

Technology & Communication:

Choosing the right tools and using them wisely

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Augmentative Communication Program
Martha's Vineyard, May 18, 2013



Augmentative Communication Program, Boston Children's

- Augmentative Communication Program & Autism Language Program
- Evaluations and limited therapy services
- Team of 6 speech pathologist, 2 occupational therapists



"Technology is so much fun but we can drown in our technology. The fog of information can drive out knowledge."

--Daniel J. Boorstin



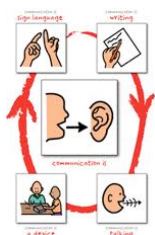
The headlines...



- “iPad **Opens World** to a Disabled Boy” (New York Times, October 2010)
- “iPad **Changing Lives** for Dallas Special Needs Students” (CBS Local News Online, February 2012)
- “iPad, An **Unexpected Miracle**” (www.bellaonline.com)

So what do we make of this?

- Increased awareness
- “Democratization”
- Make sure that there is a thoughtful, planned purpose for the technology



Augmentative Communication

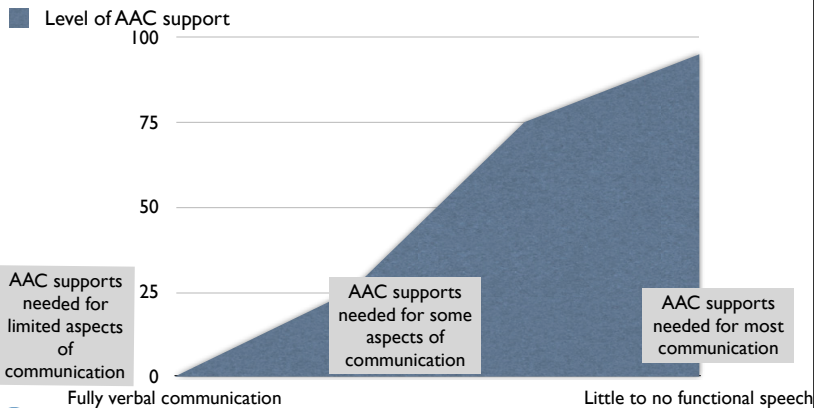


Augmentative Communication

A wide range of tools and/or strategies used to supplement natural communication methods.



Range of support



Consider...

- Does the technology offer advantages over other strategies?
- What skill will the child gain through the use of this technology?
- Are there any drawbacks to the technology? Do they outweigh the benefits?

What does technology offer?

- Portable
- Can offer audible role in communication
- Motivating
- Can be easy to update, access information, create materials
- Increasingly accessible



Technology- CONs

- Expensive
- Breakable
- Some children have difficulty using tools for communication, and not play
- Only as good as the team/person developing a plan and implementing the tool



“Cadillac” communication systems

- **Versatile**, meets needs a variety of settings
- Provide language **growth** potential
- **Flexible**
- **Motivating**
- **Accessible**



“Jalopy” communication systems

- Teaching vocabulary that is only useful in limited contexts
- No pre-determined plan for growth
- Vocabulary that is not always available
- High-demand for learning with little opportunity for use



Dispelling myths...

- Children will always choose the most efficient, most effective means of communication in every situation.
- Multiple studies have shown that augmentative communication strategies can *improve* a child's speech.

Dispelling myths...

- The use of AAC should not be dependent on the failure of speech to develop
- Rather, it should be implemented very early on to prevent failure in communication and language development.

Dispelling myths...

- AAC may actually facilitate development of cognitive skills-- means-end, object permanence
- AAC offers a broad range of options for a wide variety of skill sets

“Low-tech” Options

Voice Output Communication Aides

- Purpose:
 - Gain attention, actively participate in family and school activities, social interactions
- Rationale:
 - Reduce language demands to make communication efficient and effective

Examples:



- Talk Points
- Big Mack
- Talk Block
- Step-by-Step



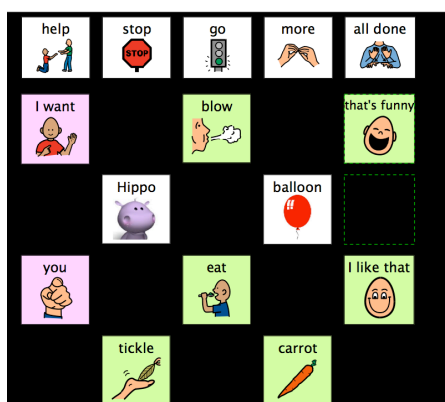
Setting up communication opportunities in the environment



“Mid-tech” Options

“Mid”-tech Communication Devices

- Devices that offer multiple buttons with voice output



“High-tech” Options

“High-tech” Options



Dedicated Device

- Speech-generating communication device, sole purpose is for communication, given code by medical insurance.
- Examples: DynaVox, PRC, Tobii, Salthillo

Non-Dedicated Device



Dedicated vs. Non-Dedicated Device

Dedicated (e.g., DynaVox)	Non-dedicated (e.g., iPad)
- Requires assessment and recommendation by SLP - Support & training available	- Available for purchase on the mass market - Generally easy to obtain
- Only communication software is available, device serves a single purpose	- “Mainstream tool” - Can serve multiple functions
- May be possible to have repairs covered by insurance	- Repairs or replacement are out-of-pocket expense
- Can be a high co-pay with medical insurance	- Typically an out-of-pocket expense

Current technology



Android Systems

- * “Open system”
- * Many hardware manufacturers
- * E.G., Google Nexus, Samsung Galaxy, Asus Transformer Pad
- * Ranging in price from \$200.00- \$500.00
- * Apps purchased from Google Play store



iPad (iOS) vs. Android

- * Price
- * Google Play versus iTunes store (availability of communication applications)
- * Accessories
- * Hype



General iPad Features

Getting started with iTunes

- Setting up an account
- Backing up the device
- Purchasing applications
- Updating applications

Options

- Memory: 16GB, 32GB, 64GB
- Internet: WiFi or WiFi + cellular
- Hardware: iPad 2, iPad (4th generation), iPad mini, iPod/iPhoneTouch



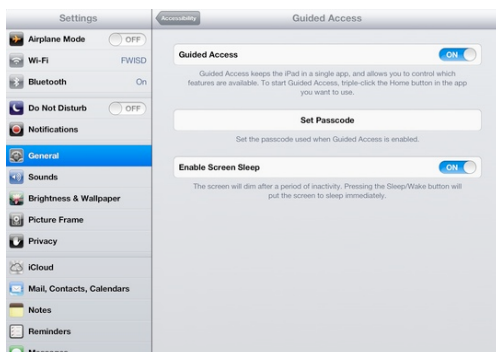
Rearranging Apps & Creating Folders

- * Hold down on an app until it “wiggles,” slide into new position
- * Slide one app on top of another to create a folder



Guided Access

- * New feature of iOS 6 (iPad 2 or higher), lock a user into an app
- * Under Settings -> General -> Accessibility



Restrictions

- * Prevent unintended deletion or purchase of apps, prevent access to some iPad functions (e.g., Safari, camera, iTunes)



Gestures

- * Gestures are the ability to use 2 or more fingers for varied purposes, e.g., swipe between apps, access the home screen
- * These often result in unintentional actions, turn off under "General" settings



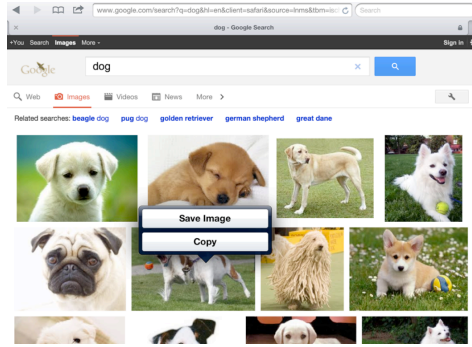
Screen Shot

- * Hold down the power and home buttons at the same time, to take a picture of what is on your iPad screen



Saving Internet Images

- * Google image search
- * Touch and hold on the image, select “Save Image”
- * Photos will be saved to your Photo Library



How do I choose an app?

- What are you trying to target?
- Consider vision, motor, and cognitive skills
- One size does NOT fit all!

Features to consider in looking for an app...

- Degree of customizability
- Speech output (computer-generated, recorded?)
- Availability of pictures or symbols
- Ease of use, programming
- Access options (alternate access, hold delay?)



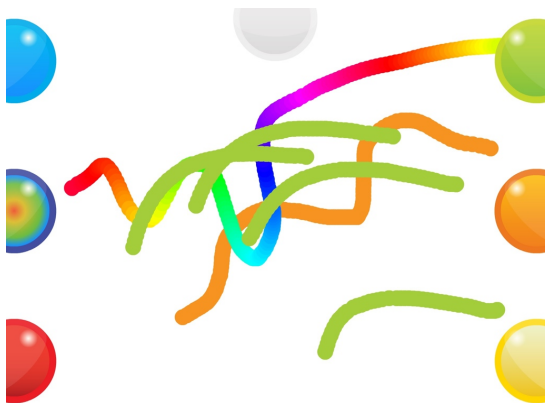
Active Stimulation

- The ability to enact a causal relationship with an object or person in the environment
- Foundational skill for communication
- iPad as a platform

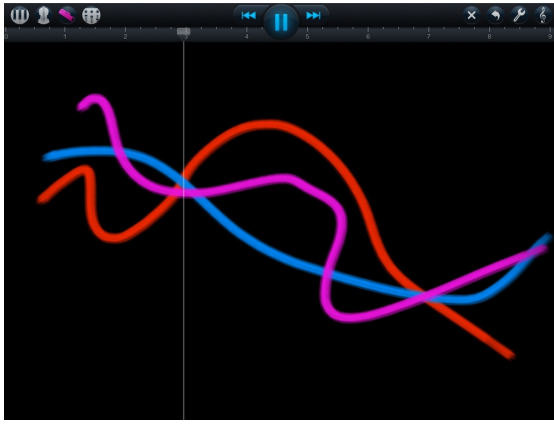
Criteria

- Multi-sensory
- Accommodates motor imprecision
- Matches the child's unique motivations

Sampling of my favorites...

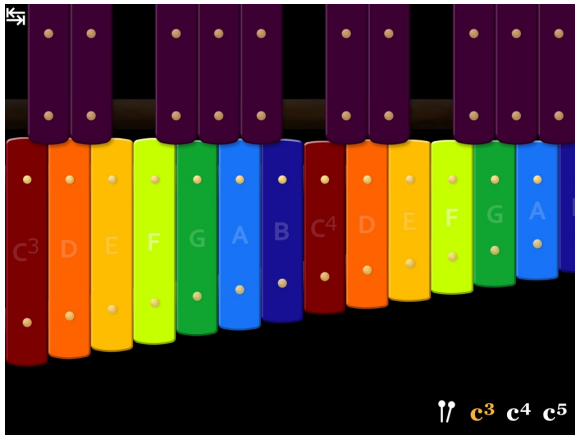


Sampling of my favorites...



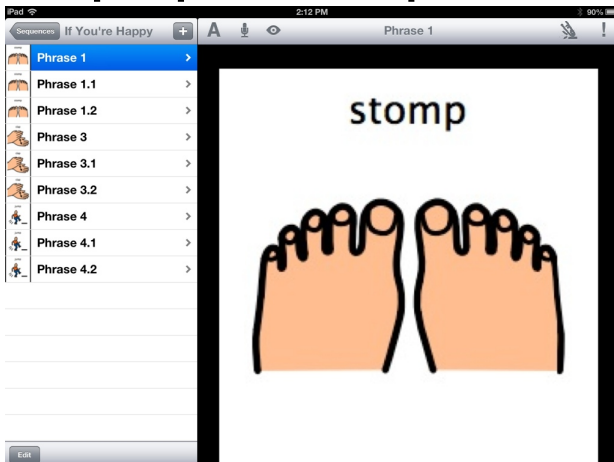
SoundBrush
Leaf Notes (free)

Sampling of my favorites...

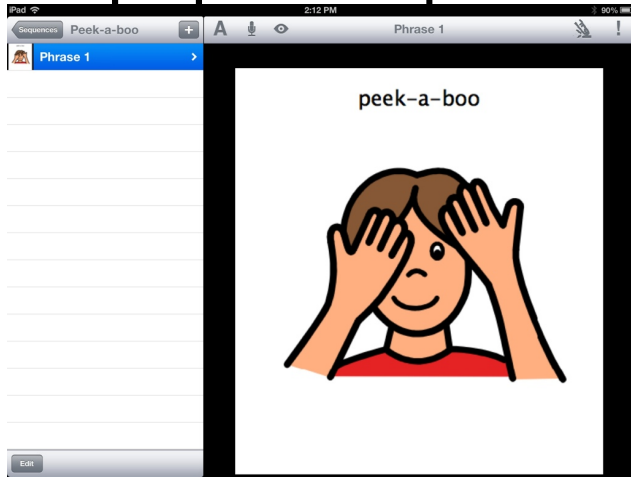


aXylophone
Daniel Toranzo Perez (free)

Tap Speak Sequence



Tap Speak Sequence



Apps for emerging communication



Board Builder

(Zapient) \$4.99

Pros	Cons
<ul style="list-style-type: none"> - Great beginning AAC app - Buttons enlarge when selected - Create single boards of 2-12 buttons/page 	<ul style="list-style-type: none"> - Limited features (recorded speech, pages do not link, small symbol library)





Answers Yes/No HD

Free version
\$3.99 for full version

Pros	Cons
<ul style="list-style-type: none"> - Good "starter" application - 2 buttons/page, can save 40+ boards 	<ul style="list-style-type: none"> - Limited room for growth



Apps for developing communicator



TouchChat HD

(Silver Kite) \$149.99

Pros	Cons
<ul style="list-style-type: none"> - Many nice pre-loaded layouts - Training and limited tech support available (Saltillo) - iShare service - Similar software to dedicated device (NOVAs) - Hold delay 	<ul style="list-style-type: none"> - Can be time consuming to program





Proloquo2Go

(AssistiveWare) \$189.99

Pros	Cons
<ul style="list-style-type: none"> - Ease of programming - A couple of nice pre-loaded layouts - Symbol Stix library - Hold delay - Many features 	<ul style="list-style-type: none"> - No cloud-based backup/sharing - Unable to program visual scene displays - May require extensive programming to set up



Go Talk Now

(Attainment Company) \$79.99

Pros	Cons
<ul style="list-style-type: none"> - Ability to change number of buttons/page without reprogramming - Ability to record speech - Built in Internet image search - Back up using Dropbox - Free version to trial 	<ul style="list-style-type: none"> - "Limited features": small symbol library, add on purchase for pre-made communication pages - No hold delay option - Limited to 36 buttons/page



Alexicom

(Alexicom Tech LLC) Free (with in-app purchase)

Pros	Cons
<ul style="list-style-type: none"> - Available on both iOS and Android - Can create speaking and linking pages - Scannable - Option to purchase pre-made page sets 	<ul style="list-style-type: none"> - Some features cannot be modified - Programming is less user-friendly



We've selected an app...



- The organization, design, and plan for implementing an app-based communication system is one of the main determiners of successful use.

Setting up your communication app

Selecting vocabulary

- Motivating
- Versatile
- Opportunity for growth!
- Personalized/motivating



The AAC dilemma...

- “How can I possibly include **all** the words he’ll need?”
- “How do I know what vocabulary to teach?”
- “We never seem to have the **right words** available.”

Core Vocabulary

- 80-85% of what we say is communicated with only 200 basic words.
- We call this set of words core vocabulary. They are consistent across topic, place, and cognitive ability.
- Examples: *you, that, go, here, what, look, my, eat, put, up, down, take, in, out, help, some, more, want, yes, no, help, finished, again, different, these, away*

Core Vocabulary

- Core vocabulary used in multiple contexts (across the day and in different environments) and in flexible ways (words can be combined and re-combined to have different meaning).

Core Vocabulary

“What is the priority in an AAC vocabulary? A small set of consistent and highly predictable core words that occur frequently, and compose 80% of our messages? Or a very large, unpredictable and inconsistent set of fringe words that compose only 20% of our messages? Core words provide the basic architecture of our messages, and fringe words provide the customized detail.”

From <http://www.aaclanguage.com/other/core-vocabulary>

Core Vocabulary



Selecting & organizing vocabulary

- Organize vocabulary into categories that make sense to the individual
- Avoid placing vocabulary into 'context-specific' folders, reduce redundancy
- Ex: Placing a 'food' folder within a school folder

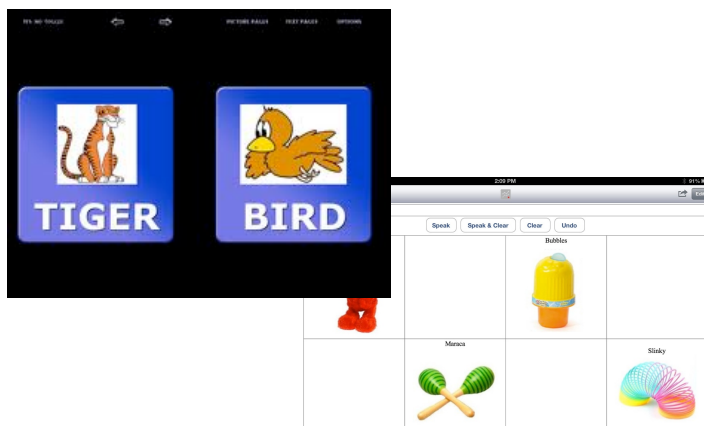
Color-coding vocabulary










- Improves ability to identify and locate symbols
- Helps with sentence building and understanding of different parts of speech

Other features...

- Number of buttons per page
- Button spacing
- Hold delay
- Restrictions







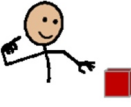







Limited number of buttons















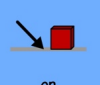




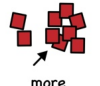


 <p>sing</p>	 <p>Old MacDonald</p>	 <p>Twinkle Twinkle</p>
 <p>Wheels on the Bus</p>	 <p>Itsy Bitsy</p>	 <p>quiet</p>
 <p>Row Your Boat</p>	 <p>baa baa black sheep</p>	 <p>loud</p>

MUSIC Songs

Vocab Menu

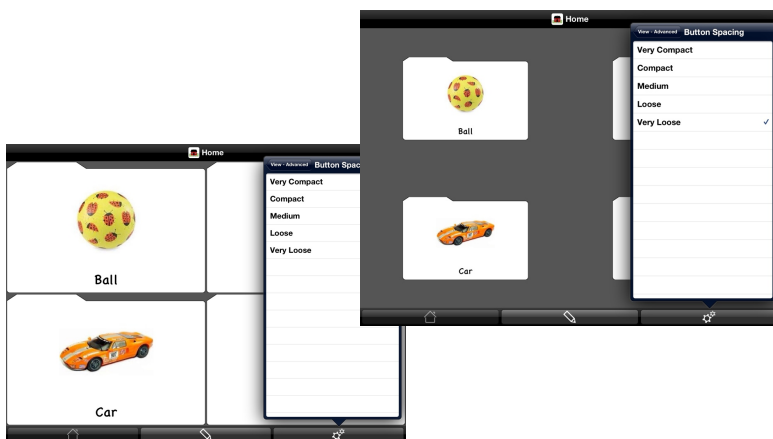
<p>Questions</p> 	<p>People</p> 	<p>Actions</p> 	<p>Describe</p> 	<p>Things</p> 
<p>chat</p> 	<p>I want</p> 	<p>I don't want</p> 	<p>I need</p> 	<p>Clear</p> 
<p>Keyboard</p> 	<p>Core Words</p> <p>And It The WORDS Up</p>	<p>School</p> 	<p>My News</p> 	<p>My Scenes</p> 

Home

 <p>I</p>	 <p>want</p>	 <p>turn</p>	 <p>Food</p>	 <p>Fun</p>
 <p>you</p>	 <p>like</p>	 <p>off</p>	 <p>School</p>	 <p>Things</p>
 <p>People</p>	 <p>go</p>	 <p>on</p>	 <p>Places</p>	 <p>Describe</p>
 <p>Help</p>	 <p>stop</p>	 <p>more</p>	 <p>Actions</p>	 <p>Chat</p>

I	am	eat	look	Food	Categories	Describe
You	are	drink	feel	Drink	Feelings	Questions
He	can	go	help	Places	People	social
She	have	want	need	School things	Home things	keyboard
play	is	like	watch	-ing	s	delete word
do	not	work	stop	will	More actions	clear
Yes	No	Finished	More	-ed	My turn	Your turn

Button spacing



Supporting use

Remember...

- Teach, don't test
- The device is the child's voice, not an interactive worksheet
- Model, model, model



Facilitating social communication



Let me tell you a story...

- Personal narratives can be one of the most challenging aspects of communication for children with speech and language difficulties
- “Talking Photo Album” apps

Let me tell you a story...

Story Creator (Innovative Mobile Apps, free)

- * User-friendly talking photo album
- * Can add image or video, can take photo or video from within app
- * Includes drawing and erasing functions



Let me tell you a story...

Pictello (AssistiveWare, \$18.99)

- * Talking photo album: Image, text, and recorded or synthesized speech on each page
- * User-friendly, easy to program with “wizard”
- * Multi-purpose: Sharing personal stories, visual schedules, social stories, partner-assisted scanning

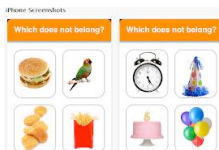


Language & Literacy



Receptive Language

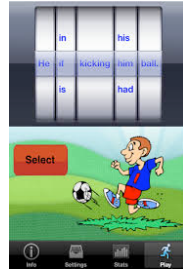
- Kindergarten.com apps: ABA-Receptive Identification, Object Function, Which Go Together, Flash Cards
- Various “Milo” apps: Sequencing, Verbs, Adjectives, Prepositions
- Magical Concepts



Syntax



- First Phrases
- Sentence Builder
- Rainbow Sentences
- Sentence Key

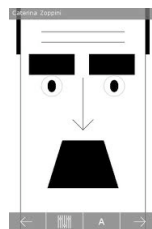
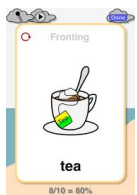


Wh- Questions

- Who's Hiding
- WhQuestions (Smarty Ears)
- Who Am I?
- Bag Game



Artic/Voice



- MouthWorks
- PhonoPix
- ArtixPix
- Bla Bla Bla
- Minimal Pairs Academy

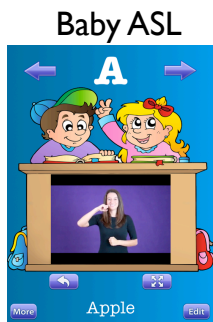


Early Literacy

- Starfall
- Interactive Alphabet
- Word Wagon
- True Learning



Sign Language



iPad as a
cooperative tool

“For children to get the most out of electronic media, the best approach is for parents to watch (engage in use of) the program **with the child**, and to use it as an opportunity for discussion and interaction”

-Gosnell Caron, Early Intervention & Mobile Technology, 10/23/2012

Interactive Play

- Use applications cooperatively, have child direct YOU in play (you control all iPad interactions)
- Great for use with topic displays
- Set expectations from the beginning

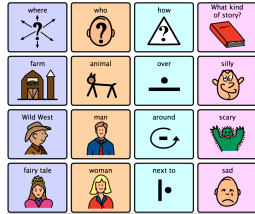
This not that



Interactive Play

Pair with topic-specific displays:

- Balloon animals
- Pogg
- Puppet Pals



Interactive Play

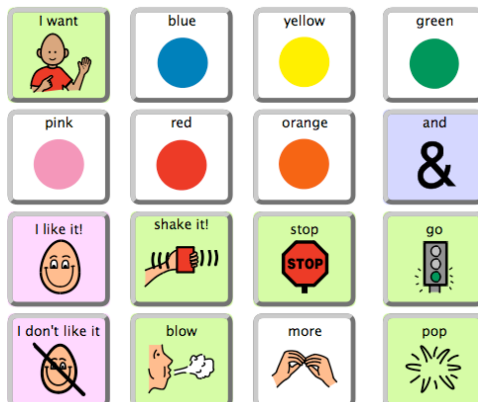
Pair with topic-specific displays:



“Pogg”

Interactive Play

Pair with topic-specific displays:



Balloon Animals

Interactive Play, cont.

Cloudy Shake



Crazy Hair, Picturizer



Interactive Play, cont.

Swapsies



Toca Train



Creative therapy tools

Image Spinner



Make Dice



Toontastic

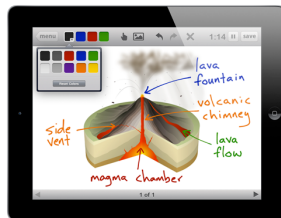


General Purpose/ Academic



Educreations (free)

- Recordable white board application
- Import PDFs and “write” on them, good alternative access strategy for children with motor impairment
- Create portable lesson recordings for children and/or parents/staff



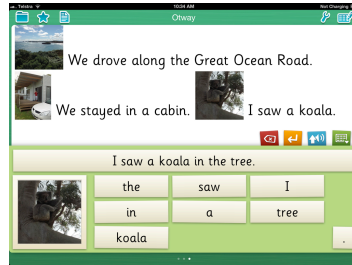
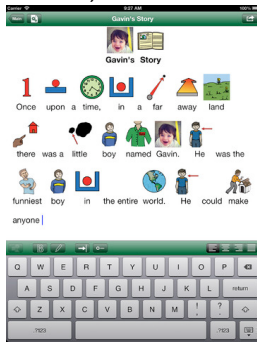
Bits Board

- Create your own content or access large library of pre-made lessons
- Various uses for photos including ID, true or false, matching, “pop quiz,” reader, word builder, and spelling



Supported Writing

SymbolSupport: Symbol supported writing (similar to Symbolate tool on Boardmaker)



Family Board

(\$0.99)

- Record text or voice messages between multiple people
- Great for sharing updates between teachers, family, and therapists



Accessories

Cases



KaysCase KidBox Cover Case for iPad

- Padded, protective case.
- Handle doubles as an angled **stand**.
- \$34.98 on Amazon



GumDrop Drop Tech

- Includes removable plastic screen
- Protective case
- From \$59.00, Amazon



Otterbox

- Very durable case
- From \$59.00, Amazon
- www.otterbox.com



GoNow Case

- Battery-free sound amplification (via system design)
- Built in handle
- \$59.00
- www.attainmentcompany.com



Cases, cont.



Chat Bag

- Carrying case with shoulder strap
- Compatible with most cases
- \$15.00-\$30.00 www.chatbag.net



Addy case

- Includes built-in handle
- Protective case
- \$49.99 www.addy.case.com



The Water Sherpa Case

- Upright display options
- Includes shoulder strap
- Water resistant
- \$49.99,
- www.sherpacarry.com

Great reviews of iPad cases

- <http://specialappsspecialkids.blogspot.com/2013/04/handy-ios-cases-for-kids-with-or-wo.html>

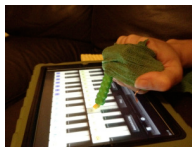
Switch Access

- For an individual who has difficulty with the fine motor skills required to directly access the iPad
- Limited number of applications that are switch-accessible
- Jane Farrell's switch-accessible apps list



Access modifications

- When an individual has difficulty accessing small/precise targets
- Capacitive touch screen, requires electrical conduction



Blogs

- www.praacticalaac.org
- <http://spedapps2.wikispaces.com/HOME>
- www.spectronicsinoz.com/blog
- www.teachinglearnerswithmultipleneeds.blogspot.com
- www.geekslp.com
- chapelhillsnippets.blogspot.com
- <http://specialappsspecialkids.blogspot.com/>

- www.facebook.com/acpchboston
“Like” us!
- www.childrenshospital.org/acp

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