Using the iPad for Toddlers and Preschoolers with Visual impairments

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Why the iPad?

- Computers versus the iPad
- Challenges of using the iPad and solutions
- The iPad Skills-Concept Matrix (Sayler and Rodriguez, 2012).

Using the iPad and a Sequence of Apps for Young Children with Multiple Disabilities, Sayler and Rodriguez (2013), reSources, Fall 2012 (Vol. 17, No. 2). Used with Permission.
Using a keyboard or mouse requires learning a new skill, and that skill is both counter-intuitive and idiosyncratic to the domain of computer use.

Why a touchscreen (tablet or iPad) is better than a mouse and keyboard for young learners

*Posted on DECEMBER 5, 2012* Written by MIKECONNELL, Native Brain, the future is learning.

http://www.nativebrain.com
Computers in the past required input on the keyboard, touch window, or switch. They were often used in one location, and due to cost limited to one or two students at a time.

The desktop computer was often setup in one part of the room with accessible equipment nearby. Skill practice was scheduled once or twice a day on one particular skill area.
Computer Versus iPads

Typical Instructional practices on the computer emphasis the following:

Using motivational software to teach beginning learning concepts (cause-effect) and later literacy skills by using a Switch, TouchWindow, Intellikey with a commercially made or custom overlay, or Spacebar on the computer. Much effort was spent on identifying the most approach input interface.

If the keyboard became the focus, often function keys were taught one key-at-a-time in the following sequence:

Starting with online “high interest” instructional apps, the following keys were targeted: SPACEBAR, ENTER key in NUMPAD, Arrow keys, NUMPAD keys.

Locating your apps (or navigation) then learning to use your keyboard for writing was next.
When iPads came out in 2010, educators soon discovered that they could be used with younger learners using something that came nature to them: Touching and exploring. Options on the iPad that could be used were:

An interface that children can interact with directly, decreasing prerequisite training often needed with other devices.

Apps are engaging, readily available, and inexpensive.

Options to customize the screen on many of the apps.

Portability

Ease of Use

Interactive Screen

VoiceOver and Guided Access came out later in 2011.
Apps are engaging, readily available, and inexpensive.

There are lots of apps to consider. Consider the following: Skill concept, how student will interact with the content, Amount of content on the screen, what reinforcing events after student response, does the app keep track of Student responses, and how are errors corrected.

<table>
<thead>
<tr>
<th>Date</th>
<th>App name</th>
<th>Visual (V) or Auditory (A) or Tactile(T)</th>
<th>Section of the App</th>
<th>No. of presentations of this App</th>
<th>Positioning of iPad for presentation</th>
<th>Student's Response</th>
<th>Mins on App</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Nov. 8 2011</td>
<td>Tap &amp; Learn</td>
<td>A</td>
<td>Car/Ferry</td>
<td>e.g. this is the first presentation of this App or section of this App</td>
<td>e.g. iPad was positioned on student's right side at eye level</td>
<td>Step by Step “more”</td>
<td>5</td>
<td>4 times in a row</td>
</tr>
<tr>
<td>Jan. 17, 2012</td>
<td>I Hear Ewe</td>
<td>A</td>
<td>Chicken</td>
<td>3rd presentation of this app</td>
<td>Right side, up behind Student’s head and ear</td>
<td>- sleeping</td>
<td>- eye lids flickered for a moment</td>
<td>- no success in waking STUDENT</td>
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Linda Mamer, 138 Apps for Learning, Paths to Literacy
Options to customize the screen on many of the apps

Features to consider: Import your content, customize how it’s present, and Does app keep track of student response.

Tap and See Now Lite (free)-

rjcooper.com
Portability
Ease of Use
Interactive Screen

Adding things to Display

Screen only with solid background
Challenges of using the iPad and solutions

Positioning

Customizing the iPad to the user

Adapting to the environment

Locating the right app
Challenges of using the iPad and solutions

Positioning

When I first observed her in several classes, I realized that most of her technology was positioned too low for her to see and was often in the center.

BTA-Mall

Flexzi 3
Challenges of using the iPad and solutions

Customizing the iPad to the user

Behaviors to Consider:
- Visual Complexity
- Novelty
- Color Preference
- Visual Field Preference
- Light Gazing
- Visual Latency
- Movement

App selection or Visit the Settings app to meet these needs
Challenges of using the iPad and solutions

Adapting to the environment

- Select Cover with enhanced speakers or Bluetooth headphones
- Increase or decrease brightness or color contrast
Challenges of using the iPad and solutions

Locating the right app

Via-Braille Institute
The iPad Skills-Concept Matrix

The following table is the sequence that the authors propose for introducing young children with or without disabilities to the iPad. This sequence can also be applied to older children who have multiple disabilities or who have had little or no exposure to schooling. The sequence correlates with some of the stages that we see in young children as they develop visual discrimination skills and visual attending skills, both pre-literacy skills. Therefore, we have included the corresponding developmental skills with each of the iPad sequence stages as a way to further explain that stage in the sequence.

From “Using the iPad and a Sequence of Apps for Young Children with Multiple Disabilities”, Saylor and Rodriguez-Gil, reSources, Fall 2012 (Vol 17 No 2), California Deaf Blind Services. Used with permission for educational applications (Jan 16th, 2018, Maurice Belote, Project Coordinator).
<table>
<thead>
<tr>
<th>iPad Sequence Step</th>
<th>What Child Does</th>
<th>Related Developmental Stages</th>
<th>Suggested Apps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elements of apps move on own or only change when touched.</td>
<td>Child only needs to look at screen. Child can choose to touch or not touch screen.</td>
<td>Early visual attending &amp; tracking skills. It trains child to look at an iPad in meaningful way. Increases attention span.</td>
<td>Awesome (Tiny Mobile Inc.) Flashlight (John Haney Software) Tap-n-See Zoo (Little Bear Sees)</td>
</tr>
<tr>
<td>Cause &amp; Effect: whole screen. No discrimination.</td>
<td>Child touches any place on screen to get a response.</td>
<td>Awareness that their actions create a response in environment / the iPad. Developing attending and visual tracking skills as they watch the responses on the screen.</td>
<td>Baby Finger (DJ International) Bubbles (Hog Bay Software) Fluidity HD (Nebulus Design) Fun Play Piano HD FREE (Victor Ren) Baby's Musical Hands (Streaming Colour Studios)</td>
</tr>
<tr>
<td>Cause &amp; Effect: Discrimination required to touch specific areas. Learning that iPad presents pictures that can be interacted with</td>
<td>Child needs to touch specific spots on iPad to get a response.</td>
<td>More refined hand movements; more refined visual discrimination. Better eye hand coordination.</td>
<td>Pocket Pond (TriggerWave LLC) - areas to touch almost size of the screen. Peekaboo Barn (Night &amp; Day Studios, Inc) - more discrete spots to touch, but not small. Fun Shooting Stars (Lewis Johnson) - larger area but stars present more discrete areas to touch.</td>
</tr>
<tr>
<td>Integrated scenes. Characters &amp; objects relate to each other.</td>
<td>Child needs be able to take in a scene, maintain attention, touch discrete spots which respond &amp; understand the relationship of parts of the scene to each other. Helpful for adults to work with child much the same as sitting with child with early books.</td>
<td>Increasing visual discrimination &amp; attention span. Helpful for adults to point out things for child to look at and anticipate.</td>
<td>Itsy Bitsy Spider HD and Wheels on the Bus (Duck Duck Moose)</td>
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| Early Learning     | Child works with adults to learn the specific skills necessary to interact with whatever app is being used. | At this point the child has developed their visual discrimination and attending skills such that they can touch discrete spots and take in more complicated screens while learning various concepts. | Zoo Train (Busy Bee Studios)  
Match It Up 1 (My First App)  
My A - Z (Night & Day Studios, Inc)  
Build-It-Up (My First App)  
All-in-One Big Trace Combo Free Lite (Brain Counts)  
Park Math (Duck Duck Moose) |
Apps for Toddlers and PreSchools with VI- Baby Fingers
Apps for Toddlers and PreSchools with VI- Cause and Effect Sensory Light Box
Apps for Toddlers and PreSchools with VI-EDA Play
Apps for Toddlers and PreSchools with VI-I Love Fireworks
Apps for Toddlers and PreSchools with VI- Peeping Musicians
Apps for Toddlers and PreSchools with VI-Draw with Stars
Apps for Toddlers and PreSchools with VI-Infant Zoo: Visual Stimulation and Sounds for Babies
Apps for Toddlers and PreSchools with VI-
Apps for Toddlers and PreSchools with VI-Kids Xylophone
Apps for Toddlers and PreSchools with VI-Balloon Maker
Apps for Toddlers and PreSchools with VI-Picasso: Magic Paint
Apps for Toddlers and PreSchools with VI-Ballyland Magic App

Helps teach gestures with game format
Apps for Toddlers and PreSchools with VI-Pictello
Apps for Toddlers and PreSchools with VI- My Talking Picture Board
Resources

Technology and Young Children: Infants and Toddlers National Association for the Education of Young Children, Naeyc. Source: https://www.naeyc.org/resources/topics/technology-and-media/infants-and-toddlers

WonderBaby.org: Resource that previews apps for young visually impaired infants and toddlers

Effective Collaboration Between Physical Therapists and Teachers of Students with Visual Impairments Who Are Working with Students with Multiple Disabilities and Visual Impairments Erica M. Stearns

Paths to Technology: http://www.perkinselearning.org/technology

HelpKidzlearn apps

Shinylearning