AzTAP Presentation – Assessing Portable Technology Solutions for Braille or Large Print Readers

Scenario 1: Amy – High School Student

Background Information: Amy has low vision that requires letters to be magnified to approximately 1.5”. Her course of study includes all subject areas. Some of her classes include labs. Most of her teachers use PowerPoint presentations. Most of her books are in print. Some of her teachers have their own websites where they post assignments. Several classes require research. Amy experiences visual fatigue and sometimes gets headaches when reading for extended periods of time.

What additional information will you gather?
What factors need to be considered?
What are some potential solutions?
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Scenario 2: Paul – DMV Counter Agent

Background Information: Paul has been legally blind his entire life. He has used various magnifiers throughout his education with success. He has a new job as a counter agent with Department of Motor Vehicles. His job is to work the windows with customers, processing their paperwork for driver’s licenses, I.D. cards, etc. He moves to a new window every hour.

What additional information do you need to gather?
What factors need to be considered?
What are some potential solutions?
Scenario 3: Ellen – retired homemaker

Background Info: Ellen is 75 years old. Her vision has declined recently so that she is having difficulty doing many of the tasks she enjoys. She lives alone in a house with a den, a kitchen and a bedroom with a small desk. She prizes her independence in cooking, paying her bills, and reading her mail. She enjoys watching t.v. and loves to read. She has an extensive collection of recipes and cookbooks she is no longer able to easily see.

What additional information do you need to gather?

What factors need to be considered?

What are some potential solutions?
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Scenario 4: Ben – College Student

Background Info: Ben is a proficient braille reader, computer user, and iPhone user. He is studying history. All assignments and books are stored and shared in the cloud, including PowerPoints for daily lectures. Tests are generally taken on the computer, but occasionally there are pop quizzes disseminated in print.

What additional need do you need to gather?  
What factors need to be considered?  
What are some potential solutions?  
How would your answer change if Ben was a newer braille reader reading at 10 words per minute.
Scenario 5: Susan – Lawyer

Background Info: Susan is a family law lawyer. She is a proficient braille reader. She has a PC computer on her desk, an iPhone for work, and a separate iPhone for personal use. She frequently visits clients off-site in their homes or place of business. She also attends court hearings where she needs access to case files, personal notes, and online legal briefs.

What additional information do you need to know? 
What factors need to be considered? 
What are some potential solutions?
Scenario 6: Angie – Customer Service Representative

Background Info: Angie is totally blind and a proficient braille reader. She works as Customer Service Representative for a catalog company. Much of the information she needs to access for her job is on a PC computer. The format of the screens is complex and there is a lot of numerical data. She sometimes needs to look up other information from the internet while on a call, or access her own personal notes. She also attends monthly training classes on new products. Most of the presentations are delivered with PowerPoint.

What additional information do you need to gather?

What factors need to be considered?

What are some potential solutions?
Video Magnifier Checklist

- What functional tasks does the user need to complete?
- Does the user need enlarged access to print documentation and/or objects?
- What size magnification is required to read text? How long can the reader read at that size before visual fatigue sets in?
- What color combinations work best?
- Does the user have enough visual acuity and visual stability to use magnification alone?
- When magnified to size for comfortable reading, does the user’s reading speed and comprehension support the efficient accomplishment of necessary tasks?
- Does the user need magnification in a variety of settings?
- Does the user have space restrictions?
- Does the user need to access print documents and/or objects while standing?
- Does the user need to see print information and/or objects across a room?
- Does the user need access to print information or objects when away from a power source?
- Does the user need to be able to set up the device and have immediate access quickly?
- Does the user require or benefit from a simple user interface?

Other factors for side-by-side comparison:

- Image quality
- Ease-of-use
- Quality of construction
- Size and weight
- Professional look of unit
Electronic Braille Display Checklist

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Factors in considering an electronic braille display:

- Is the user proficient in braille?
- Does the user need to edit documents for work or school?
- Does the user work with a lot of numerical information?
- Does the user have a job that requires access to phone and computer simultaneously?
- Does the user need to access notes while talking, as in a presentation or on a call?
- Does the user perform tasks on their electronic devices where precision and accuracy are important (i.e. computer programming, customer service)?
- Does the user have a hearing impairment that makes using speech output difficult?
- Does the user’s learning style support tactile acquisition of info instead of/or in addition to auditory processing?

Has the user used an electronic braille display before?

- What tasks does the user need to accomplish?
- What technology tools does the user want/need to access? (i.e. computer, iOS device, Android)
- What mainstream applications does the user need to access?
- Where and when does the user need to access these devices? (i.e. at home, in transit, in meetings, at a desk at work, in a classroom)
- What does the user’s workflow look like? (i.e. Does the user need access to multiple devices simultaneously?)
- Is access to mainstream applications important for work or school?
- What screen reading software does the user use (i.e. JAWS, VoiceOver)?
- What training and training materials are available to assist in learning the device?

Comparing products side by side (3 categories of braille displays):

1. Braille display only (i.e. Vario 340, Brailliant, Super Beetle, Focus)
   a. Most simple interface – relies completely on connection to external devices and software to work
   b. No internal memory or stand-alone capabilities
   c. Number of Bluetooth connections varies from device to device

2. Braille notetaker (i.e. Pronto, Braille Sense, BrailleNote)
   a. Best for students or adults who want to do most of their computing tasks from a single, dedicated device with braille integrated (i.e. email, calendar, internet browsing, word processing)
   b. Generally only have one Bluetooth connection at a time
   c. Built in speech
   d. May not be best solution for individuals who heavily use an iPhone or Android for email, calendar, internet browsing

3. Smart Braille Display (i.e. VarioUltra, Braille Edge)
a. Hybrid between above options (VarioUltra falls into this category)
b. May or may not have multiple simultaneous Bluetooth connections (VarioUltra has 4)
c. Internal memory for storing documents, taking notes
d. No WiFi – email and internet accessed through connection to external device

e. May or may not have speech built-in
f. Best for individual who wants braille access to external devices (i.e. iPhone, Android, computer) while having ability to take notes, access documents stored internally when not connected to external devices. Most flexible solution for working professionals and post-secondary students

Factors to consider (preferences and priorities will defer from individual to individual):

- Size and weight
- Quality of braille
- Quality of construction
- Quietness of keyboard
- Layout of keyboard
- Joystick for navigation?
- Built-in speech

When VarioUltra is a good fit: need to access multiple Bluetooth devices, need for portability, preference for accessing calendar, email, mainstream apps from cloud (accessible from iOS/Android device and computer) as opposed to on a dedicated device, desire to read books or take notes independent of connection to other devices, desire to jump between active documents in notetaker and connected device, preference for quiet keyboard, braille skills sufficient to use braille without speech when in notetaker mode