

**Canadian Vision Teachers' Conference 2012  
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**iPad, iPod, iPhone – iTechnology and  
apps that have been used successfully  
with individuals with deafblindness or  
with visual impairments and additional  
disabilities**

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**Agenda:**

# Rationale for the use of iTechnology with students with deafblindness, or with visual and multiple disabilities

## **How do we start?**

-*Form*: iPad Observation / Assessment Sheet - Sample

-*Form*: Sample iPad Observations

## **How to choose the appropriate apps?**

-*List*: Apps for individuals with deafblindness / visual and multiple disabilities

## **Strategies, Tips and Specific Examples that we have used**

### **Photo taking skills**

### **Developing Ideas**

### **Holder / Stand ideas**

## **Quotes from Intervenors / student assistants / families as to their findings from using iTechnology with their students**

## **Web Resources**

## **Dedications**

Note: in this presentation we are using the term “iTechnology” to include iPad, iPod, iPhone and apps and for a short-form approach, when we use the term iPad, and we mean to be inclusive of all the devices

## **Rationale for the use of iTechnology with students with deafblindness / visual and multiple disabilities:**

The iTechnology offers a great new approach for students, especially for those for whom an electronic communication device (such as the GO Talk) may not be feasible for tactile and cognitive reasons and for whom a desktop computer or a laptop may not be the best for visual accessibility.

The iPad helps with adult observations and can become a valuable assessment tool for the sensory (visual, auditory and tactile) and physical aspects of the child, when introducing the iTechnology for the first time. We look at opportunities for communication / social interaction with other students in the class, in the school, in the family, as well as other members of the community.

The iPad can be a tool for students with deafblindness / students who are non-verbal, in terms of their communication - with photos, pictures of objects, board maker type pictures, for choice making, calendar systems, journals / daily communication books and social interaction with peers.

The iPad allows for easy portability for the child's communication system.

The iPad can be placed in a variety of positions to accommodate the child's particular eye condition and can easily accommodate changing visual needs, based on time of day, lighting, fatigue levels, etc.

The iPad can easily be moved with the child, especially if they are in a wheelchair.

Apple has commitment to accessibility and has a built-in enlarging feature as well as voice-over (text is spoken)

The iPad is less costly than a computer.

Although the screen is not large, the clarity of the screen and the brightness of the colours are significant features in attracting the child to the iPad.

We have consistently seen (in a very short period of time, sometimes under one hour at the initial presentation):

High level of engagement of child.

High visual response to the "HD" aspect of the screen.

High auditory response due to the clarity of sounds of the apps.

High ability for the child, regardless of physical abilities / limitations for the child to tap with one finger, especially in a hand-under-hand, finger-under-finger fashion, as well as swipe with both right to left and left to right motions.

## How do we start?

In the beginning, the iTechnology is best thought of as an observational tool for the adult to use in an educational manner. It is not to be seen purely as entertainment. It is a powerful assessment / educational tool that will work for the student for a long time and for many different learning situations. As the adult begins assessing, their ability to become aware of the child's responses becomes heightened in a short amount of time.

Initially, the Intervenors / Adults / Assistants start to observe, for example:

Where is the child's best or easiest visual field for placement of the iPad?

What are the sounds that child responds to?

Can the child interact in a tactile manner with the iPad?

Please see the Form entitled:

“iPad Observation / Assessment Sheet” (to see the areas that can be observed / assessed)

Initially, present apps that are only visual – can turn the volume down.

Then present apps that are only auditory – position the iPad out of the visual range of the student.

Present apps with both visual and auditory components. Then try different apps with these areas in mind.

When we begin using iTechnology with our students, when we are assessing, we are “sensory detectives” – looking at all aspects of the student's engagement with the device and the apps. For example, many students with visual impairments have not appeared to be interested in looking at photos prior to the introduction of iTechnology. However, we have found that photos on the iPad have been very well received by many students and often with students where people may have assumed that photos would not be visually “easy” for the student. So, as a result, when starting with the iPad, the adult should begin by taking many photos – of familiar people and objects and show the child the photo and the real thing side-by-side so that the child can make the connection – that the photo is a representation of the real person or thing.

Please see the Form entitled:

“Sample iPad Observations” to see what one team found in a few sessions with the iPad.

## **How to choose appropriate Apps:**

After completing the iPad Observation / Assessment Sheet, look at the list of Apps entitled:

List: “Apps for individuals with deafblindness or visual and multiple disabilities”

These apps have been specially chosen as having attributes of having clear visual images, visual images that are large, uncluttered backgrounds, clear distinct sounds, large enough sections for tactile engagement so that they would be easy for the student to activate and for them to make the connection that they were the reason that the app was activated. Also opportunities for eye-hand coordination activities were also considered. They have been used with students who are deafblind or those with visual and multiple disabilities.

### **PRICES:**

Note: Prices of apps are not listed, as some were free at the time of downloading, some were free for a few days only, some apps' prices have changed. However, most apps were free or 99 cents at the time of downloading. Also, there are a number of websites that offer some apps free of charge for a set amount of time. We check these sites regularly (see Web Resources for some of these websites). Once you have an app, updates are typically free of charge.

### **LITE:**

When the app has the work “Lite” in it, it is typically a shorter version of the full version and it is free – so it gives you a chance to try the app first. This is highly recommended. When you download apps, you can see other apps made by the same designer. If you like the format and visual content, it is worth looking at the other apps by the same designer as they will be similar.

## **Favorite Apps:**

### Early Learning / Cause and Effect / Picture Recognition

- Peekaboo Barn Lite (North American accent) Peekaboo Barn (has a British accent) – these apps help the child learn how to tap the parts of the app to activate it.
- Shapes (especially “flashcards”) as this section has very clear simple drawing of shapes such as square, diamond
- BabyFinger – (especially the car with the star on it) – when you touch the screen, shapes appear – it helps the child learn how to tap the screen and be rewarded.

### Matching

- Together – very clear photos of items that go together. Good reinforcements for correct answers. Can use this as an assessment tool to see if the child can see the photos of common items, do they know their use? If they do not, you can get the real concrete item to help them learn
- The Matching Game by Little Matchups – clear photos, good opportunity for eye-hand coordination and good verbal reinforcement

### Music

- Musical Hands – a great app to teach the child to make specific tapping movements to get the music and action to happen. Can also try this with no sound for the visual effects
- Virtuoso – this is a piano where you can move up and down the keyboard to check the child’s auditory responses. The keys can be made larger or smaller, depending on your student’s fine motor abilities

### Printing & Spelling

- Three Letter Words by Little Speller – clear photos and the opportunity to learn to drag letters into the correct box to spell the word. Can customize
- Pocket Phonics abc Lite – can trace letters with verbal direction
- ABC Writer – can draw letters with different colours

### Drawing

-Just Draw – easy to activate in different colours

-Doodlecast – can draw and record the instructions of the drawing and the child can re-play the video and audio recording as the drawing process is shown again

### Books for Children

-I Like Books - wonderful photo books by Grasshopper Apps – some are visually busy, so need to check which books will work with a particular child. There are regular updates of new books

-The Monster at the End of This Book (Grover)

Glow Art – there are many “glow” apps- wonderful colours and movement of colours and lights that can be easily activated. May need to check that the child is not overwhelmed by all the sensory input

-Glow Draw

-Art of Glow

-I Love (heart) Fireworks

### Sounds

-I Hear Ewe – wonderful sounds of animals

-Sound Touch Lite – good sounds, some clear photos of animals, transportation

-Sound Effects – many auditory sounds – no visuals – good for auditory training, discrimination

### Sequencing / Communication Boards

-SeeTouchLearn – excellent for concepts such as “First, Then”, customizable for your student’s needs

-ChoiceBoard Creator

-very easy to use, can make choices- 2 or 3 photos at one time, can take the photo within the app as you need it

Cortical Visual Impairment: There are now specific apps for Cortical Visual Impairment such as

Little Bear Sees Tap-n-see Zoo

from [www.littlebearssees.com](http://www.littlebearssees.com)

There are Tap-n-See Zoo Lite and the full version Tap-n-See Zoo– can customize the shapes with colours and sounds.

Check out the apps that you are thinking about in the App Store (a section of iTunes). Many apps have YouTube videos with people using the apps where you can see more of the app than in the App Store.

Look for apps that have the option to customize sections for your student's specific visual, auditory and tactile needs.

Start very slowly, try the visual part of the app first, or the auditory part first. Do not try to "razzle dazzle" the child. Do not have the student try to look and listen and tactilely activate the apps all at once. If the app is presented well, the motivation inherent in the app will last for a long time. So begin with the adult activating the one component (visual or auditory first). Watch the student's response.

If the child looks away or turns away, do not assume that the child is "bored". Boredom is rare with these children. More typically, the child needs a sensory break, some processing time or just a bit of down time. Give them a few seconds, and then bring up the same app.



## **Strategies, Tips and Specific Examples that we have used:**

### **Strategies:**

#### **Tell the child what you are doing as you look:**

When looking for an app that is on the iPad, as you are sitting with the child, verbalize / sign what you are doing, so that the child is included in this part of the process – for example:

“I am looking for the app with the dogs. It is called “Sound Touch Lite” – here it is, in the file called Early Learning”

#### **Terminology:**

Using the terms “tap” and “swipe” from the beginning is very important. We even say “swipe left” or “swipe right” with students with significant levels of disabilities. Using these terms helps the students get used to them and when we have expectations both of this level of engagement and of fine motor action / activity, often the student begins to attend to those phrases and participates appropriately.

#### **Hand-under-Hand Approach:**

Using a hand-under-hand (or finger-under-finger) approach from the beginning is critical as the child can possibly learn the proper positioning. With the hand-under-hand approach, the adult’s hand or finger does all the actions, with the child’s hand on top of the adult’s hand. Do not move the child’s hand in a hand-over-hand manner. Assume the child will learn to tap and swipe. By doing this, one can avoid the child’s hand moving over the screen in a sloppy messy manner, that you will eventually have to have the child “unlearn”. We have been amazed at the number of children who learn and can attend to tapping and swiping.

#### **Stylus – Tool:**

Using a Stylus made for the device, can assist the child in learning the tapping and swiping. The Stylus holds the hand up from the screen and allows better viewing of the screen, as the hand is not covering a large amount of the screen. Also the hand-under-hand approach works very well with a stylus as the adult holds the stylus, with the child’s hand on top of their hand. When the child’s hand becomes comfortable on the stylus, the adult’s hand can slide further up the stylus as the child’s hand then rests on the stylus. The adult can then direct the stylus by holding on to the top of the stylus.

## **The Routine of Charging the iDevice:**

The student should be part of the routine of charging the iPad at the end of the day and retrieving the iPad the next morning. This gives the student increased opportunity to be aware of the iPad and also a social opportunity if the iPad is kept in, for example, the front office.

## **Tips:**

### **Terminology:**

The terms “photo” and “picture” should be used distinctly, separately and clearly so that others will know what you are talking about – photos are photos and pictures can be line drawings, board maker pictures, hand drawn cues, etc. Generically using the term “picture” is not helpful to learning about the child’s visual abilities.

### **Types of Apps:**

Differentiate among the apps – There are school apps, home apps, fun/entertaining apps (could be seen as babysitting apps). Some are true teaching apps that work best in school. Keeping them “special” allows for the motivation (and hence the learning) to stay high. Sometimes, when a child responds well in school to a particular app, the families often want to use that app at home. The app can then slide into becoming a “babysitting” app and we lose the motivation of the app. It would be better to find a similar app to the favorite app to use at home. For some of our students who take their iPad home, we have School files and Home folders.

So you can have these apps in Folders – with specific titles, and then if different students use the same iPad, each child can have their own Folder entitled: (for example)

School Apps

Home Apps

“name of student” Apps (Heidi’s Apps)

Entertaining apps are often the ones that the child can activate on their own and are just fun to play or just to look at, if they are “autoplay”. Some of the students have apps such as these and play them for a few minutes as the adult is getting set up for the actual lesson as a warm-up. Then they are more focused to participate in the educational apps.

## **Physical assists:**

To help with a student who does not have complete control of their hands/ fingers – can try using a sock with a finger hole cut out, so that the hand can rest on the iPad but does not activate the app – the finger is the only part that would activate the app.

Involving the occupational therapist and physiotherapist of the student would be highly recommended to assist with the appropriate physical placement of the iPad.

## **Specific Examples:**

For a high school student with deafblindness who uses a wheelchair and has significant additional needs, for her volunteer job, she goes to an elementary school and using the modular hose holder for her iPad, she reads to the young children with an autoread book (app: There is a Monster at the End of This Book)

For a high school student with Deafblindness in a resource room, her peers each have a specific app that addresses an IEP goal of theirs, and they work on their app on our student's iPad. So there is built-in social time and the other student needs to include our student. For example, the peer needs to make eye-contact with our student as they progress through their app, as that is an IEP goal for him. Another example is that the peer needs to show our student the number or letter that they are working on, by fingerspelling it to our student.

For a student with Cortical Visual Impairment in a wheelchair, we took photos of the different classroom locations, then the student learned to match the photos to the actual classrooms.

One of the students in a high school has “cool songs” on her iPad and it sits on the back of her wheelchair and plays as she goes down the hall among all the students at the school. The students in her class voted to pick the next two songs for her iPad to download.

For a young child who is learning new social skills, an iPad works well in learning the concept of turn taking and waiting for his/her turn. In using the same program/game on an iPad with the student with deafblindness and one or more of her peers, it has been an effective place to introduce the signs for and the idea

of waiting and of turn taking – for example, “my turn” “your turn”.

For one of our students, prior to his getting his iPad, his Intervenor used her iPhone to take photos and showed him the activities and the people in the class, as part of his calendar cues. He was able to visually attend to the photos on the iPhone.

To motivate movement, we used the student’s favorite app to get him to ride his bike with both of his hands on the handles. One of us ran ahead of the bike, showing him the iPad and the Intervenor ran alongside the child and the bike and when he lifted his hands, we would stop and close the iPad.

A student who loved animated stories on the iPad, while in her walker, would walk towards the iPad and then would see a bit of the story and the adult would walk backwards and the child would begin walking again.

## **Photo Taking Skills:**

Need to gain skills at clear photo taking, since photos are likely to become a large part of the child's communication system.

-need a clear, uncluttered, "bland" background for photos when you are taking the photos

-photos of people, in most cases, need to be from mid-neck up with little of the clothing showing

-can designate a part of a beige / white wall in the classroom / home that is never used, so it can be the regular backdrop for the photos of people

-include the student in the photo taking activity—show the student the photo as soon as you take it. Take some time to have the student realize / recognize that the photo and the person are the same.

-can have a white sheet and a black sheet always available to provide a good contrast for the object for the photo.

## **HOLDERS: (for wheelchairs, wheelchair trays and tables / desks)**

This is a developing area and it is a good idea to include the therapists on your student's team to individualize the needs and access of your student.

Modular hose

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

Logiix Launch Pad – a multi-use stand with Cable Management

Logiix Launch Pad – a multi-use stand with Cable Management

## **Developing Ideas / Looking for Suggestions:**

Since this is such a new field, we are exploring and discovering as we go (and we are looking for additional ideas):

### **\*The equivalent of a physical “finished box”**

We have used an actual finished box that we carry along with the iPad.  
We have used a transparency sheet with an X drawn on it to go over the screen  
We have used a transparency sheet with a big red circle and a line drawn across it (we often use this with photo or Boardmaker cues).

### **\*Ways to carry / transport the iPad when the child is mobile and the adult needs their hand free for signing, etc.**

We are trying a sling – material that can be like an across-the-body-purse-handle and the adult wears the iPad on the hip

### **\*Math apps that have good clear visuals of simple number concepts**

Most math apps are visually busy and complex in their concepts.

## Quotes from Intervenors / student assistants as to their findings from using the iTechnology with their students:

“he is highly motivated to look at the iPad”

“he seems to see the boardmaker cue or photo on the iPad better than the actual physical cue, because it is bigger and brighter than his current cue”

“the level of visual engagement is at a level that we have never seen”

“the opportunities for social interaction with peers is much greater”

“with his eye condition, he needs to get much closer to the screen than a desktop or laptop computer will allow”

“with the iPad, we can move the iPad to wherever she needs it – to the left, right, up, down, more to the side, etc., so that the peer can easily participate”

“we can easily videotape the student in action, to show his family”

“the cues can be made instantly with a photo”

“it is like a magnet for my student. He is instantly drawn to it, even when he looks as though he is quite tired, when I bring out the iPad, he perks up”

“we have actively demonstrated a prolonged attention span of up to 40 minutes with **one** app on the iPad”

“our student had never responded during an audiology assessment, but consistently responds to the app: “Talking Tom” even when presented with no visual cues”. We took the iPad to his latest audiological assessment and demonstrated this to the (amazed) audiologist”

## Web Resources:

Websites that offer free apps for short-term downloading opportunities:

FreeAppMagic

FreeApp\*Daily

AppsGoneFree

HotAppDeal

Freebies

On Facebook – Babies with iPads

Websites to follow for ideas on new apps and how to use current apps

Special Needs Apps for Kids (SNApps4kids.com)

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

Apps for children with special needs (has podcasts and videos of specific apps being used by children)



## **Dedication and Thanks**

This is dedicated to the children, their families and the school based teams who willingly started using the iTechnology without guarantees or research that it would be a beneficial learning tool.

This is also dedicated to Steven Jobs.