

Assistive Technology Solutions



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<https://assistivetechnologyblog.com>

Financial disclosure: the speakers have no relevant financial or non-financial relationships to disclose.

The material in this presentation is for general clinical knowledge, and it is not considered treatment recommendations for specific patients.





<https://www.youtube.com/watch?v=EBecTzt65sl>



<https://www.youtube.com/watch?v=aqoXFCCTfm4>



Adaptive Computer, Tablet, Phone, Home Automation Access & Adult Durable Medical Equipment Programs

- Criteria: Adults 18 or older, Dx that limits use of technology or needs A.T. to aide a disability (TBI, MS, Cognitive / Memory Deficits.)
- Referrals: self, physician, family, OVR
- Prescription: “OT Eval & Treat for Assistive Technology or Durable Medical Equipment”
- How to schedule: Outpatient Neurology Clinic 610-776-
- Insurance: Most insurance is accepted, OVR, private pay
- Length of visits: 7-10 for OT evaluation and training
- Equipment Coverage: Typically not covered by insurance but we provide information on financial assistance programs – OVR, PATF & philanthropic programs.

Objectives:

At the end of the workshop, participants will be able to:

1. State 3 conditions that may limit the ability to use a computer, tablet or smart-phone.
2. Discuss OT evaluation assessment for adaptive computer access.
3. List 3 ways to adapt and use a computer, tablet or smart phone.

Assistive and Rehabilitative Technology

- Rehabilitative Technology is designed to train individuals to regain function.
- Assistive Technology is devoted to the facilitation of function.

Assistive Technology: Defined



Assistive or Adaptive Technology commonly refers to *"...products, devices or equipment, whether acquired commercially, modified or customized, that are used to maintain, increase or improve the functional capabilities of individuals with disabilities..."*

Assistive Technology Act of 1998

<http://section508.gov/docs/AT1998.html>

Closing the GAP!!!



“For people without disabilities,
technology makes things easier.

For people with disabilities, technology
makes things possible.”

What is the Purpose of AT?

- To help people with disabilities participate in life activities and to maximize their independence and quality of life
- Simple to complex examples:
 - Play a game
 - Make or receive a phone call or text message
 - Read the paper
 - Participate in work/school/leisure activities
 - Communicate wants and needs
 - Use the internet

Low, Mid and High Tech Assistive Technology Devices

- **Low Tech:** Inexpensive, easy to learn, readily available, can be “off-the-shelf”, easier to make/maintain/replace.
- **Mid-Tech:** May cost more, require some training, have a special design, may need a power source or other support.
- **High-Tech:** Higher cost, needs specific training to learn, may require on-going support, often customized.

**Adaptive
Computer / Phone
Access**

**Pediatric
Adaptive
Computer
Access**

**Augmentative
&
Alternative
Communications
(AAC)**

**GSRH
Assistive
Technology**

**Environmental
Control
Systems**

**Adaptive
Driving**

**Wheelchair
Seating
Mobility**

Adaptive Computer / Phone Access / Home Automation Program

- Good Shepherd Occupational Therapy / Assistive Technology program
- Requires a physician prescription (Rx)
- Verify insurance coverage
- OT evaluation to assess patient's needs
- Goal oriented program which identifies key technologies to improve educational or vocational skills
- Brain injury, MS, MD, CP, Autism, Spinal cord injury, Stroke, other neurological or Upper Extremity injuries or Visual & Hearing disabilities requiring adaptive strategies.

Adaptive Computer Access Hardware Solutions

Adaptive Keyboards

- Smaller for limited range of motion
- Larger for individuals with tremors or coordination deficits
- On-screen keyboards with mouse control



Alternative Mice/Trackballs

– Alternative Mouse Types

- Thumb mouse / Track balls



- Track pads



- Keyboard mouse

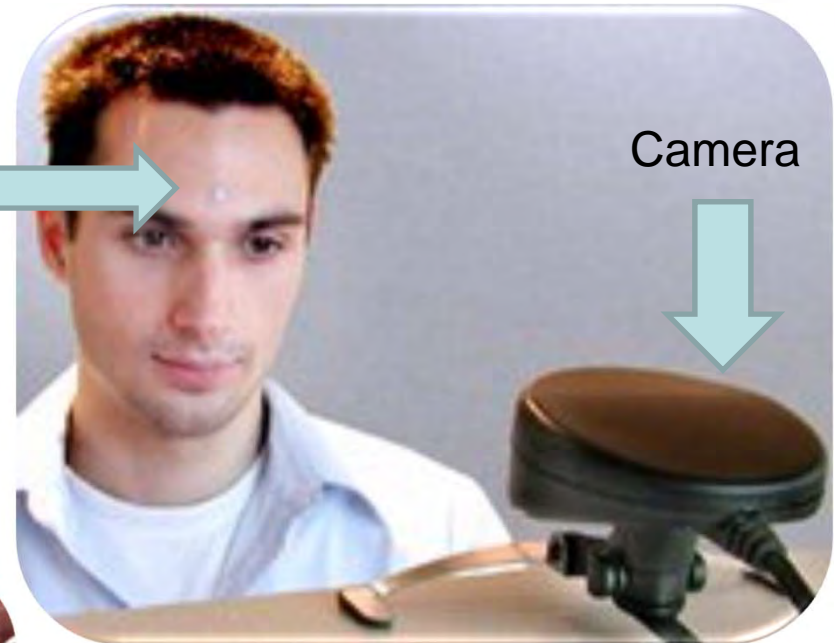
- On-screen mouse with reflective dots



Tracker Pro (head mouse)

Reflective dot at
bridge of nose.

Camera Software tracks
dot & clicks Mouse after
2 seconds of dwell time
(adjustable).



Cameramouse.org
(free pc software
from Boston
University –
requires a web
camera.)

Software Solutions: Adaptive Computer Access: Dictation



Benefits Individuals with :

- 1) Poor penmanship, fatigue
- 2) Physical limitations
- 3) Inability to efficiently use a mouse or keyboard.

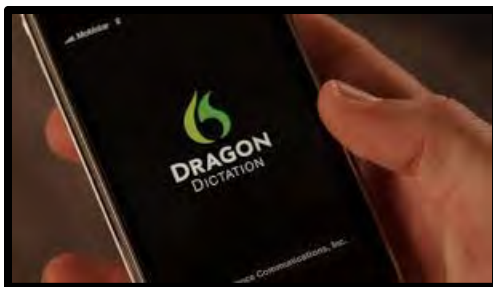
User Requirements:

- 1) Ability to speak /whisper
- 2) Willingness to learn

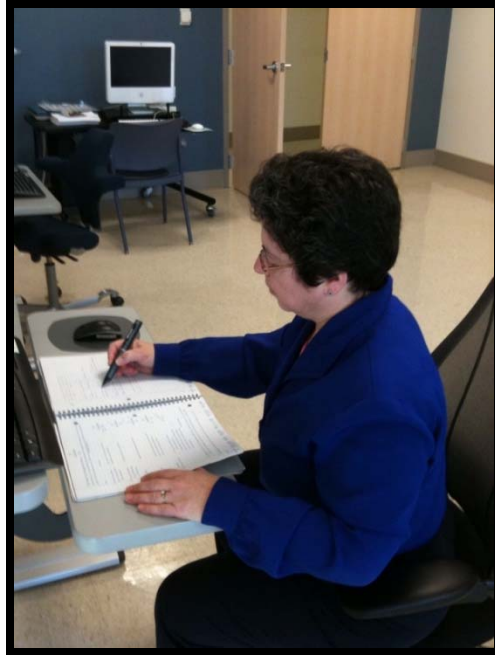


Occupations:

- 1) Dictating into MS Word documents for school or work
- 2) Excel spreadsheets
- 3) Email
- 4) Games
- 5) Controls mouse, desktop and web pages with voice commands
- 6) Works with most windows-based programs



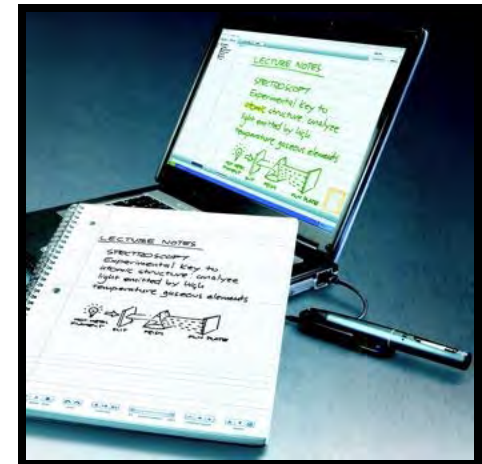
Memory and Note-taking Supports



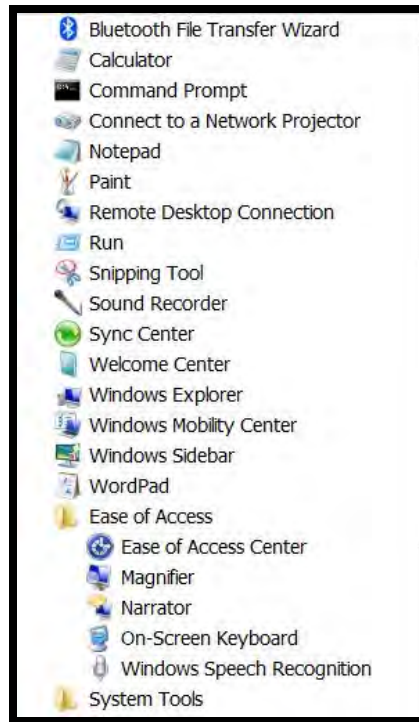
Livescribe Smart Pen

Digitally records audio and note-taking on specially encoded notebook paper. Allows easy playback

<http://www.livescribe.com/index.asp>



Windows 7 - 10: Accessibility



Explore all settings

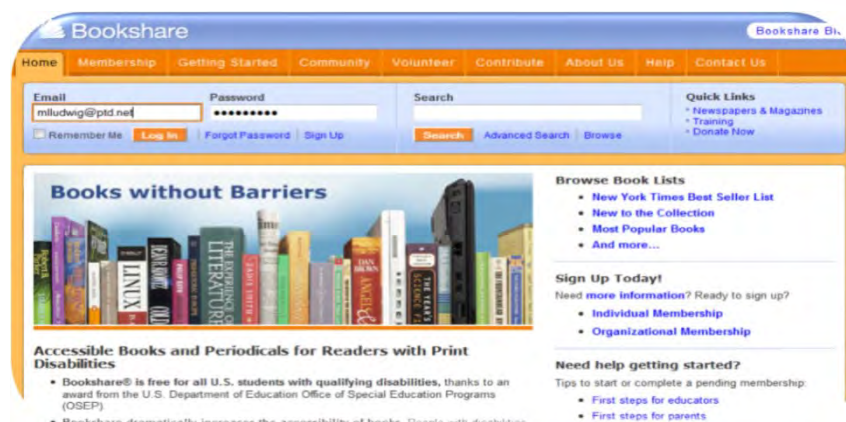
When you select these settings, they will automatically start each time you log on.

- Use the computer without a display
Optimize for blindness
- Make the computer easier to see
Optimize visual display
- Use the computer without a mouse or keyboard
Set up alternative input devices
- Make the mouse easier to use
Adjust settings for the mouse or other pointing devices
- Make the keyboard easier to use
Adjust settings for the keyboard
- Use text or visual alternatives for sounds
Set up alternatives for sounds
- Make it easier to focus on tasks
Adjust settings for reading and typing



www.microsoft.com/enable/training/windows7

Learning Support Software



Support: WYNN™



WYNN is the innovative literacy software tool designed to enhance success for individuals with reading challenges and writing difficulties. WYNN was developed with the help of special educators and individuals with learning difficulties. By using a bi-modal approach — simultaneous highlighting of the text as it is spoken - WYNN transforms printed text into understandable information that benefits readers of all ages.

Kurzweil 3000 Windows® Version 13

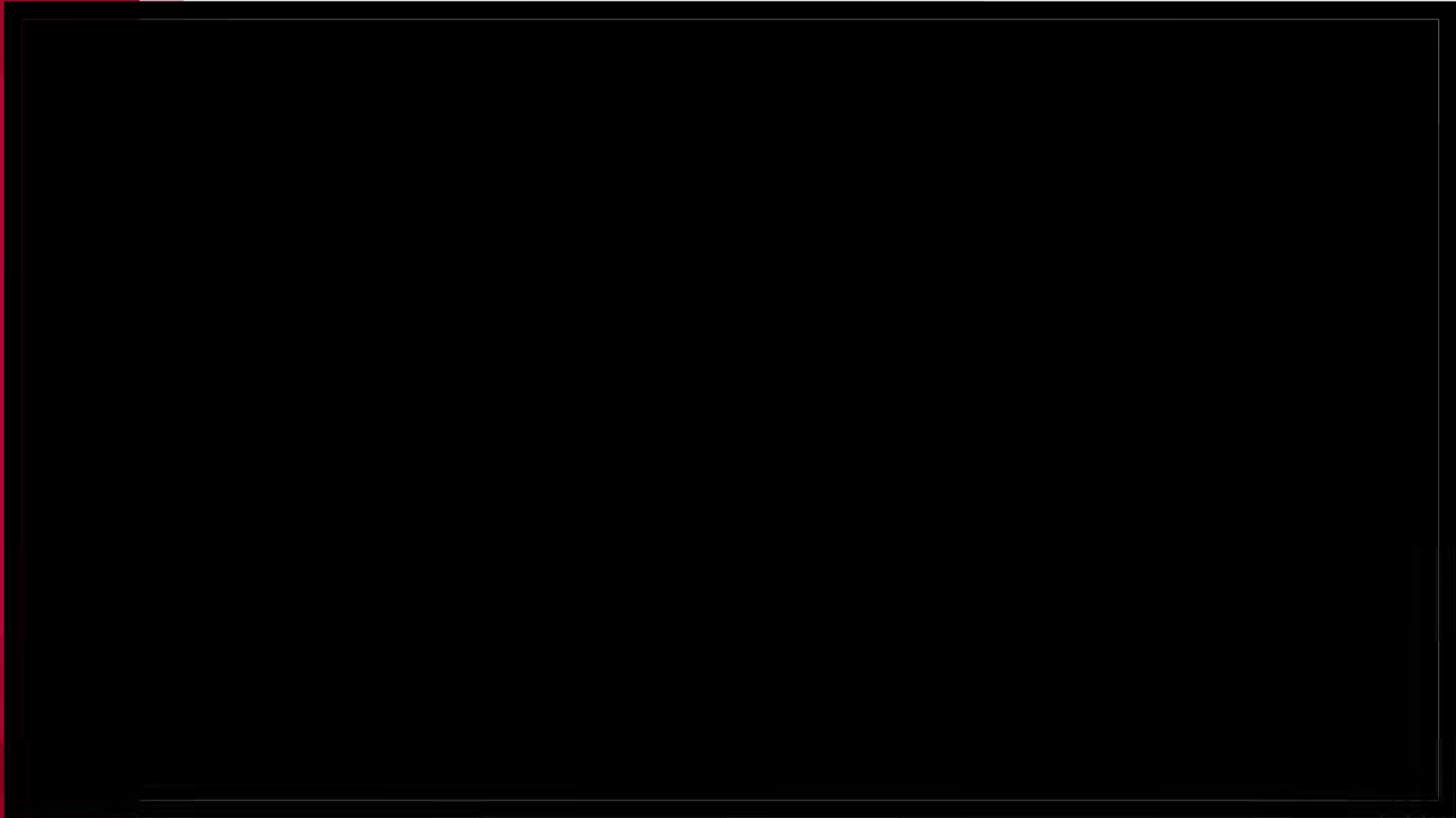
Kurzweil 3000 is an assistive technology, text to speech, learning tool that supports the concept of [Universal Design for Learning](#) with a suite of powerful reading, writing, [test-taking](#), and study skill tools that makes curriculum accessible to all students. It is particularly appropriate for students with learning disabilities such as [Dyslexia](#), those who require reading intervention, students struggling with reading comprehension and [English Language Learners \(ELL\)](#).

[Order Now!](#) or [Request a Free Trial](#)



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REHABILITATION

OrCam MyEye



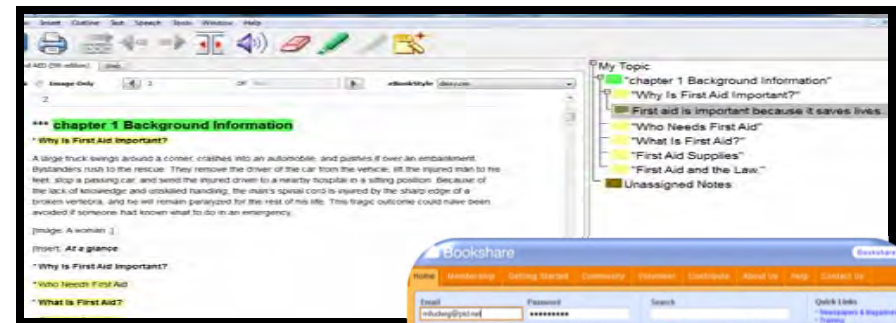
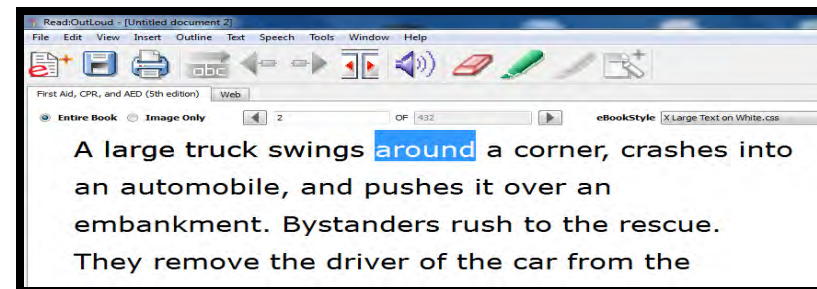
<https://www.orcam.com/en/myeye2/>

Adaptive Computer Access - Reading

- **Learning Ally.org** – “Recorded Books” read by volunteers with highlighting.



- **Read-Outloud**
App that reads & highlights text & insert notes.
- **Bookshare edition**
of Read-Outloud is free to students access to many books.



iPAD

- **Built in Accessibility Features**
 - Touch access
 - Zoom in /out-double tap
 - Voice over- announces /reads icon & text selections when touched
 - Large text
 - On screen keyboard with voice recognition SIRI and word prediction
 - Programmed gestures: pinch and stretch etc.

iPad - Assistive Touch

(video)

iPad Accessibility

Assistive Touch



iPad Accessibility Zoom

(video)

Double tap with three fingers. To move around screen, drag three fingers while zoomed. To change zoom, with three fingers double tap and drag up and down.

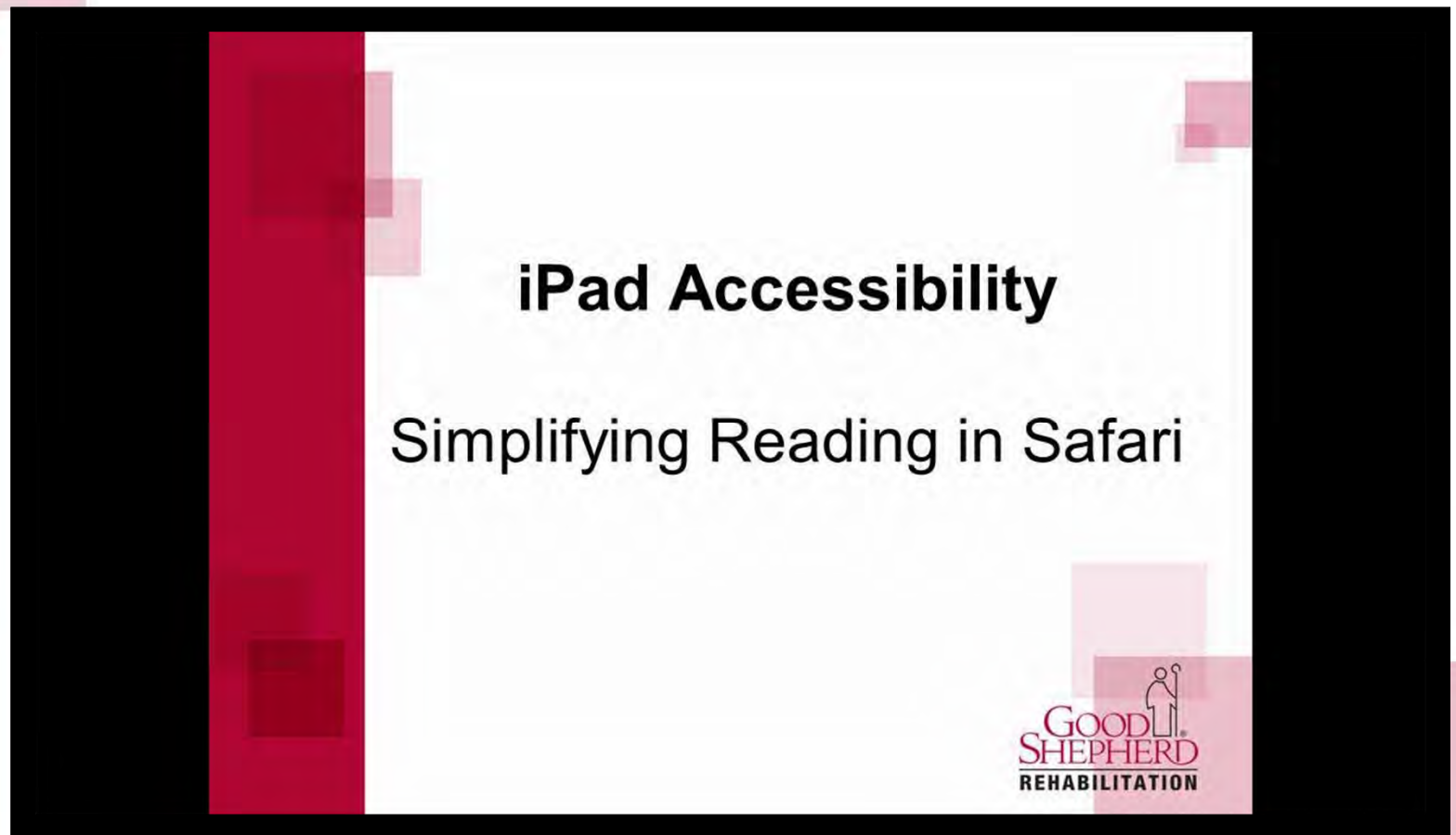
iPad Accessibility

Zoom Feature



iPad Accessibility: To Simplify Reading in Safari (video)

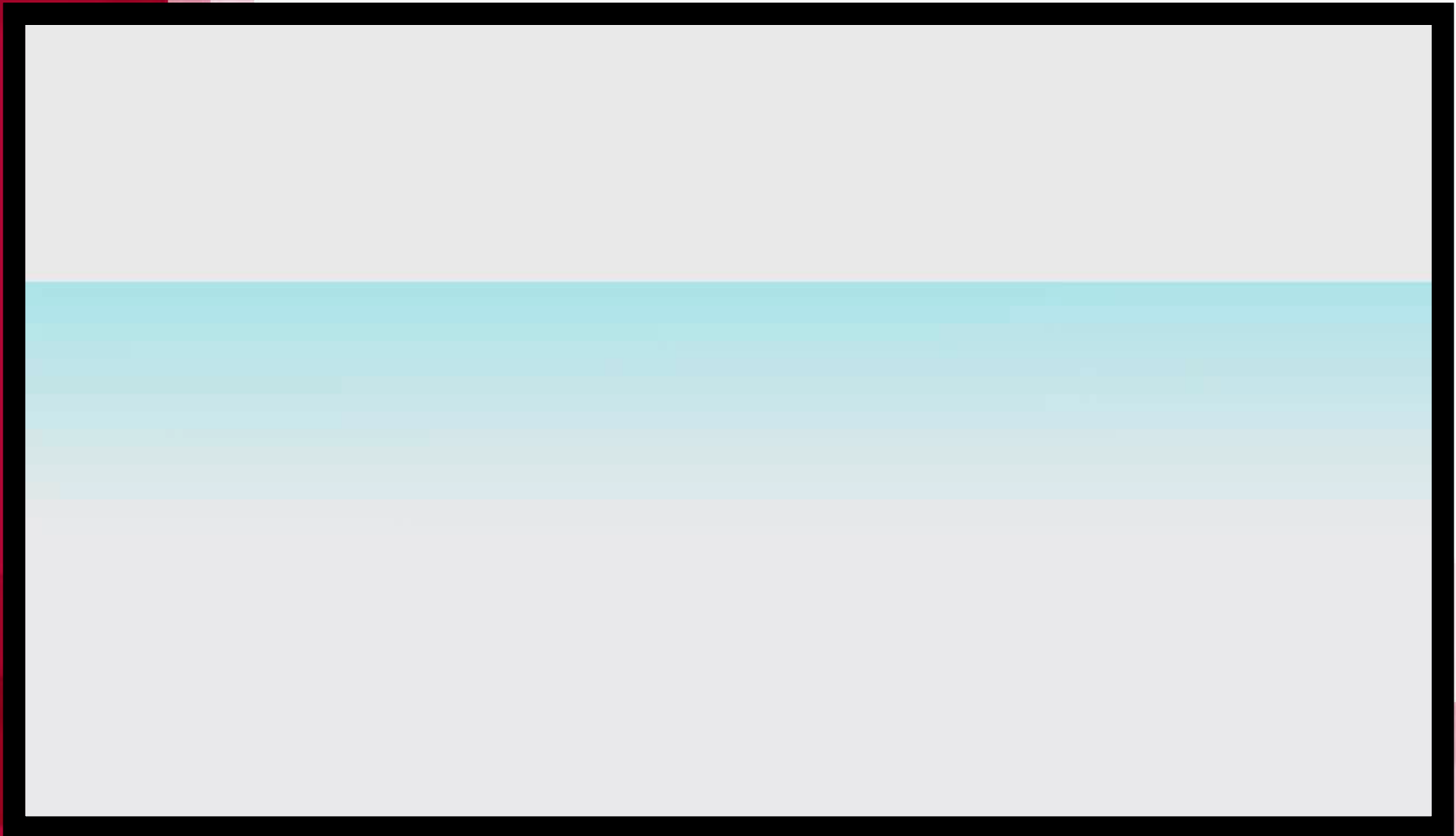
Click on the left end of browser to extract just the text.



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Read2Go

(video)



iPad Accessibility

Manual Switch Control

User can select scanned items with an
Ablenet Blue2 (Bluetooth)

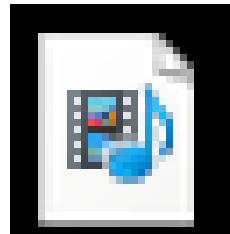
Switch (not shown) and / or a remotely
located manual switch as items are scanned
(Slide has No Sound)



iOS 7 Switch Control

Dual Switch Step Scanning Setup and Use

Switch Access-Obi Robotics



Obi Robotic Dining Device..mp4

Memory Support Apps

- Over 900,000 apps
- New apps are added each day.
- Finding and organizing apps can be challenging.



Navigation App:

Locates parked car or desired return point-free but requires data plan usage.



TrackR

Find Lost Items



Cross Platform
Works with iOS® and Android® Devices.

Crowd Source Tracking
Crowd Source Tracking enables users to locate items after they have been lost or stolen.

2 Way Ringer
Make searching easier using the app to ring your lost items. Or use the TrackR device to ring your lost phone.

Item Location
Stay organized and see where your items are on a map.



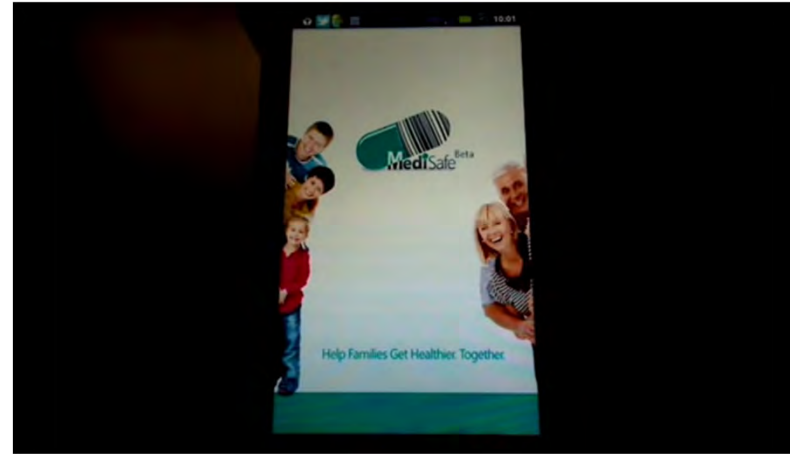
No Recharging
No need to recharge, TrackR runs on replaceable batteries that can last for up to 2 years under normal use.

Distance Indicator
The proximity indicator shows you if you are getting closer to your item.

Multiple Item Tracking
Track up to ten items simultaneously.

Completely Customizable
Choose your own sounds, icons and more!

Medisafe-dose reminder (video)



- Provides easy to use interface to help compliance with taking medication
- Identifies when medication has been taken and alerts caregivers when not taken
- Sends medication reminders up to 4x/day



In the beginning of 2015, the system became accessible to people without smartphones, via an automated phone system and SMS. Patients are able to record medication doses via touchtone, and caretakers receive alerts via incoming, automated calls when patients have missed a dose.

Cognitive Training Apps

Subscription Apps

THINK faster

FOCUS better

REMEMBER more



brainHQ
from Posit Science



GOOD SHEPHERD
REHABILITATION

The logo for Good Shepherd Rehabilitation features a stylized icon of a shepherd with a staff and sheep, positioned above the text. The text 'GOOD SHEPHERD' is in a large, red, serif font, and 'REHABILITATION' is in a smaller, black, sans-serif font below it.

Brain HQ (video)



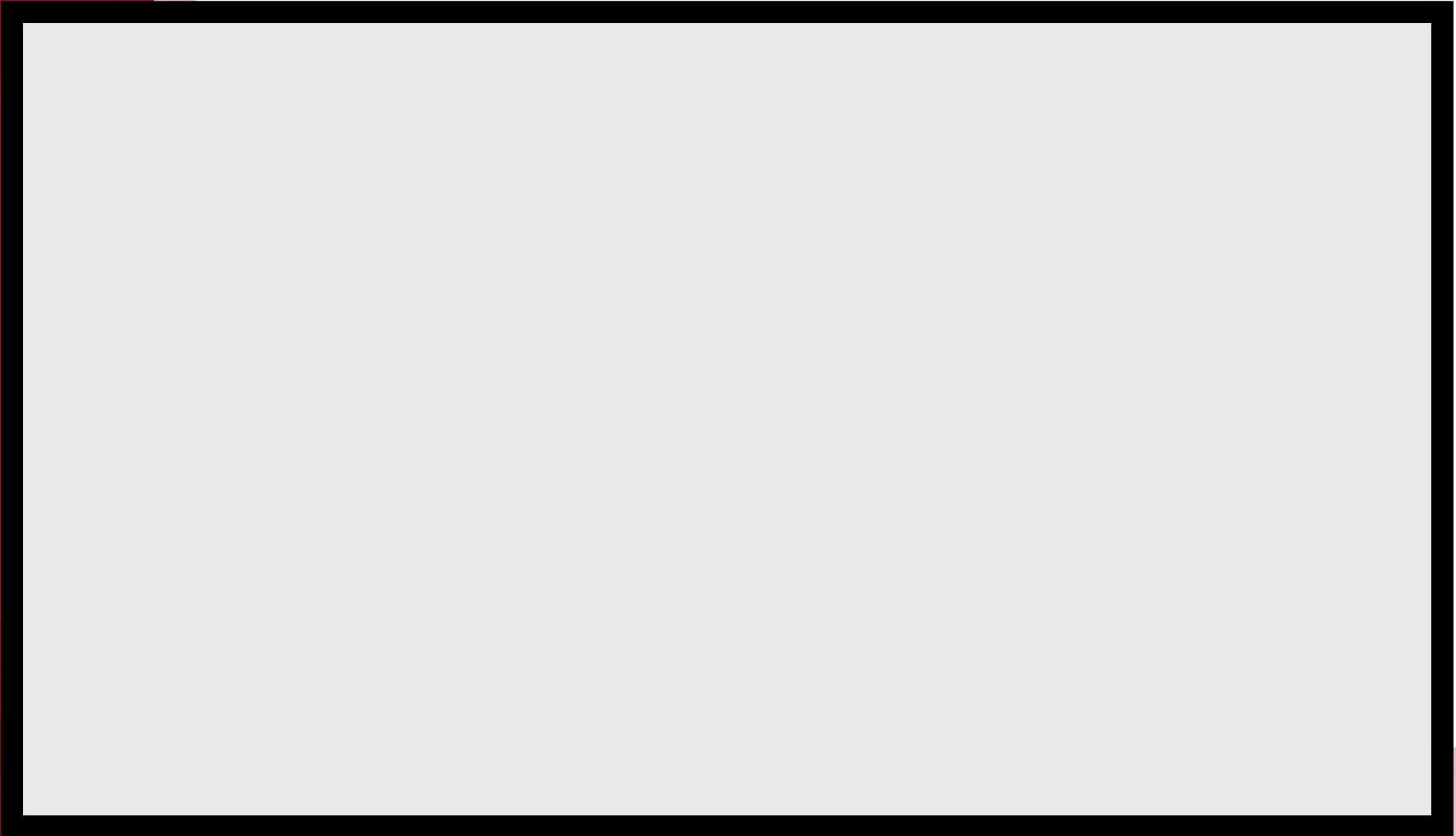
Case Study for V.H.

- **49 y/o with MS &** Generalized weakness – Unable to easily type or control mouse on PC.
- **Pt Goal:** Decrease time and difficulty accessing the web.
- **With Dragon Software,** Pt decreased access time by 60 percent to compose and send email & search the web to order merchandise.



Dragon Dictation

(video)



Case Study for G.P.

- **54 y/o, MS** with right side weakness, fair memory & no prior computer experience.
- **Pt / Family Goal:** Use iPad to be able to write email, set reminders, listen to music and read (or listen to audio books).
- **With iPad:** Pt uses a hand-cuff to hold stylus pen & voice-commands to control device.
- **Device:** iPad with hand-cuff to hold stylus pen.
- **Features:** SIRI voice commands. (iOs 8 hands-free access if plugged into outlet – “Hey SIRI”).
- Memory support commands: “Do I have any mail.” Do I have any appointments or reminders.” Can you remind me at 4:00 pm to feed the cat.”



Tablet/Phone: Voice Commands for Cognitive Support

**Set Reminders and Update
Task and To-Do Lists Using
Siri**

imore.com mini How To

Set reminders by voice



Emailing & editing by
voice



**By Voice You also
can:**

Open & play music

Open apps

Ask most questions.

Locating someone

Case Study for S.D.

- **Duchene's Muscular Dystrophy**
College Student with limited use of just thumbs and index fingers
Activated by magnet switch.



Uses the Q2 No Buttons Blue Ant headset to make & receive phone calls, email and text messages to his smartphone.



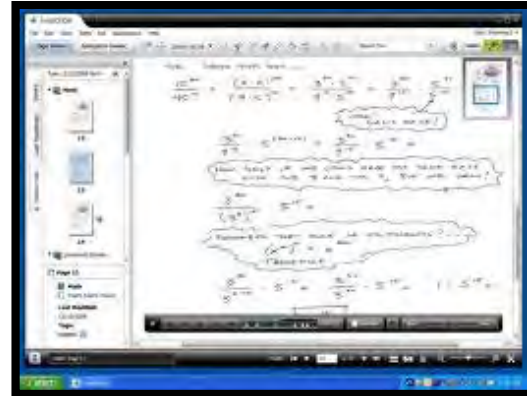
BlueAnt Q2 Headset

BlueAnt
Geek Speak



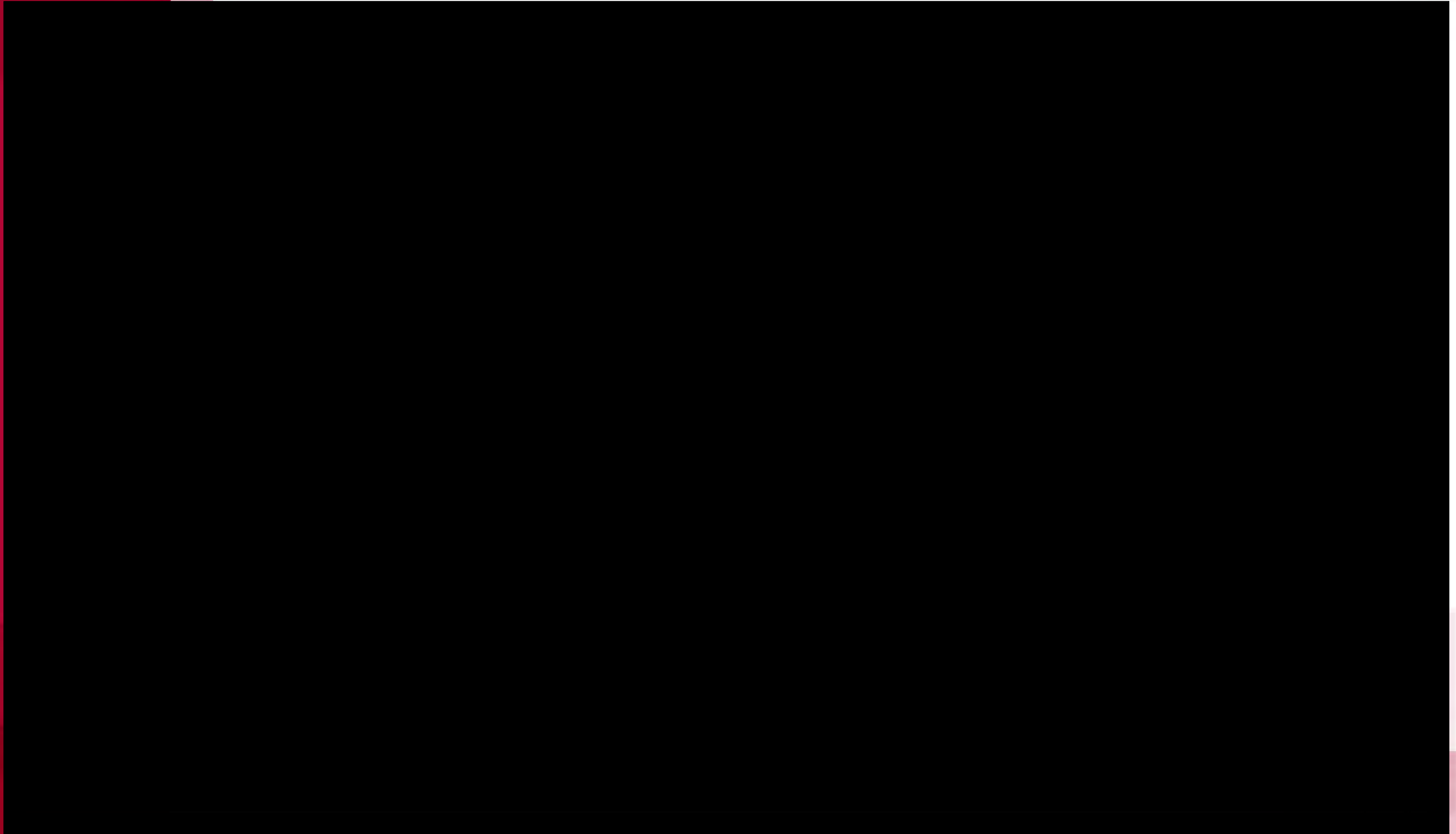
Case Study for O.P.

- **50 y/o TBI** with memory deficits and UE tremors weakness/pain.
- **Pt's Goal:** Decrease difficulty with handwriting /note-taking at meetings.
- **Pt is able to take minimal notes** and can recall missed info from audio recording.
- **Pt can upload a digital copy** of recording to Evernote.com account.



Livescribe 3 for iPad

(video)



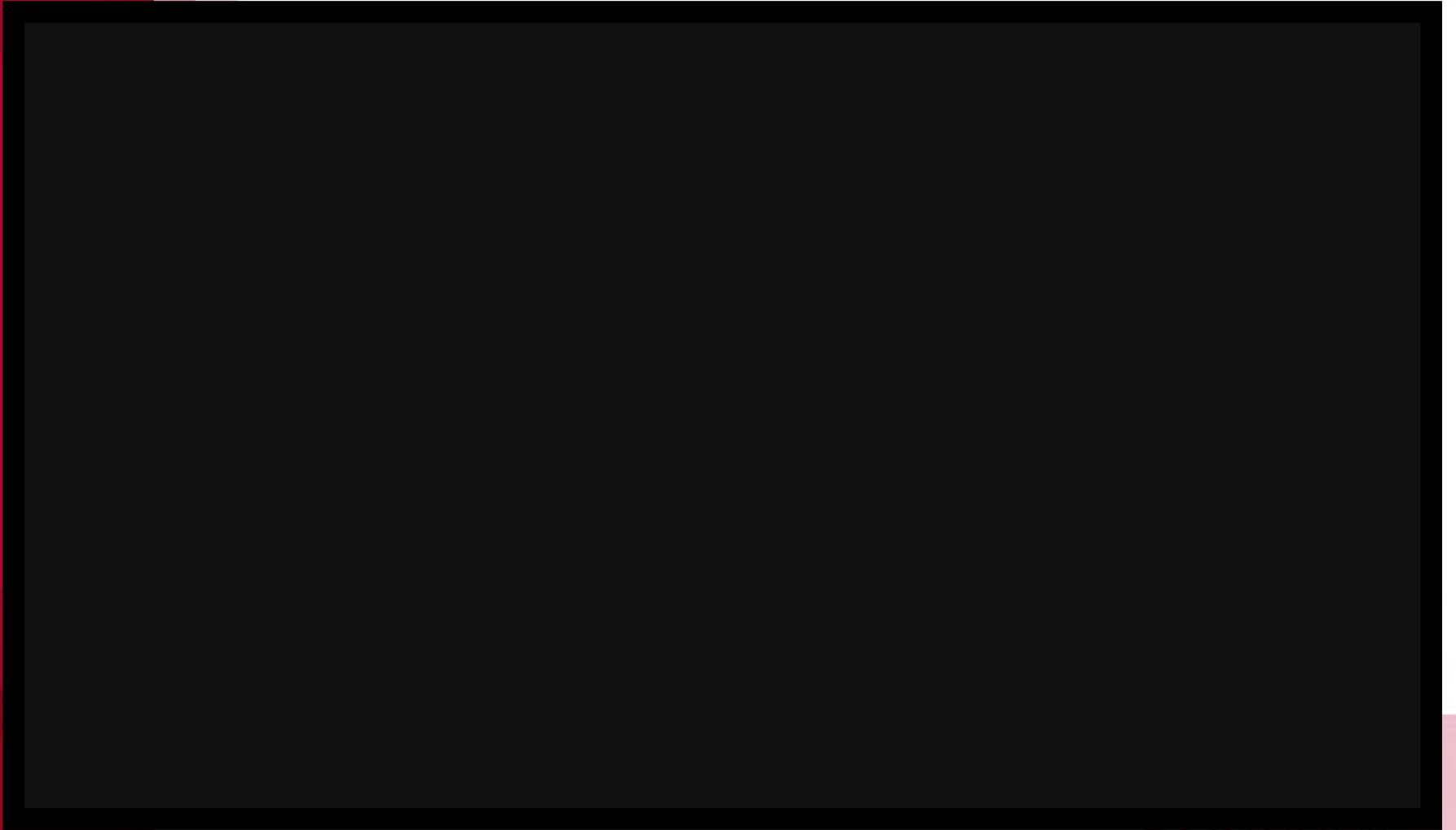
Case Study for M.C.

- **M.C.** – Blind with diminished IQ, group home resident, enjoys music and old TV shows-Has a very large collection of vinyl records and video tapes
- **Patient / Group Home**
Goal: Identify appropriate A.T. to consolidate collection and decrease staff dependence/increase pt independence



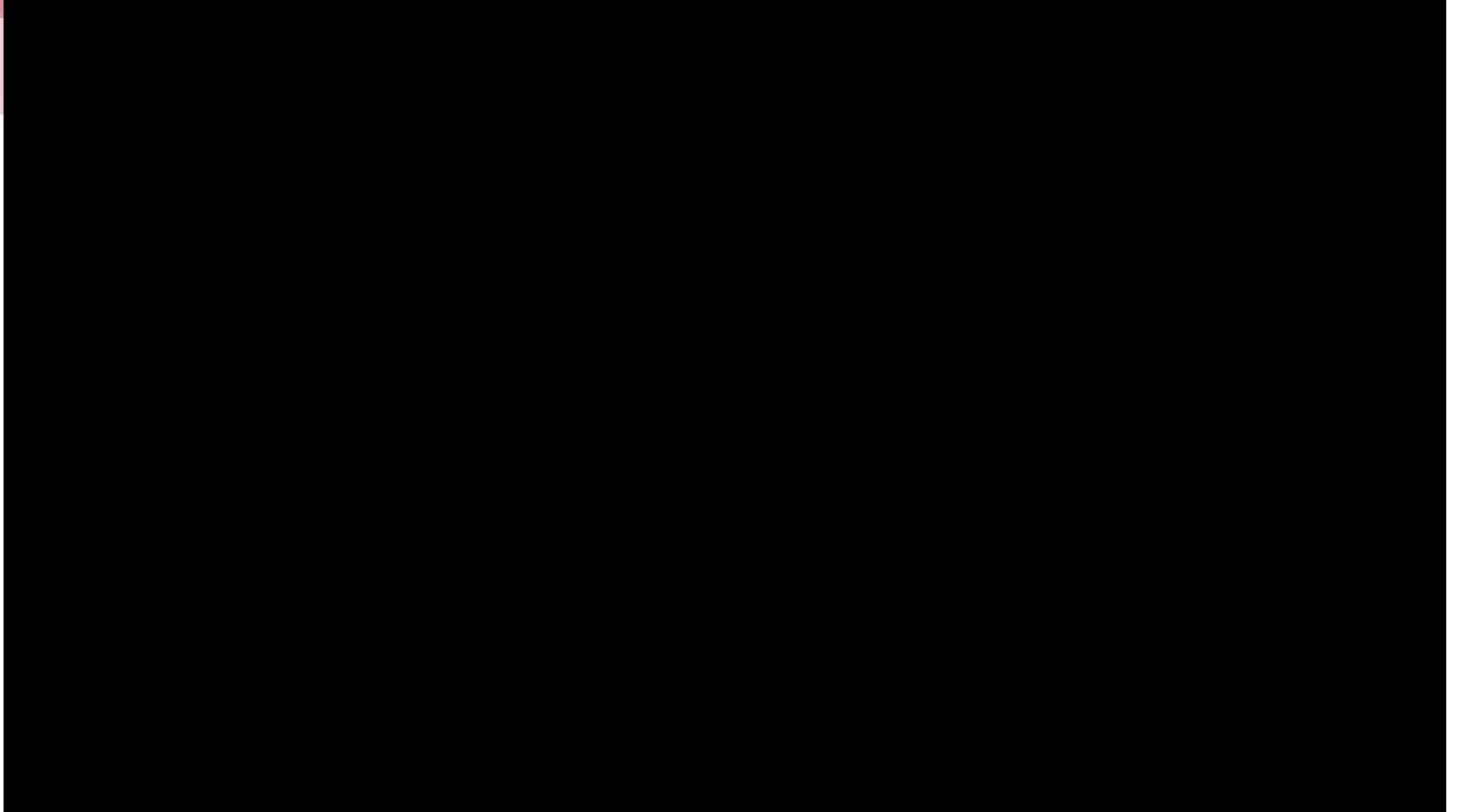
Voice Over on iPad

(video)



Braze Mobility Sonar System

- Obstacle Avoidance System for W/C's



Support for use of Assistive Technology (AT):

- Pennsylvania's Initiative on Assistive Technology (**PIAT**)
- Provides PA Residents Assistance, Information and Training on AT.
- 10 Resource Centers across the state- all counties served.
- 800-204-7428 in PA
- 215-204-1805

<http://disabilities.temple.edu/programs/assistive/piat/>



PIAT AT Lending Library

- Primary lending library in Johnstown
- 4000+ products
- Free to PA residents
- Devices are delivered and picked up
- 2-8 week short term loan depending on device
- Goal is to try the most appropriate device prior to making a decision

A.T. REEP Program

- **Reused and Exchanged Equipment Partnership-REEP**
 - Free online classified ads for free A.T.
 - Puts AT equipment not being currently used into new hands
 - Facilitates equipment exchange between individuals
 - Not for vendors or distributors
 - Can be used to post any type of AT that helps people with disabilities live better lives.
 - Medical supplies not typically accepted include ventilators, catheter supplies and oxygen equipment. Nothing accepted with safety or infection risk.
 - User must register to use website for equipment exchanges & pay small fee for S & H.

TDDP

- Telecommunication Device Distribution Program
- Free telecommunication devices for:
 - PA Residents with hearing, vision, cognitive, physical disabilities
 - Must qualify financially
 - 6 years old and older
 - Must have current Landline service

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GOOD SHEPHERD REHABILITATION

850 SOUTH 5TH STREET

ALLENTOWN, PA 18103

610-776-3247

Dsaltzer@gsrh.org

www.goodshepherdrehab.org



Resources

- www.livebinders.com
- www.tarheelreader.org
- www.learningally.org
- www.nuance.com
- www.livescribe.com
- www.apple.com
- www.kurzweilededu.com
- www.donjohnston.com
- www.bookshare.org
- www.ablenetinc.com
- www.http://nobuttonsheadset.com
- www.Evernote.com

Additional resources

Family Center on Technology and Disability: <http://www.fctd.info>

Abledata: <http://www.abledata.com>

AbleNet: <http://www.ablenetinc.com>
<http://udltechtoolkit.wikispaces.com> – free technology toolkit

www.livebinders.com – resource for AT, Education, and Ipads.

www.pinterest.com/lasenders - excellent ipad resource

www.otswithapps.com – app resource

www.quixey.com – search engine for apps

Adaptive Computer Access Post Test

- **What three conditions would limit a patients use of computers, tablet or smart-phone?**
 1. People with mental health, alcohol or abuse problems that communicate with their counselors with email.
 2. People with multiple sclerosis, cerebral palsy or a spinal cord injury who have impaired hand function or cognitive challenges.
 3. People with developmental delays that do not like computers, tablets or smart-phones.
 4. None of the above

- **What are three different ways to adapt a computer, tablet or smart-phone to make it more accessible?**
 1. On-screen keyboards for people who can not type but can use a mouse.
 2. Software/apps that allows a person to speak into a microphone and dictate their ideas on computers, tablets and smartphones.
 3. Programs that read the screen and text so that people with visual impairments can read.

All of the above