Technology & Communication:

Choosing the right tools and using them wisely

Rebecca Therriault, M.S., CCC-SLP
Augmentative Communication Program
Martha's Vineyard, May 18, 2013

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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

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

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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)

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So what do we make of this?

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

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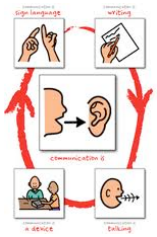

Augmentative Communication

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Augmentative Communication

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

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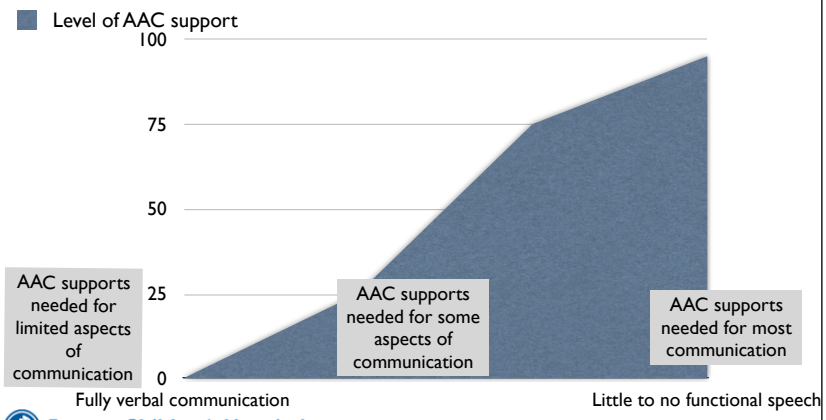
Range of support



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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?

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What does technology offer?

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

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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

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"Cadillac" communication systems

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

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"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

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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.

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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.

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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

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"Low-tech" Options

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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

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Examples:

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

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Setting up communication opportunities in the environment

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"Mid-tech" Options

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"Mid"-tech Communication Devices

- Devices that offer multiple buttons with voice output

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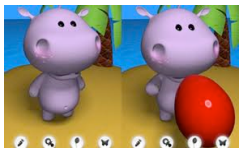

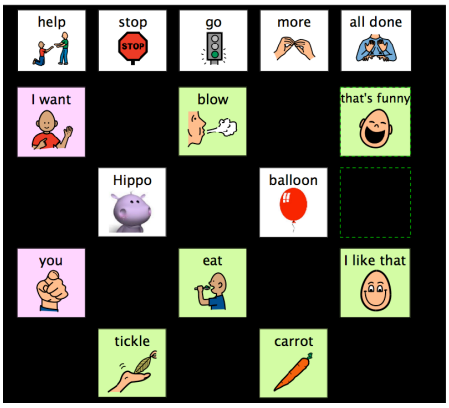

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"High-tech" Options

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"High-tech" Options

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Dedicated Device

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

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Non-Dedicated Device

iPad

Android

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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

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Current technology

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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

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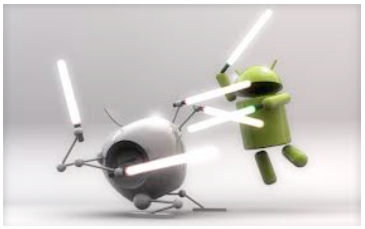
iPad (iOS) vs. Android

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



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General iPad Features

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Getting started with iTunes

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

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Options

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

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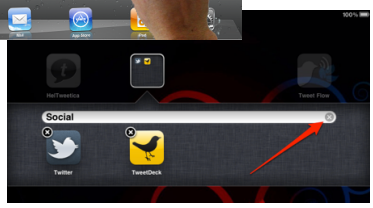
Rearranging Apps & Creating Folders

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



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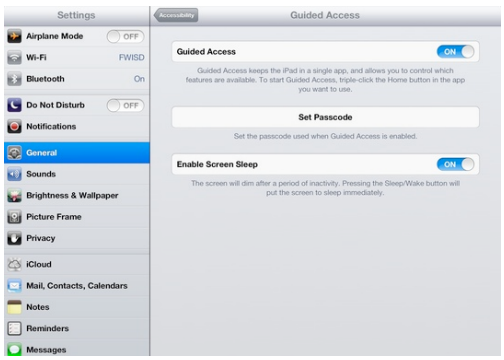
Guided Access

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



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Restrictions

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

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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

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Screen Shot

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

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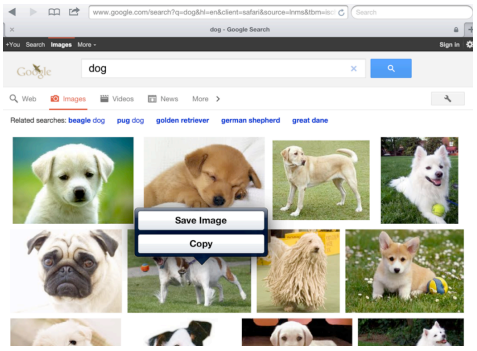
Saving Internet Images

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



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How do I choose an app?

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

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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?)

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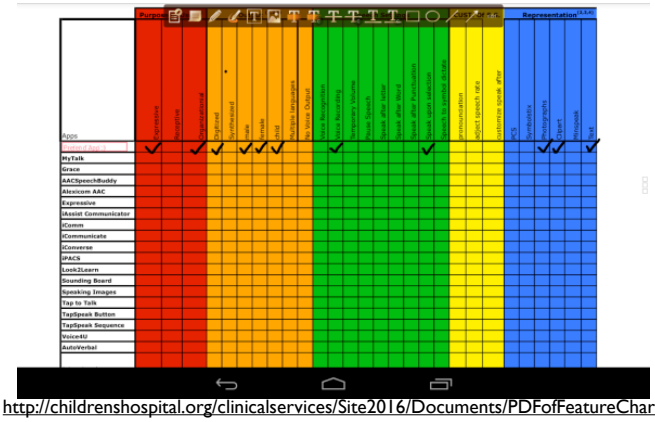
Feature matching



http://childrenshospital.org/clinicalservices/Site2016/Documents/PDFofFeatureChart.pdf

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Apps

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Apps for the beginning communication

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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

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Criteria

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

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Sampling of my favorites...

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Finger Paint with Sounds
Inclusive Technology (free)

Sampling of my favorites...

SoundBrush
Leaf Notes (free)

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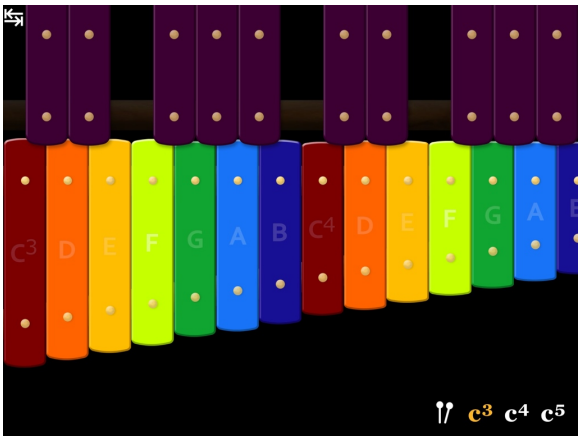
Sampling of my favorites...



aXylophone
Daniel Toranzo Perez (free)

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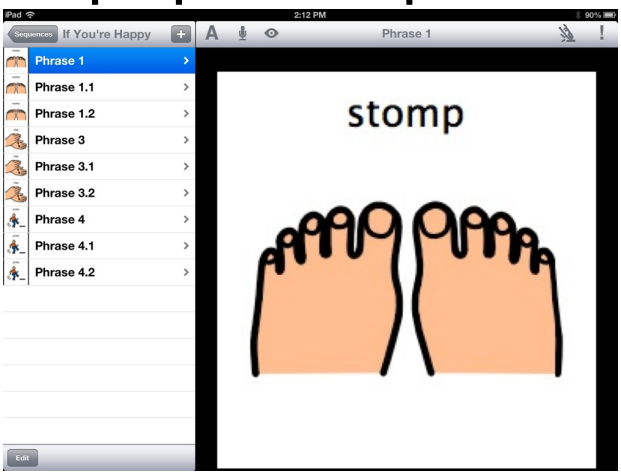
Tap Speak Sequence



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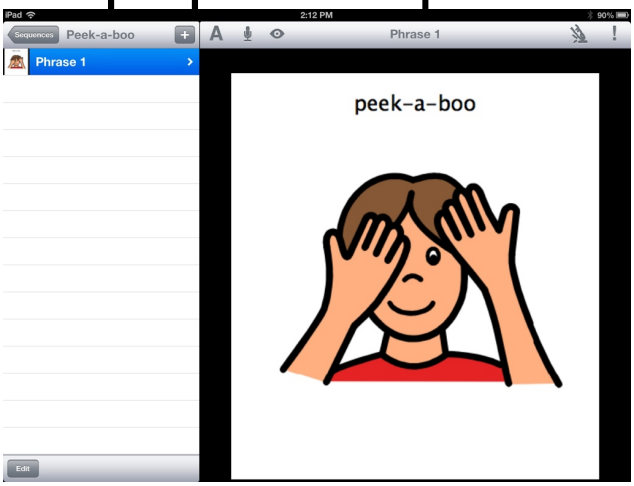
Tap Speak Sequence



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Apps for emerging communication

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Board Builder

(Zapient) $4.99

Pros	Cons
- Great beginning AAC app - Buttons enlarge when selected - Create single boards of 2-12 buttons/page	- Limited features (recorded speech, pages do not link, small symbol library)

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Answers Yes/No HD

Free version
$3.99 for full version

Pros	Cons
- Good "starter" application - 2 buttons/ page, can save 40+ boards	- Limited room for growth

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Apps for <u>developing</u> communicator

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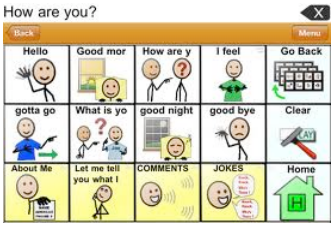
TouchChat HD

(Silver Kite) $149.99

Pros	Cons
- Many nice pre-loaded layouts - Training and limited tech support available (Saltillo) - iShare service - Similar software to dedicated device (NOVAs) - Hold delay	- Can be time consuming to program



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Proloquo2Go

(AssistiveWare) $189.99

Pros	Cons
- Ease of programming - A couple of nice pre-loaded layouts - Symbol Stix library - Hold delay - Many features	- No cloud-based backup/sharing - Unable to program visual scene displays - May require extensive programming to set up

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Go Talk Now

(Attainment Company) $79.99

Pros	Cons
- Ability to change number of buttons/per page without reprogramming - Ability to record speech - Built in Internet image search - Back up using Dropbox - Free version to trial	- "Limited features": small symbol library, add on purchase for pre-made communication pages - No hold delay option - Limited to 36 buttons/page

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Alexicom

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

Pros	Cons
- Available on both iOS and **Android** - Can create speaking and linking pages - Scannable - Option to purchase pre-made page sets	- Some features cannot be modified - Programming is less user-friendly

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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.

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Setting up your communication app

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Selecting vocabulary

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

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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."

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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*

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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.

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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.aaclanguagelab.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

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Other features...

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

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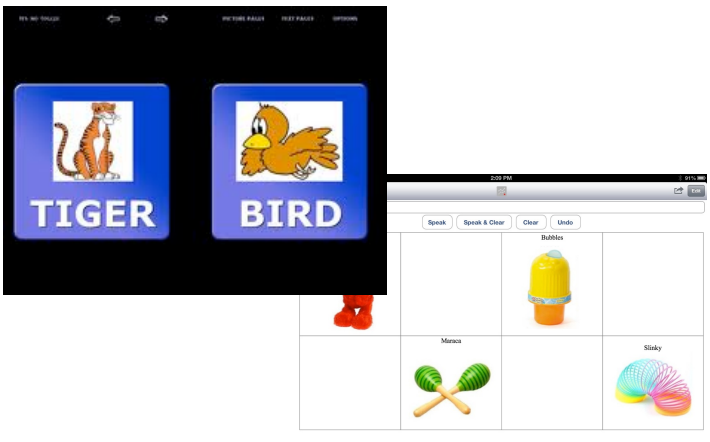
Limited number of buttons



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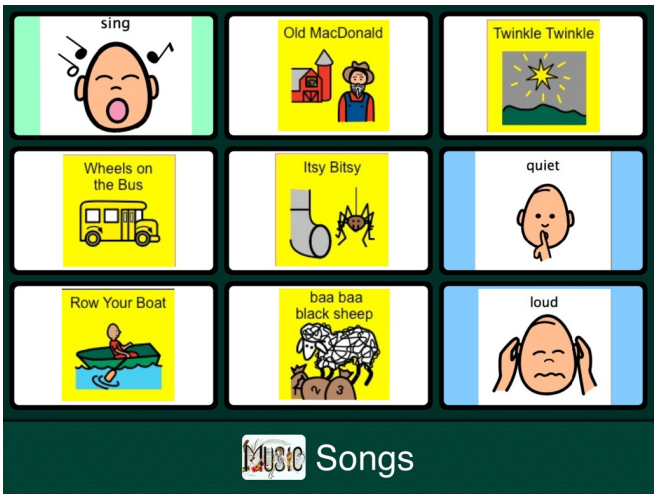

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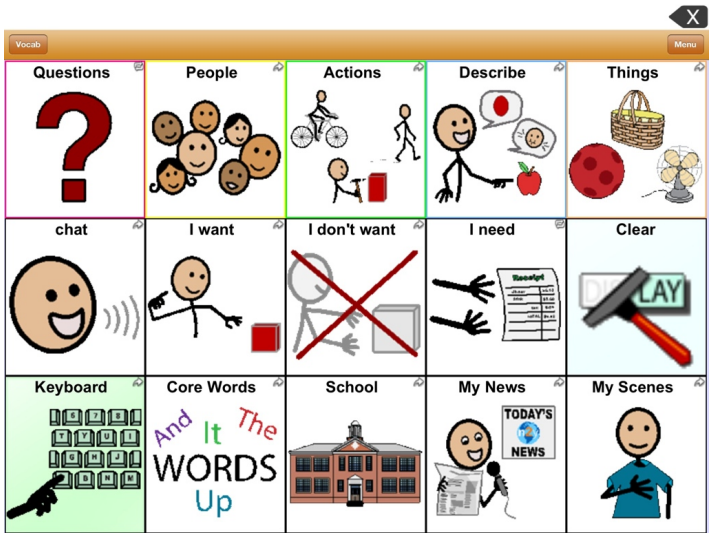

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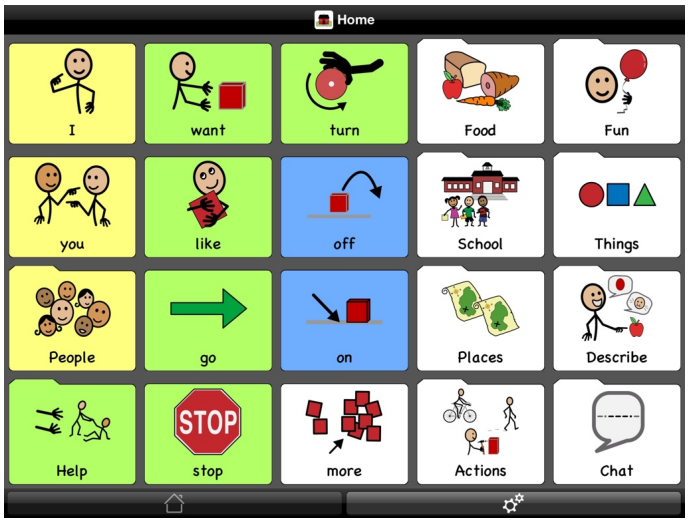

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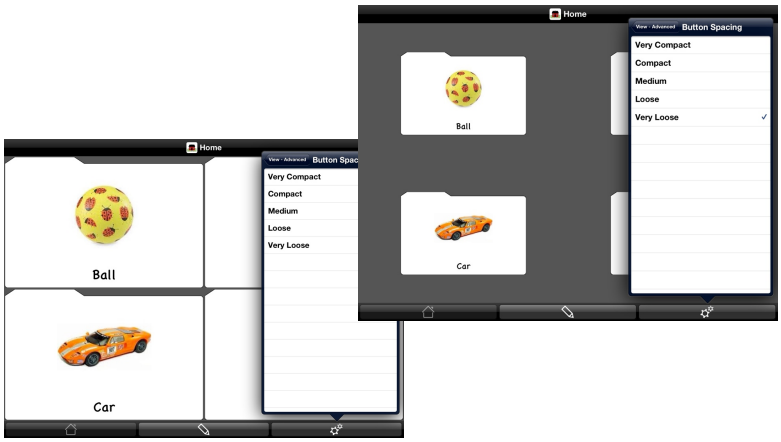
Button spacing



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Supporting use

Remember...

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

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Facilitating social communication

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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

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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

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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

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Language & Literacy

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Receptive Language

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

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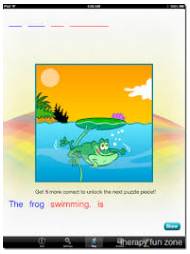
Syntax



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

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Wh- Questions

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

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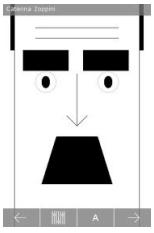
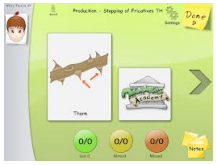
Artic/Voice



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



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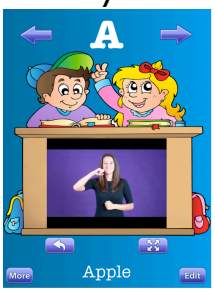
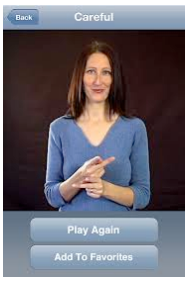
Early Literacy

- Starfall
- Interactive Alphabet
- Word Wagon
- True Learning

Sign Language

Baby ASL





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

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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

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This not that

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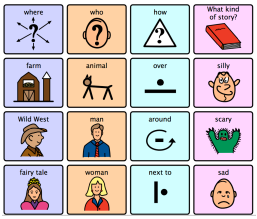
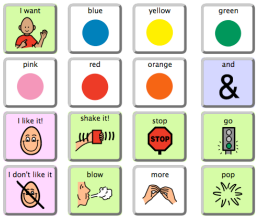
Interactive Play

Pair with topic-specific displays:

- Balloon animals
- Pogg
- Puppet Pals





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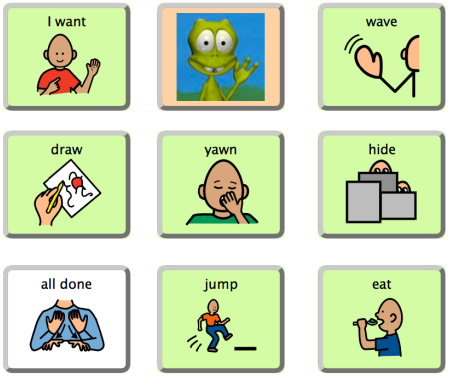
Interactive Play

Pair with topic-specific displays:



"Pogg"

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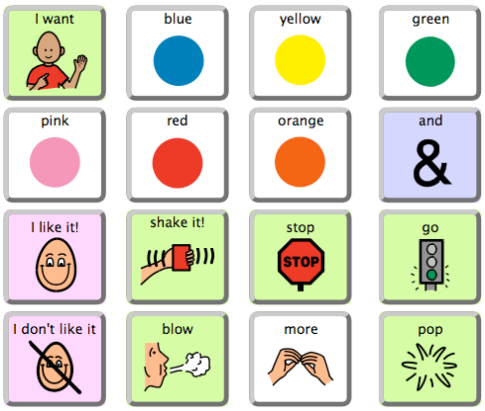
Interactive Play

Pair with topic-specific displays:



Balloon Animals

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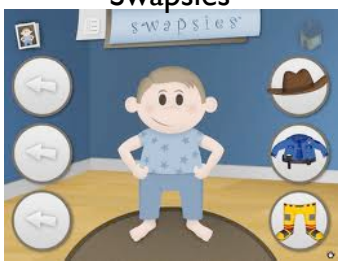
Interactive Play, cont.

Cloudy Shake

Crazy Hair, Picturizer

Interactive Play, cont.

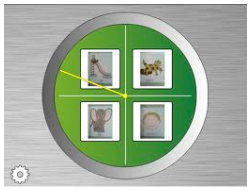
Swapsies



Toca Train

Creative therapy tools

Image Spinner



Make Dice

Toontastic

General Purpose/ Academic

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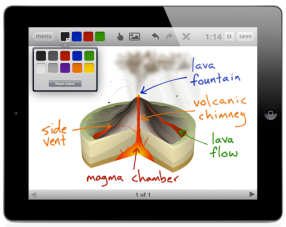
Educreations (free)

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



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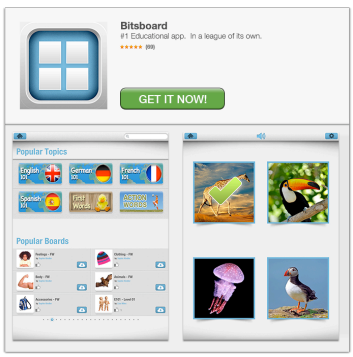
Bits Board

- 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



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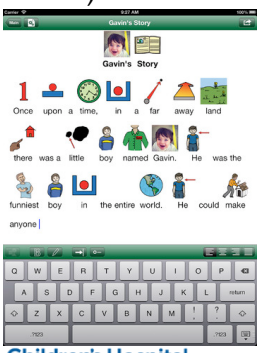
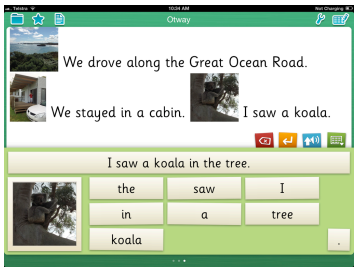
Supported Writing

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

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Cases, cont.

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

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

Addy case
-Includes built-in handle
-Protective case
- $49.99 www.addycase.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

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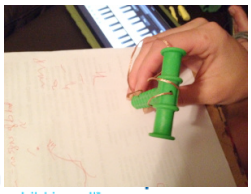
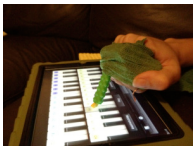
Access modifications

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





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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/

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- www.childrenshospital.org/acp

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References

- AAC-RERC (2011, March). Mobile Devices and Communication Apps. Retrieved from http://aac-rerc.psu.edu/index.php/pages/show/id/46.
- Binger, C. and Kent-Walsh, J. (2012). Selecting Skills to Teach Communication Partners: Where do I Start? Perspectives on Augmentative and Alternative Communication, 21, 127-135.
- Gosnell, J., Costello. J., & Shane, H. (2011). Using a clinical approach to answer "What

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