in these free apps, you can download and try the first 10 pages of the book before buying the whole book. Once you try them, you will want them all.

**MyTales Digital Books for Children:** (mytales-digital.com) This company was created with the goal of adapting exceptional children's books for use on digital devices. Working together with book publisher Tiger Tales, they have created a group of books and lullabies that are excellent for young children. One Rainy Day is all about colors and how ducks love those rainy days. One Rainy Day means red boots, orange umbrella, blue puddles and much more. The book has great graphics, fun sound effects, characters that talk and touchable objects. There are four activities – Read to Me, Read by Myself, Color (from a palette of 10 "raindrop" colors, children touch the color they want to fill four favorite scenes from the story) and Play (For example, children are directed to "Put the red boots on duck" – and then they drag the red boots from the side and place them on duck's feet. One Snowy Day is all about numbers, with a similar format of Read To Me, Read by Myself, Color and Play. Also delightful, with one wooly hat, two warm mitten, etc. There are also lullabies that come to life with beautiful illustrations, song and narrations. You can even record your own versions to enjoy with your child. Lullabies include Hush, Little Baby, and Sleep, Baby Sleep, with great illustrations and singing, reading and instrumental versions.

**Callaway Books** (Callaway Digital Arts: www.Callaway.com) Some other great digital books come from Callaway Digital Arts. In Angelina Ballerina – Angelina's New Ballet Teacher, you can have the whole story read aloud, with hotspots on the screen to help reinforce the story and delight the children. You can also Paint with the iPad and color in five of the pages from the story or create an easy or hard jigsaw puzzle. In addition, there are five videos to watch, all starring Angelina. Narration, graphics, animation and sound are all wonderful! For the boys, there's Thomas The Train: Hero of the Rails, with the same features to read the story, paint and do puzzles. And for all children, there's The Monster at the End of This Book starring Grover – delightfully illustrated, with a very funny main character and a funny story plot. Children tickle Grover, untie knots, turn pages and knock down a brick wall, which gets Grover very upset because he's afraid of the monster at the end of the book. Delightful story and some hints for parents on dealing with children's fears are also included. Callaway books are masterfully done!

Here are some of my other favorite apps for literacy learning, sequencing, language and following directions – not to mention fun – to be enjoyed by children and adults of all ages!!

**Cookie Doodle, Cake Doodle, Jelly Doodle, TieDye Doodle, Ice Doodle, and Candy Doodle** (www.shoethegoose.com)

**The Scoop Shop** (http://hippohooray.com)

**Bookworm** (www.popcap.com)

**Montessori Crosswords** (http://lescapadou.com/)

**Word Wizard** (http://lescapadou.com/)

**iSwifter** (http://iswifter.net) lets you play sites that use Flash

**Hangman for Kids** (http://ar-entertainment.net/learning/)

**I Spy Spooky Mansion** (http://www.scholastic.com/apps/)

**ReadIt** (www.smackall.com) paste anything into this app and it will read it aloud for you ... and it's free!

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

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CONVENTIONAL

# WRITING

FOR STUDENTS WITH DISABILITIES

## Maximizing Time, Teaching and Technology for the Planning Stage of Writing

**“Ninety percent of children come to school believing they can write.”**

(Lucy Calkins, 1994, p. 62). The vast majority of typical children, including children who have not yet learned the alphabet, hold this expectation. Do all students participating in special education share this expectation? And, equally important, is it shared by all adults who work with students in special education?

### INTRODUCTION

Conventional writing refers to writing practices that conform to the standard rules of grammar, punctuation and language use. We are also referring to generative writing, not copying, choosing from a closed set of choices or using symbols to compose.

“Good literacy instruction is good for all children.” (Martine Smith, Literacy in Ireland, The Asha Leader, 12(10), p. 14-15). “No evidence demonstrates that children who are struggling to read require radically different teaching approaches from their peers, although instruction may require more intensity. For children using AAC, we may need to adapt materials and presentation, but the fundamental principles of effective instruction do not change”

We must start with the expectation of success, then follow that up with sufficient time for learning, high quality teaching strategies and supportive technology as needed.

In addition to low expectations, a lack of time spent on writing instruction is a major barrier for many students in special education. Students must have opportunities to write for multiple and meaningful purposes every day.

Many special education teachers have not had coursework covering best practice or exemplary teaching strategies for writing. However, as we heard from Martine Smith, best practices from general education can be followed, with adaptation of materials and presentation.

Finally, we know that many of those adaptations will include technology, both instructional technology and assistive technology. Throughout this article we will suggest technology to support writing for students with disabilities. The focus will be on simple, inexpensive technology that was available in the classrooms where we work or easily created, downloaded or purchased.



**CAROLINE MUSSELWHITE**, EdD, CCC-SLP, is a speech-language pathologist with 35 years experience, the last 30 years specializing in assistive technology. In addition to consulting in public schools throughout the states, Caroline provides workshops worldwide and writes books and software for educators, students and families.



**DEANNA KEMPKA WAGNER**, MS/CCC-SLP, is a speech-language pathologist with over 20 years experience providing consultations and training in the area of assistive technology, with an emphasis on augmentative communication. She works with educators and families to achieve goals in the area of AT selection and implementation through Southwest Human Development and Madison Elementary School District. She also provides AAC training to adults at Valley Life Adult Day Treatment Program.

### THE WRITING PROCESS

#### Pre-writing

“Getting ready to write”

Decide on a topic

Brainstorm

Organize ideas

#### Drafting & Writing

Write and refine paragraphs

Focus on communication of meaning

#### Sharing & Responding

Share work to gain feedback

Peer editing

Writing Workshops

#### Revising & Editing

Revise content

Proofread for writing conventions

Text reorganization

#### Publishing

Celebrate and showcase finished products

Build confidence in students as writers



## CONVENTIONAL WRITING INSTRUCTION: THE BIG PICTURE

**Models of Writing.** A number of writing models have been advanced. Many are based on the work of Flower and Hayes (1981), with their model of the cognitive processes of writing. The model shown below is derived from work of a number of researchers and is used widely in many of the school districts where we have worked. (See Graphic 1: The Writing Process)

**Conferencing.** Lucy Calkins (1989, 1994) has taken the writer's workshop to a new level, including learning to confer with students. Conferencing can support students at all stages of the writing process. Thus, she describes content conferences design conferences, process conferences, evaluation conferences, and editing conferences. The important factor to remember is that students need to have appropriate language for being a full participant in these conferences.

**Mini-lessons.** Too often, students are assigned a writing piece, then graded on their attempts, but never actually taught how to write. Mini-lessons are five- to 15-minute quick lessons that focus on one very small idea or strategy. They typically include teacher modeling, not just a lecture. Lucy Calkins suggests that "the mini-lesson is our forum for making a suggestion to the whole class." (1994, p. 193). We will share several mini-lessons and short case examples for the planning stage of writing.

**Alternative Pencils.** Many students will not be able to use typical pencils but will need some type of light tech, such as an eye-gaze alphabet or alphabet flip board, or a high tech pencil, such as a communication device, a computer or an alternate keyboard, such as a NEO 2. Many alternative pencils are available on the CD titled Writing with Alternative Pencils.

## PREWRITING INTRO

Prewriting is the "getting started" component. Murray (1982) suggests that the planning-out stage should account for 70 percent of the writing time. Hillocks (1987) found that skilled writers spend significantly more of their time than less skilled writers in planning and organizing what they are going to say. Sadly, the National Center for Educational Statistics reports that most students spend three minutes (on average) thinking and planning before writing! Graham & Harris review research on the lack of planning by students with learning disabilities, even when they are prompted to plan (2005, p. 14 – 15). Prewriting includes several parts: getting ready to write, selecting a topic, brainstorming and organizing ideas. The area of prewriting will be the focus of this article, due to its importance for students who are struggling writers.

## PREWRITING: TOPIC SELECTION

**Topic Setting Via Objects and Photos.** Beginning writers often use tangible items to help them set topics. Following are several examples, highlighting both light and high technologies, plus mini-lessons on choosing topics.

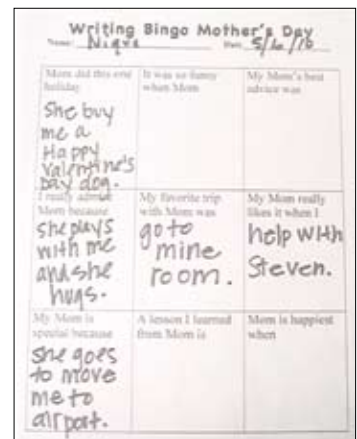
**Remnant Books.** Elliott's mother has started a "remnant book" for him

(photo album from the dollar store), where she keeps items, such as ticket stubs, leaves found on a walk and a lock of hair from his recent haircut. During writing time, his teacher, therapist or tutor gets the book and helps him flip through it. Elliott uses a single message device, saying 'That's the one!' when he finds the topic he wants to write about.

**Photos on Computer:** Ms. Jackson's class uses a switch-activated camera to take photos of fun events, including field trips, walks, special visitors and special activities, such as cooking or science experiments. These photos are put in a PowerPoint slideshow, so that students can quickly flip through to pick a photo to write about. Several students use switch adaptations (e.g. Switcheroo) to page through the slideshow.

**Talking Photos.** Ms. Jamison's class also uses photos as topic setters, but she has placed her photos in a Talking Photo Album for Anton. She records a sentence for each photo to assist him in developing context for the photo.

**Writing Bingo.** This idea, shared in Rog & Kopp (2004, p. 63) has been effective for many teachers. Ms. Robertson used it in her high school classroom with students who use AAC devices. The students are shown a bingo board with writing. The teacher picks several prompts and models filling them in using the communi-



Graphic 1 - Writing bingo.

cation system of each student. Then students are encouraged to use their devices to think of short answers to several of the prompts, trying to achieve bingo (see Graphic 1). This is often carried out across several days. Students then pick one of the topics to write about. Writing bingo boards are modified to accompany thematic units, holiday seasons and events, such as field trips. Multiple samples of Writing Bingo are included on the Write to Talk CD: Conventional Writing. See also the July, 2011 Tip, Writing Bingo, at [www.aacintervention.com](http://www.aacintervention.com)

**Photos on iPad Apps.** Ms. Hughes is an innovative teacher who supports her struggling first-graders in developing topics in a range of ways using the iPad. Samples include:

### Topic Setting Communication Display

I want	to write about	I imagined	funny	a person			
I don't know what	How about	I dreamed	scary	a place			
Help me think	Is it	I saw	sad	a thing			
< speak >	something	that happened	exciting	an animal			

**Write to Talk CD**

Graphic 2

- Making drawings and writing about them with StoryBuddy.
- Creating sticker pictures in ClickySticky and e-mailing them so that each student's picture is saved. These can then be used in other programs, such as Classroom Suite or StoryBuddy.
- Developing a puppet show in PuppetPals
- Adding photos to TapSpeak Sequence and supporting students in recording an idea for each photo.

For more ideas for creative applications of these and other apps, please visit our wiki: <http://spedapps2.wikispaces.com/>

**Using YouTube Videos.** Many writing instructors, including Sam Sennott and Pam Elder, use YouTube [www.youtube.com](http://www.youtube.com) to find videos that are motivating for writing. Samples include: the skateboarding bulldog <http://www.youtube.com/watch?v=ziDeUbifKIM> and the little girl washing Mom's computer <http://www.youtube.com/watch?v=qm3tYrewde4>

**Topic Lists and Conferences.**

Remember that the best topics are those developed by the individual student, rather than suggested by others! Students can keep lists of possible topics and use those lists in conjunction with a teacher or peer conference to choose a topic. Students who are nonspeaking or have limited language might benefit from a topic-selection communication display, such as the one shown in Graphic 2. Note that many are left blank, to be filled in later representing current activities, interests and themes.

**PREWRITING: BRAINSTORMING**

**Drawing to Write.** Young children typically start drawing and gradually add text to their drawings. This is a strategy that may be highly supportive of beginning conventional writers. For students with disabilities, it may be helpful to use software and apps that include stickers or drawing supports, such as those listed in the previous section.

Eddie enjoyed using ClickySticky to make pictures on his iPad. Because he needs BigKeys to write, his aide sent the drawing to his computer, where she imported it into a talking word processor (Classroom Suite). He could then use his adapted keyboard and hear text-to-speech feedback as he brainstormed words to go with his picture.

**Light Tech Graphic Organizers for Brainstorming.** Graphic organizers are a hallmark of brainstorming. These may be simple organizers, such as writing directly on a whiteboard, overhead or interactive whiteboard.

Ms. Martin's class was getting ready to write a character description. They first engaged in shared writing, using a topic that was familiar to all – Santa Claus. Ms. Martin made a quick graphic organizer with "Santa Claus" in

the center box. Students used words or symbols displays, such as Print n Communicate to call out words to add into the bubbles. They discussed each entry and picked their favorites to include in their shared writing.

**High Tech Graphic Supports for Brainstorming.** A number of software programs offer graphic organizers to support brainstorming. Samples include Inspiration, Kidspiration, and SOLO DraftBuilder. Typically, these programs come with many samples and provide Web sites with additional samples.

Mr. S. encourages his students to work as a group when they are brainstorming. He often gives a portable keyboard, such as a NEO, to each group. They are given their topic and asked to enter all of their ideas into one file, adding a return

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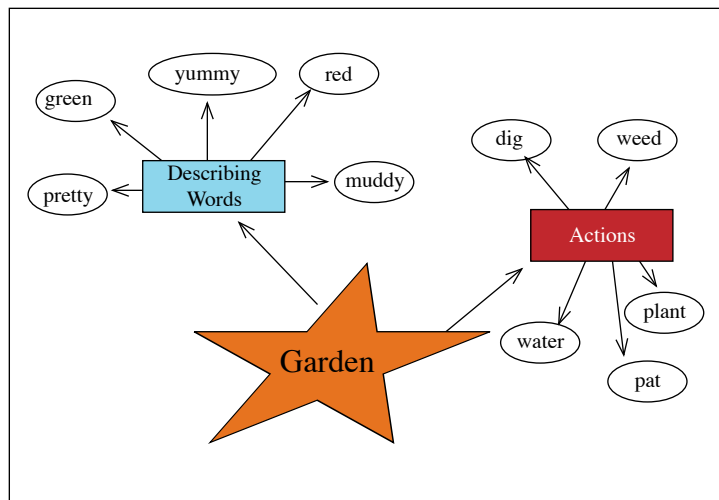
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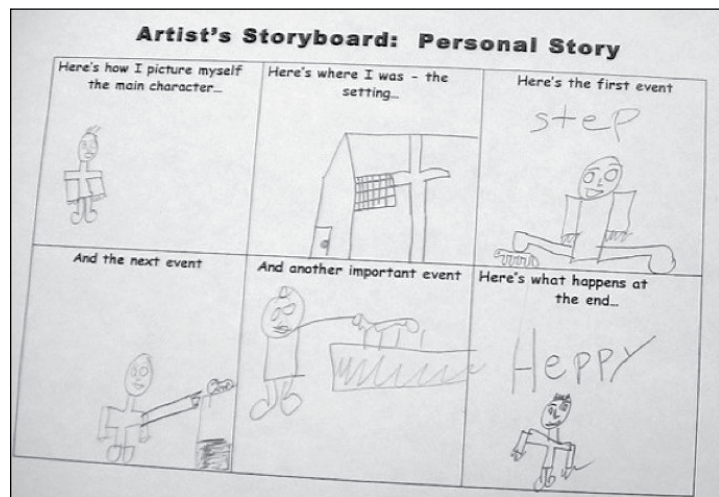
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Graphic 3 - High tech graphic supports for writing



Graphic 4 - Using storyboards.

after each entry. Today the red group was asked to think of actions related to a garden, while the blue group was asked to write describing words for the garden. Mr. S opened an Inspiration file, entered Garden as the topic and then made a button labeled ACTIONS. He pressed the Rapidfire button and attached the NEO, hit Send File on the NEO, and the students' ideas cascaded into the box, amid a chorus of "Wows!" (Graphic 3) See the June, 2011 Tip at [www.aacintervention.com](http://www.aacintervention.com) for specific directions.

## PREWRITING: ORGANIZING

**Light Tech Graphic Supports for Organizing.** Graphic organizers can also be highly supportive of organization, which is a trait that is difficult to master for many students with disabilities. One strategy that we have used with great success is storyboarding. Following is a summary of one of Caroline's mini-lessons.

**Storyboards.** First, Caroline used an overhead or document camera, such as IPEVO, to show a storyboard that she had drawn. She asked the students to help her re-create the story, looking at one frame at a time. As they watched, she added some text "to help remember the story." Students were told about Caroline's

friend, who is a famous author, and still uses storyboards for every book she writes. Then students were given a storyboard and asked to plan about a topic they had picked the previous session, using Writing Bingo. Graphic 4 shows a storyboard done by a fifth-grader, telling about a rat in the house, which ended up in the dumpster, making him very "heppy."



**Paragraph Frames.** Another mini-lesson involves using a graphic organizer to support writing a paragraph, which was difficult for many of the students. Multiple organizers, including the "Sandwich" and the "Big Mac" are available for planning paragraphs. Musselwhite designed the T.I.E. organizer, which is less childish, but reminds students to add their Topic, Ideas and Ending (Graphic 5). Again, the teacher must offer at least one mini-lesson to help students learn to use this support.

**High Tech Graphic Supports for Organizing.** The same software used in brainstorming webs can be used for creating organizational webs and other graphic supports for students. Many districts have opted into programs that provide a set of webs to be used, such as Thinking Maps [www.thinkingmaps.com](http://www.thinkingmaps.com) Maps can be created to support many evidence-based writing strategies. For example, Graham & Harris (2005) review a number of scientifically validated

writing strategies. Many of these strategies can be supported through light or high tech graphic organizers. One example is the TREE strategy

for scaffolding writing of persuasive essays. Graphic 6 shows a high-tech version of this strategy, while Graphic 7 shows a light tech approach. Note

Student: \_\_\_\_\_ Date: \_\_\_\_\_

 **T.I.E. It Up!!** 

Title: \_\_\_\_\_

**Topic Sentence:**

\_\_\_\_\_

**Ideas:**

1. \_\_\_\_\_

2. \_\_\_\_\_

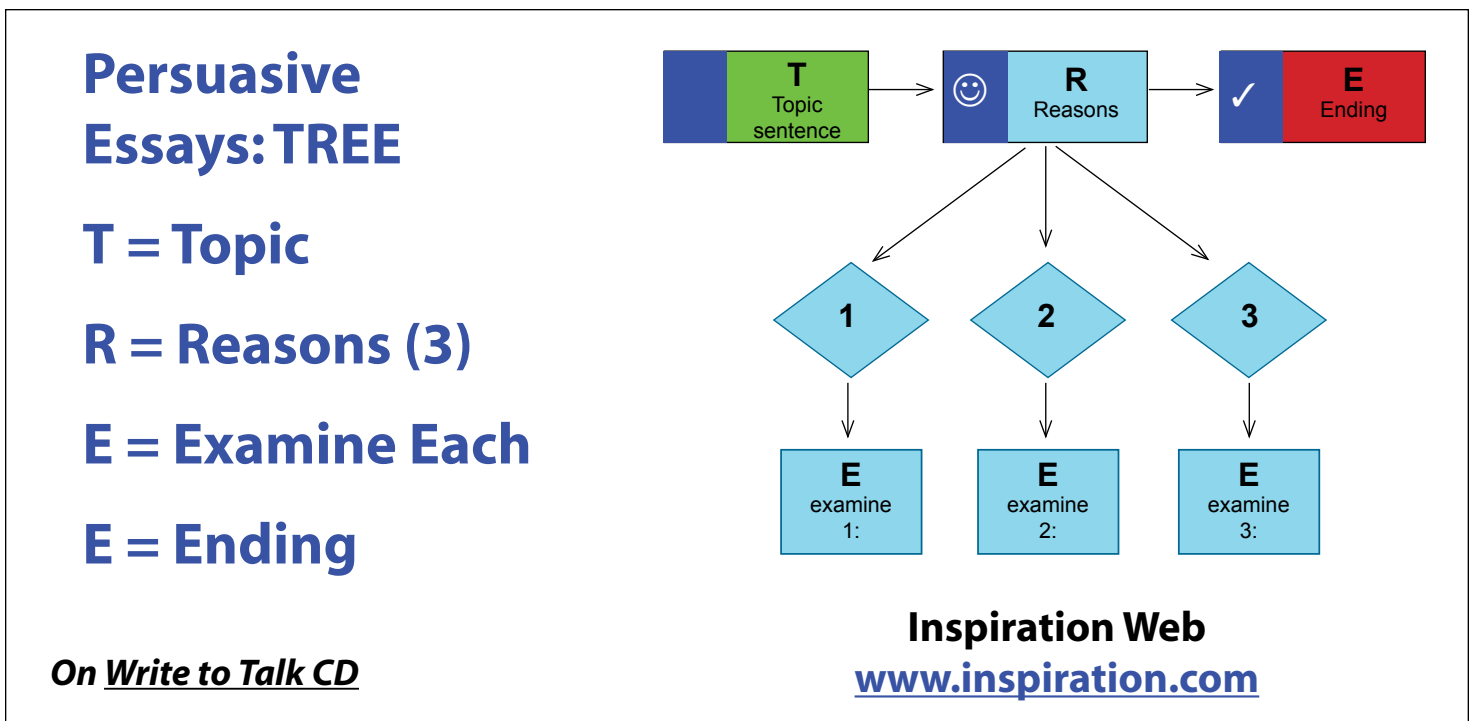
3. \_\_\_\_\_

**Ending:**

\_\_\_\_\_

Musselwhite. © 2010 [www.aacintervention.com](http://www.aacintervention.com)

Graphic 5 - The T.I.E. organizer.



Graphic 6 - Example of a high tech graphic organizer.

that any of the Microsoft Word forms can be turned into "fillable" forms. That means that students using communication devices, portable writers, IntelliKeys or standard computers can enter the information directly into the boxes.

**Solo:** Ms. Hanley's seventh- and eighth-grade students with learning disabilities were asked to write a report on a famous person. They used SOLO Read:Outloud to read a Scholastic on-line article about Martin Luther King Jr. and highlight important parts. These points were used to start an outline. For every point they highlighted, each student added his/her own notes, either typing or making a voice recording. Some of the students used the word prediction support from SOLO Co-Writer using the Topic Dictionary for MLK so they didn't have to write long words like "desegregation" and "demonstrate."

### SUMMARY: DOES IT WORK??

We have provided sample teaching strategies and technology to support the prewriting stage of the writing process. It is essential that students also have the time needed to learn and practice their writing, from prewriting to celebrating writing. We have seen remarkable results, as evidenced by pre and post writing samples. Graphics 8 and 9 show a pre/post writing sample, describing a classroom object each time. On the pretest, the student tried, but was only able to add one word. On post-test, he ran out of time! Graphics 10 and 11 show the results of a personal narrative, writing in each case about a good or bad day. In the pre sample, the student has a fairly readable list of what it takes to make a good day, while the post sample shows a clear narrative, beginning with the traditional "Once upon a time," and linking multiple ideas. Multiple strategies were taught to these students, including those described in this article. Time, teaching strategies and appropriate technology CAN make a difference!

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### PRODUCT INFORMATION

**AbleNet, Inc.**, 2625 Patton Road, Roseville, MN 55113-1308, (800) 322-0956, [www.ablenetinc.com](http://www.ablenetinc.com)

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**Renaissance Learning, Inc.**, PO Box 8036, Wisconsin Rapids, WI 54495-8036, (800) 338-4204, [www.renlearn.com](http://www.renlearn.com)

- NEO 2 – \$149
- DynaVox Mayer-Johnson**, 2100 Wharton Street, Suite 400, Pittsburgh, PA 15203, (800) 588-4548, [www.mayer-johnson.com](http://www.mayer-johnson.com)
- Print'n Communicate – \$29

**Adaptivation**, 2225 W. 50th Street, Suite 100, Sioux Falls, SD 57105, (800) 723-2783, [www.adaptivation.com](http://www.adaptivation.com)

- Randomizer – \$144
- Don Johnston Incorporated**, 26799 West Commerce Drive, Volo, IL 60073, (800) 999-4660, [www.donjohnston.com](http://www.donjohnston.com)

- SOLO Literacy Suite – \$773 (discounts for multiples)

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- Talking Photo Album – \$29
- Learning to Work – \$59

Graphic 7 - Example of a low tech graphic organizer.

Graphic 8 - Pre-writing sample.

Graphic 9 - Post-writing sample.

www.aacintervention.com

• Write to Talk CD: Conventional Writing – \$35 (order form on-line)

**The Center for Literacy and Disability Studies Department of Allied Health Sciences, University of North Carolina at Chapel Hill** CB# 7335, Bondurant Hall, Suite 1100, 321A S. Columbia St., Chapel Hill, NC 27599-7335, (919) 966-8566

• Writing With Alternative Pencils CD – \$35 (order form on-line) www.med.unc.edu/ahs/clds/available-for-purchase-1/available-for-purchase

• **Apps for iPhone/iPad:**

• ClickySticky by Invocore, \$1.99 from iTunes (iPad, iPhone)

• StoryBuddy by Tapfuse, \$4.99 from iTunes (iPad)

• PuppetPals by Polished Play, LLC, free download from iTunes (iPad, iPhone)

• Storyrobe by Story Robe LLC, \$.99 from iTunes (iPad, iPhone)

• TapSpeak Sequence by Ted Conley, \$29.99 from iTunes (iPad) ■

9/2/10

Ryan

I have a job

I play with my friends

I like to play a game

I like to play w/ll

I like to sleep

Graphic 10 - Pre-writing sample.

5/03/11

a badday for Ryan

Once upon a time there was a boy named Ryan / Ryan is a friend of mine / But there is this kid's bully / little kid's Ryan hate bullys / even though he's a bully he's / the kid named / Meis / a silly kid also / he came in and / I made Ryan mad the sad / Ok bully / next said Ryan / that / but Ryan said no / then Ryan turned / and brayan / because Ryan is /

Graphic 11 - Post-writing sample.

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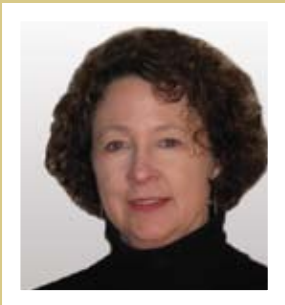
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Grocery lists, alarms, post-its, calendar entries ... these strategies serve as daily prompts for most people. A prompt is a valuable tool for organization and success, but how one determines the effectiveness and efficiency of a prompt relative to a particular need is an individual decision.

# Prompting: A Cautionary Tale



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**TERRY FOSS, M.Ed.,** is an AT Resource Specialist and Co-Author of Every Move Counts, EMC Communication Inc., Lee's Summit, MO.

**Currently it appears that the use of prompting in the special education setting is farraginous, a confused mixture, a hodgepodge. This article explores definitions of words relative to prompting, the literature, implications of prompting for communication and assistive technology (AT), and the evaluation of the effectiveness of the selected prompt. While prompting is widely practiced as an educational strategy, application needs to be carefully considered, based on research evidence and with attention to the individual, the task, the environment and independence.**

## DEFINITIONS

For this article, prompting is being discussed as it is applied in educational programs for students classified as "low incidence" or as having "intellectual disability" (ID). IDEA defines ID as "significantly sub-average general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance." [34 CFR §300.8(c)(6)] These are the individuals for whom prompting is most often routinely included in programs to develop communication skills and assistive technology (AT) applications. This article challenges the traditional use of prompting and explores the broader issues related to routine inclusion of prompting in implementation strategies for atypical learners in the areas of communication and AT.

Prompt, cue, prod, nag, direct and instruct are terms that describe what one might use to elicit a "target" response. "Prompts are antecedent stimuli that are effective in getting responses to occur. Put another way, a prompt is a stimulus that controls a particular response (i.e., it is a discriminative stimulus). The prompt is added to a situation in which the naturally occurring stimulus does not yet control the response." (MacDuff et al, 2001) This is also referred to as a "supplementary cue." (Sailor & Guess, 1983) In this article, prompting is defined as an antecedent event that occurs after the environment has been arranged according to implementation strategies and before the target response occurs.

In recognizing prompts as "antecedent events," it is important to know that Brinker (1981) discusses learning as the result of the "consequent event" rather than the "antecedent event." He further stresses the importance of "timeliness

consequence" in supporting learning. Through the Contingency Intervention Project (Brinker, 1982) it was demonstrated that when infants were given switches that they were physically able to activate, sufficient opportunity to use the switches, and reinforcing consequences, they were able to learn control of the environment in the absence of prompting. The results concluded that given the appropriate switch, a motivating consequence (consequent event) and sufficient practice (opportunities to experience co-occurrence), infants were able to control their environment through purposeful switch use.

A prompt is considered "effective" when the prompt, along with the instructional strategy, has been successful in eliciting the target behavior. The "efficiency" of a prompt refers to the total instructional time necessary to elicit the target behavior. A prompt must be faded in order to be considered effective and efficient. The ultimate hope for most learning is that it will generalize across settings, people and time. "Train and Hope" refers to the strategy where "several persons engage in teaching a single action in hopes that the effect will transfer..." (Sailor & Guess, 1983) The "Train and Hope" paradigm (Stokes & Baer, 1977) can occur when instructional or prompting strategies are not analyzed and are not supported by research.

## REVIEW OF LITERATURE

It is very difficult to meet the guidelines for "evidence-based" with respect to the research reviewed for this article. It is virtually impossible to have matched control groups when the individual needs of this population are so diverse, etiology so varied and the number of individuals in the target population so limited. Typically, single subject design for small groups makes extrapolation to a larger population unreliable. These concerns and others make it important to be knowledgeable about what is known and what is commonly practiced. Strategies regarding prompting are often based on professional preference rather than on knowledge of what the evidence actually suggests.

It is of interest to note that originally, prompting was used as a strategy for teaching new, gross motor, recreational/leisure skills to adults. Studies reviewed explored the impact of different prompting strategies to teach learning (Touchette, 1984), social interaction, word identification (Karsh, 1990), acquisition of signing (Thompson, 2004), behavior control (Camp et al 2009, Reeve et al, 2007), computer skills (Jerome, 2007), vocational skills (Bennett, 2009), chained food preparation behavior (Schuster, 1988), generalization

(Rincover, 1975, Reeve, 2007), recreational-leisure (Zhang, 2004) and play skills. (Bennett, 2009, Libby, 2008.) The subject designs varied as did the population included in the research. Studies included typical infants (Brinker, 1983, Thompson, 2004) as well as individuals with significant sensory motor differences, autism (Reeve, 2007, Schreibman, 1975, Rincover, 1975, Reeve et al, 2007, Libby, 2008), developmental differences (Jerome, 2007, Zhang, 2004, Schuster, 1988, Touchette, 1984, Biederman, 1998, Camp, 2009.), Down Syndrome (Brinker, 1981 & 1982) and birds (Terrace, 1963). Embedding prompting in instructional programs for individuals with significant sensory motor differences has expanded across skills and programs, however, it is not clear that prompting is always best practice.

In addition to the research focus above, any review of the literature regarding prompting would be incomplete without consideration of the impact of motor differences on the ability of some individuals to independently master a target skill. For some individuals, difficulty initiating, sustaining or terminating an action may impact the ability to be independent. If this is the situation, prompting may continue to be needed until and unless the underlying sensory and motor issues are resolved. For these individuals, prompts, cues, supports, accommodations, adjustments or adaptation of interactions, tasks, situations or environments that assist a person may be necessary. (Donnellan et al, 1995)

## EVALUATION OF THE EFFECTIVENESS OF THE SELECTED PROMPT

Ultimately the selected prompt strategy is only effective when the target behavior is performed independently, that is without any prompts. Indicators 5 and 6 from Quality Indicators for Evaluation of Effectiveness (QIAT) have particular relevance when considering the appropriateness of a prompting strategy. Indicator 5 states, "Data are collected to provide teams with a means for analyzing student achievement and identifying supports and barriers that influence assistive technology use to determine what changes, if any, are needed." Indicator 6 states "Changes are made in the student's assistive technology services and educational program when evaluation data indicate that such changes are needed to improve student achievement." When an individual is not mastering a target skill, the prompt may be one of the "barriers" that may need to be "changed." This detail in the implementation strategies can only be identified through careful evaluation.

If a goal is realistic (achievable), criterion is appropriate and yet the goal is

## PROMPTING FOR COMMUNICATION AND ASSISTIVE TECHNOLOGY

In reviewing the literature that addresses prompting, one discovers that different prompting types, strategies and/or hierarchies have been demonstrated effective in different situations. Nothing has been validated for all skills for all individuals and prompting works "with some (but not all) students." (Sailor and Guess, 1983) In other words, while "individualized educational programs" are team decisions, prompting strategies are often applied on a "one size fits all" basis. Research that relates specifically to prompting with respect to communication and/or AT is not as extensive as one might hope in light of the frequent use of prompting in teaching these skills. While prompting can be an effective tool, the wisdom of the indefinite, prolonged or sustained use of any particular prompting strategy is questionable. At some point, in some situations, a particular prompt may need to be acknowledged as an accommodation that is necessary to elicit a targeted response. Accommodations are arrangements, supports, changes made within the environment that are documented as necessary for atypical learners to access the general education curriculum. If a prompt is documented as necessary to elicit a target response, that prompt is no longer a prompt. It becomes an accommodation.

**Prompt strategies with respect to communication and AT need to consider the independence aspect of the goal. If the goal is to communicate and/or control one's environment independently, then one must understand:**

- **If one wants something, one must ask for it or activate the switch.**
- **If one does not ask or activate, one may not get what one wants.**
- **If one does not want something, one should not ask or activate the switch.**

Across the literature, the importance of fading prompts is universally recognized, although agreement as to which type of prompt is most easily faded is debatable. When prompting strategies are employed, the individual is taught to do SOMETHING when prompted, not wanting/not asking (declining) is not an option. In such situations, prompting may lead to prompt dependence (Kashman & Mora, 2005; Korsten, Foss & Berry, 2007), contrary control and/or consequence confusion. (Korsten, Foss & Berry, 2007).

Prompt dependency occurs when the individual does not complete the task independently with only the natural cues. Contrary control occurs when the individual learns that the only control available lies in refusing to do what is asked. The desire to control is more powerful than the desire to receive. Consequence confusion occurs when the individual complies to please, even when there is no interest in the consequence.

## DISCUSSION

The research regarding prompting does not provide absolute links indicating that a particular skill can be more efficiently and effectively taught to particular types of individuals using a particular prompting strategy. The concepts relative to prompting within the special education instructional strategies are so integrated it is difficult to separate them, and they do not stand alone in eliciting the target response. This discussion addresses the importance of these concepts in the big picture of communication and AT. It is a challenge to isolate prompting and its purpose while maintaining a mindful focus on each step of instructional strategies. Documentation of particularly effective prompts was difficult to locate due to the low incidence of this population and the wide variety of needs and abilities in the this population. Prompting is often the result of impatience and the learner is not provided with enough response time and sufficient opportunities to practice and learn.

In the literature, definitions of prompting were far ranging since prompts were referred to as cues, nags, hints, prods, instructions and stimuli that may be supplemental, artificial or natural. Prompts can create confusion, contrariness, dependency, avoidance, anger, as well as, closure, compliance, clarity and organization. Prompts can be delivered verbally, auditorally, gesturally, physically, visually, textually and tactually. In some situations, prompting may derail the opportunity to learn appropriate declining, that if one does not want something, one should not ask for it. If the absence of the desired response leads to prompting, then the opportunity to learn appropriate declining may be lost. Individuals with movement differences or dyspraxia may have an inability to plan, sequence and execute the actions. (Shoener et al, 2008) This individual may require a physical touch to enable execution of the desired motor task. (Donnellan, et al, 1995) In such situations, a carefully thought out prompting strategy may be necessary to compensate for the motor difference. When it appears that an individual relies on the prompt (due to praxis or any other barrier) consideration should be given to identifying the prompting required and documenting it as an accommodation.

**Prompts are antecedents that are presented to an individual identified as having intellectual disabilities (ID) who does not respond correctly or independently to natural cues or general education instructions. Learning is the result of the "consequent event" rather than an "antecedent event." A prompt or cue may elicit a target response, but actual learning occurs when it is followed by an effective consequence. Prompts are effective and efficient if, when the prompt is faded, the target response follows the natural cues spontaneously and independently.**

not mastered, several factors may warrant consideration. These considerations may include the evaluation of the effectiveness of components of the goal, student ability and interest, environmental arrangements/ supports and implementation strategies. Does the technology match the abilities of the user? Does the consequent event match the individual's interests? Does the goal address independence? Does the student have sufficient opportunities to practice or experience success? Does the implementation strategy take into account these critical elements (interests, abilities and independence)? "Data must guide decisions regarding teaching strategies! The purpose of designing and collecting data is to document progress and identify when and how strategies need to be changed." (Korsten, Foss & Berry 2007)

## CONCLUSION

In conclusion, key concerns regarding prompting are the necessity, the selection, the implementation, the evaluation and the fading of the prompt and, ultimately, the independent target response to natural cues. It is universally accepted that prompts are to be faded, but often, fading is very slow to take place and independence is compromised. Continuous, on-going evaluation of implementation strategies, prompting strategies, student interests and abilities is essential in documenting progress or barriers to progress and the need for a change in strategies. Ongoing analysis of effectiveness diminishes the "one size (prompt) fits all" approach and identifies prompting that is contraindicated, is effective or is actually an accommodation.

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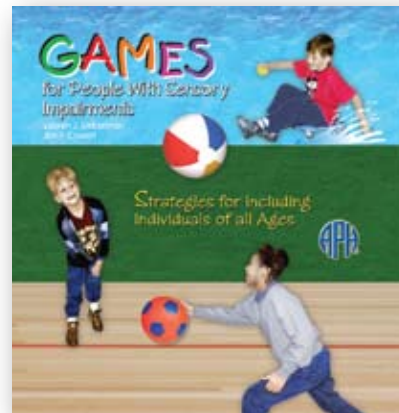
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# PART ONE OF A TWO PART SERIES ORGANIZATION

## Tools and Strategies for Developing Organization Skills

# TOOLBOX

## PRINCIPLES AND STRATEGIES BASED ON THE ENVIRONMENT

Ethan is a bright sixth-grader who understands the concepts taught in class and does fairly well on his tests, although by looking at his grades, you may not know this. His teachers' complaint is that Ethan never knows where his homework is. During a usual day for Ethan, he wakes up in a dizzying flurry, trying to make it to school on time. After arriving at school, Ethan visits his locker and tries to identify what books, notebooks or folders he needs to bring to class. Some mornings, all the mounds of paper look like a fuzzy blur to him. He does his best at grabbing what he thinks he might need.

When Ethan arrives in the classroom, he hears so much commotion from other students shuffling papers and chatting that he becomes distracted and overwhelmed. Somewhere in the mix he hears the teacher mention the assignment, but as he shuffles for his agenda (that he left at home), he gets distracted by his classmates' whispered conversations. He soon forgets that he needs to write down the assignment. At the end of class, there is such hurry and noise to leave. Ethan looks at his disorderly stack of books and papers and shoves the worksheet into the middle of the textbook.

By the end of the day, Ethan is exhausted from trying to pay attention during classes. He looks into his locker one last time to find what he might need to bring home. He chooses a few of the folders that he thinks must have his homework in them, since they look a little familiar from today. At home, Ethan sifts through his backpack looking for some homework to do. He can find one worksheet, but he's missing the one from his first class – it is back at school in the textbook left behind in his locker. He works on the worksheet he does have. He has almost finished when his younger brother distracts him. The next day, as Ethan again rushes to make it to school on time; he forgets his almost-finished worksheet sitting on his desk at home.



**TARA BRUSS** is an Assistive Technology Specialist with the PACER Simon Technology Center (STC) and is coordinator of the STC Lending Library. She has a degree in psychology and a background working with individuals with disabilities in their daily life settings. Tara provides a variety of services and assistance to individuals, parents, and professionals to increase awareness and capacity for assistive technology including the lending library, consultations, trainings, in-services, workshops, and webinars. She can be reached at [tara.bruss@pacer.org](mailto:tara.bruss@pacer.org)

As you can imagine, organization is an integral skill in every person's life. There are also other skills and abilities that are closely connected to organization, such as memory and the ability to maintain focus. These skills are crucial to a person's ability to be effective and efficient in daily living. They also help an individual accomplish their long-term goals. The goal is not necessarily to be neat and clean, but to develop a system that is effective.

Organization is a skill that can be difficult to teach and difficult to learn. These skills require varying time to manage and master, differing for each person. We may notice that some people with particular disabilities generally have a difficult time with organization skills. For example, an individual with attention deficit disorder or attention deficit hyperactivity disorder (ADD/ADHD) may have a difficult time focusing their attention and may benefit from a reminder or an interval alarm system. Someone who has traumatic brain injury (TBI) may need an electronic agenda or planner with alarms and notifications. When developing an organization strategy or system of tools, the most important factors to consider are the individual's needs, strengths, environments, goals and preferences. In

this context, a "strategy" involves only one tool in obtaining a specific goal, while a "system" usually involves several tools and strategies.

As with most skills, the learning process begins with the individual acquiring awareness of their needs, strengths and goals. It is important that the individual is involved in the organization strategy development process to give them increased interest, ownership and understanding. The individual can help define the organization goal, the environment in which the strategy will take place, the time at which the strategy will take place, which tools to use and how tools will be used to help implement the strategy.

Starting small with simple, non-complicated strategies is the first step. It is important to establish patterns and routines for a given organization strategy and to practice it consistently. Consistency is the key to developing a routine. Continually monitoring progress of the strategy is important to determine if it is helping the individual achieve their organization goals. In addition, it can be helpful to motivate the individual to practice the organization strategy by using rewards that interest them.

As an individual begins to practice an organization strategy, they may need reminders. At first it may be acceptable for reminders to come from a person, but only for a short time. If the individual needs recurring reminders, they will want to use a tool, or memory aid, to gain independence and ownership over their skills. This adds a layer of complexity to the organization strategy; we may now change the name "strategy" to "system."

A system implements more than one tool and strategy, combining multiple tools and strategies to accomplish a single organization goal. As the practice of this skill continues, the next step is to gain independence in remembering, or using memory aids, and initiating the strategy. As an individual continues to practice a particular organization strategy, it will begin to develop into a habit, resulting in a reduced cognitive load of planning, remembering and processing the specific strategy within the context of daily living. In the end, we want the individual to exercise generative processing so that they have more independence in their own organization strategy development process and have the ability to create new strategies on their own.

For any individual working on organization skills, it is important to schedule an appointed time within each day to work on their organization strategies. For example, an individual may want to schedule a 15-minute appointment with him/herself in the morning to review their calendar and the schedule of their day. During this time, the individual may also note any changes that need to be made or revisions to the schedule of their day. Creating templates specific to an individual's needs may also be a helpful tool for the individual to address the appropriate questions regarding their organization activity. Some examples include: checklists of all materials needed for an activity; task lists for transition time, such as what to do when first entering a classroom; and checklists for recurring tasks.

## TO HELP DEFINE DIFFERENT PARTS OF A PERSON'S LIFE THAT ARE AFFECTED BY ORGANIZATION SKILLS, A SET OF CATEGORIES ARE IDENTIFIED HERE TO GIVE CONTEXTUAL DESCRIPTION TO THE PRACTICAL USE AND ENVIRONMENT OF THE ORGANIZATION SKILL, TOOL AND STRATEGY.

**ENVIRONMENTAL/SPATIAL:** the positioning of physical surroundings; the location and placement of objects.

**TASK PLANNING/EXECUTING:** planning and executing steps to accomplish clearly defined goals (examples: doing laundry, cleaning the bedroom, completing homework).

**EVENTS PLANNING/ EXECUTING:** planning and executing an event held on a set date and time involving coordination of people, places and things.

**TIME MANAGEMENT:** planning and executing a schedule and maintaining timeliness.

**INFORMATION:** storing and saving information gathered (such as data, written formats or audio formats) in locations easily retrievable.

**WRITING COMPOSITION:** arranging thoughts and gathered research into sequential, coherent written work.

As you think about the implementations of these different categories, you may notice that these categories can affect one another. Effective organization of one category may also require effective organization of an additional category. For example, if you were coordinating an event, you would also need to be mindful of time management. You may also detect that there are many tools that can be cross-categorized, meaning a tool may be appropriate for more than one category. Figure 1 illustrates how tools can be placed into multiple categories. See Figure 1.



**Figure 1**

Traditional Tools/Mainstream Tools for Organization							
	Environmental/ Spatial	Tasks Planning/ Executing	Events Planning/ Executing	Time Man- agement	Information	Writing Com- position	Product information
Alarms				x			Varies
Bins, Tubs, Trays, etc.	x	x					Varies
Cell Phone/Smartphone		x	x	x	x	x	Varies
Clock/Watch				x			Varies
Color Coding	x				x		Varies
Folders, Binders, File Folders	x				x		Varies
Google Calendar		x	x	x			Google; free
iPod Touch/iPad Calendar		x	x	x			Apple; \$229-\$399
Labeling	x	x			x		Varies
Microsoft Outlook Cal- endar		x	x	x			Microsoft; \$140
Paper Planner		x	x	x			Varies
Paper To-Do List		x	x				Varies
Personal Digital Assistant (PDA)		x	x	x			Varies
Timers				x			Varies
Stopwatch				x			Varies
Non-Traditional Tools for Organization							
Audio Notetaker					x		Sonocent; \$150
Community Integration Suite		x	x	x			AbleLink Technologies; \$1,099
Cue Classroom Scheduler				x			Onion Mountain Technologies; \$45
Day Planner		x	x	x			Attainment Company; \$9
Evernote					x		Evernote; free
Graphic Organizer Work- sheets						x	Varies
Invisible Clock				x			Attainment Company; \$49
Mind Mapping Programs:							
Inspiration, Draftbuilder, Bubbl.us						x	Inspiration software; \$69. Don Johnston; \$159. LKCollab; free.
Notetakers :							
Dana, Fusion		x		x		x	Renaissance learning; \$350. Writer Learning Systems; \$149-\$369.
Onenote					x		Microsoft; \$80
Picture Planner		x	x	x			Cognitopia Software; \$199
Plan Your Day Curriculum		x	x	x			Attainment Company; \$89
Pocket Endeavor		x	x	x			AbleLink technologies; \$1,299
Pocket Timer				x			Attainment Company; \$5
Remember the Milk		x	x	x			RTM; varies
Smartpen		x	x		x	x	LiveScribe, Inc.; \$100-\$300
StepPAD		x					Attainment Company; \$29
Talking Photo Album		x					Attainment Company; \$29
Time Timer				x			Time Timer; \$5-\$50
TimeCue		x		x			Attainment Company; \$16
Video Modeling		x					YouTube, HowCast.com; free
Visual Supports:							
Boardmaker, Overboard, etc.		x					Mayer Johnson; \$329-\$749. Gus Communica- tions; \$169-199
Voice Recognition:							
Dragon Naturally Speak- ing, Dragon Dictate						x	Nuance; \$99-\$799
Voice Recorders		x	x		x	x	Varies
VoiceCue		x		x			Attainment Company; \$39
WatchMinder		x		x			WatchMinder; \$69-\$79

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Central Daylight Time

**MARK COPPIN**, B.S., is  
an Apple Distinguished Educator  
and the Director of Assistive  
Technology, Anne Carlsen  
Center for Children,  
Jamestown,  
ND.



## ENVIRONMENTAL/SPATIAL

There are many tools that can give spatial definition and boundaries to various items used in the environment. Many of these are traditional and common items that we may encounter on a daily basis, such as: plastic tubs, bins, bags, pouches, drawers, shelves, boxes, file cabinets, portable file storage boxes, folders, three-ring binders, zippered binders, binder insertables and a variety of desktop organizers. You may also think of other items to add to this list. There are a few folders and binders that deserve specific mentioning due to their unique nature. The Avery® Flip Back® 360° Binder, which can be purchased on [avery.com](http://avery.com) for \$7.95, allows the individual to comfortably flip back the binder to lay flat while taking notes or writing homework, eliminating uncomfortable positioning. Another unique binder is the Mead® Five Star Flex NoteBinder, which can be purchased for \$14.49 on [meadonline.com](http://meadonline.com). This binder is very lightweight, and you can choose the amount of paper you would like to store in the notebook. This binder has rubber rings that are flexible and bendable, allowing the binder to take up less space than a traditional three-ring binder. There are also a variety of other unique folders on the market: two-pocket insertable plastic dividers, one-pocket insertable envelopes with Velcro closure, and plastic envelope pockets with Velcro closure. Plastic folders and envelopes render durability, and Velcro closures incorporate ease-of-use, which is an important factor for some individuals.

**One question commonly asked among parents and professionals is how a student's environment can be set up so they are more likely to keep track of their homework and turn it in. A big factor to consider is the accessibility of the organization tools that the student is using. Below are a few different strategies:**

- Two folders: the first folder contains all completed homework for every class subject, the second folder contains all assigned homework for every class subject
- One dedicated folder and notebook for each subject
- Two-pocket folder: the first pocket contains assigned and completed homework, the second pocket contains old notes and graded homework
- Color code by subject: folders, notebooks, book covers and class schedule
- One large three-ring binder: tabbed dividers/folders, zippable case
- One accordion folder: labeled and color-coded dividers

- One working notebook/folder/binder, a reserve accordion file for completed units, and a reference notebook

Some students may say it is too tedious to organize all of their homework into separate folders. For some of these students, a good technique is to use the two-folder approach. When using this approach, homework from different subjects will be mixed together, but the goal for this strategy is to have all completed homework in the same place. That way, when the student is in class and the teacher asks for their homework, the student will know exactly what folder to find. It can also be helpful for many students to keep only current homework and notes and to archive notes and homework from previously completed units. This will assist in uncluttering their space and reducing the cognitive effort of processing unnecessary pieces of information.

A person's environment can be used in creative ways to provide tangible memory aids. Real objects that serve as cues can be placed in an obtrusive yet appropriate location to act as reminders. For example, if Ethan consistently will eat breakfast, but not remember his homework, a structured appointment can be scheduled the night before, when Ethan will pack his backpack with all appropriate homework and place his backpack on the chair he sits in for breakfast. Individuals can be as creative as needed with the representation and placement of real objects.

Having a defined, distraction free, study space can be helpful for many students. It is important to have all required supplies located within the study space in places that can be found easily. Strategic placement of items and labeling items can also be helpful in keeping the environment and space uncluttered. For example, putting frequently used items closer to reach and rarely used items further out of reach on a shelf follows the law of convenience. Labeling can serve as a reminder for where items belong. Another way to identify where items belong is to take a picture of the space in its organized state and then post the picture in that space. When the space matches the picture, then everything is where it belongs.

## PART TWO

Part Two of the "Organization Toolbox Series" will continue discussing tools and strategies for the remaining five categories: task planning and executing, events planning and executing, time management, information and writing composition. ■

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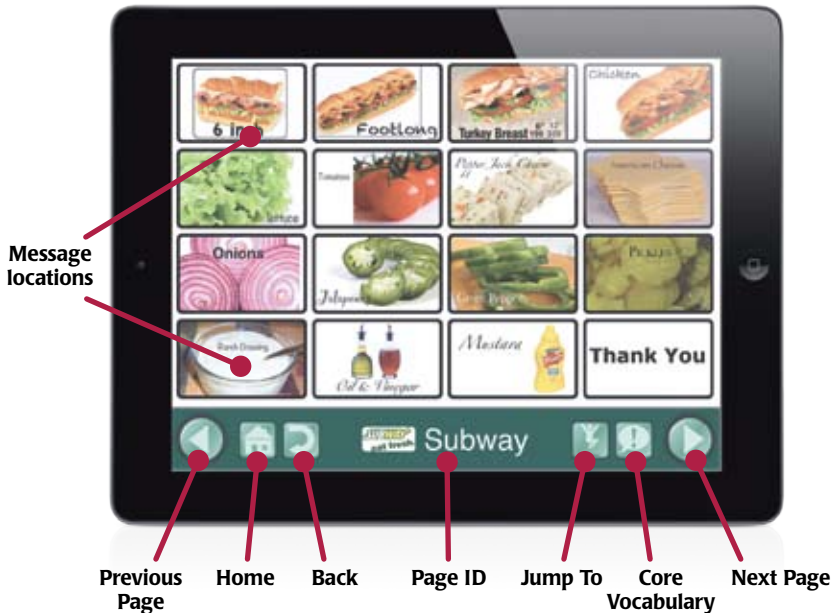
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