

Translating AT Assessments for Teachers:

Paul Reid
NorQuest College

Presentation:
LDAA Red Deer Conference
Learning Disabilities Association of Alberta

November 24, 2011

Common Questions

- What does having an AT Assessment Mean?
- Who should get an AT Assessment?
- When should a student get an AT Assessment?
- How can an AT Assessment be Implemented?

What is Assistive or Adaptive Technology?

Assistive technology is a generic term that includes assistive, adaptive, and rehabilitative devices and the process used in selecting, locating, and using these devices.



Why is AT important?

- ✓ increases levels of **independence**
- ✓ improves quality of life
- ✓ increases productivity & enhance performance
- ✓ expands educational/vocational options
- ✓ increases success in regular education settings
- ✓ reduces amount of support services needed
- ✓ reduces anxiety and stress

What is an Assistive or Adaptive Technology Assessment ?

- An AT assessment answers the question: Which technologies and strategies can I use to improve my functioning?
- A formal AT assessment is provided by someone who is recognized as a provider of AT services often by public and private funding agencies.



Who should get an AT Assessment?

When should a student get an AT Assessment?

Who? & When?

The obvious answer is a student **who** has a disability **when** that disability inhibits their ability to learn or participate.

The real question is how do you decide in a fair, and transparent manner in these political and economic times?

Principles for Determining Assistive Technology Assessment, Equipment and Training

At NorQuest College Centre for Excellence in Learning Supports we have identified conditions that may indicate an AT assessment is advisable:

1. A student whose disability-related academic barriers will not be effectively addressed through seeing a strategist, getting Alternate format, and/or using the usual suite of small equipment (i.e. Franklin, voice recorder, etc) and RWG.

Principles for Determining Assistive Technology Assessment, Equipment and Training (continued)

2. A student who has been attending classes for a period of time (?) and who may be under performing due to previously un-addressed disability related academic barriers which are unable to be addressed via other CELS Services (strategist, Alternate format, exam accommodation, etc.)
3. The severity/complexity of the disability(s) (i.e. blind/low vision, quadriplegic, multiple disabilities, etc.) might make a full AT Assessment advisable.

Assistive Technology Assessment: Where do you begin?

- A teacher, parent, registered psychologist or an AT specialist might advise the use of specific Assistive Technologies for Learning
- Families might be excited by the range of AT and want to move forward and buy something on their own. But should they?
- A key step in the process of linking individuals to assistive technology is sometimes overlooked: **evaluation**.

What should determine the selection of AT?

It is a complex process. It can be made simpler with the use of models like the SETT model developed by Joy Smiley Zabala, Ed.D.

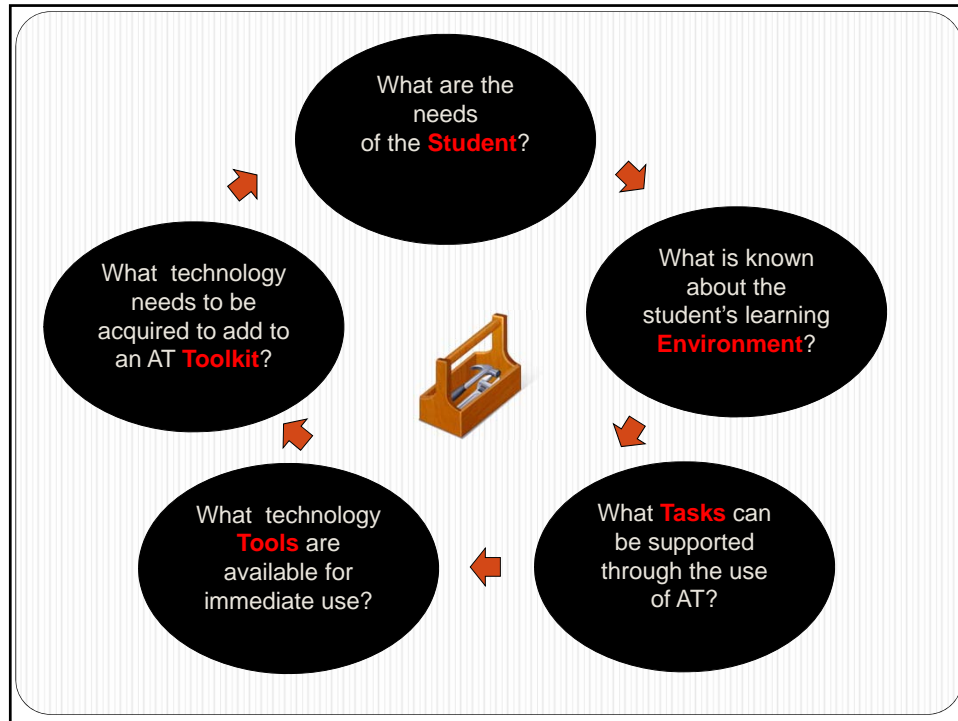
- “The SETT Framework is a four part model intended to promote collaborative decision-making in all phases of assistive technology service design and delivery from consideration through implementation and evaluation of effectiveness.”*

*<http://www.joyzabala.com> 2011-11

What should determine the selection of AT?

- “SETT is an acronym for **Student, Environments, Tasks, and Tools**. Although the letters form a memorable word, they are not intended to imply an order, other than that the student, environments, and tasks should be fully explored before tools are considered or selected. Some people have tried to explore the first three separately and in order, however, that is nearly impossible because the first three are closely linked.”*

*<http://www.joyzabala.com> 2011-11



AT Evaluations

Some Considerations

- Specific AT recommendations **MUST** be tailored to the particular individual.
- The evaluation process must help determine which AT will be the most appropriate & effective to meet the demands of specific tasks in specific contexts.
- Evaluations should be comprehensive to identify all of an individual's skills, needs, and routines; however, often evaluations can be varied.

AT Evaluations

Some Considerations

- AT devices are frequently abandoned for many reasons (AT neglect).
- Sometimes AT selection is based on a mismatch between the individual's desires and/or needs.
- Sometimes the individual outgrows the capabilities of the device

AT Assessment Process: Using TAGs

Technology Application Groupings (TAGs*) can serve as a framework for evaluation

- Vision
- Communication
- Mobility
- Cognition



* Tom Sheridan – University of Alberta

TAG: Vision

Impact area –
NO ability or limited
ability to:



- Read regular print
- Skim and scan text
- Take notes in class
- See images (moving and still) on computer screen or in classroom
- Read black print on white background
- Keep print from seeming to move
- Distinguish colours/gray scale

TAG: Communication

Impact area –
NO ability or limited
ability to:



- Complete timed assignments within the standard time (e.g., exams)
- Take notes in class
- Answer questions in class
- Make oral presentation
- Maintain visual contact with the lecturer
- Perceive incidental sounds
- Keep up with the discussion in terms of timing (time delay)

TAG: Mobility

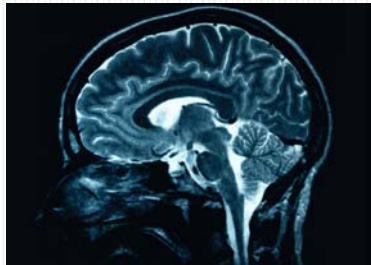
Impact area –
NO ability or limited
ability to:



- Turn pages
- Handwrite
- Keyboard
- Hold mouse
- Carry books
- Take notes in class
- Write on blackboard
- Adapt to specific seating and positioning
- Access library materials

TAG: Cognition

Impact area –
NO ability or limited
ability to:

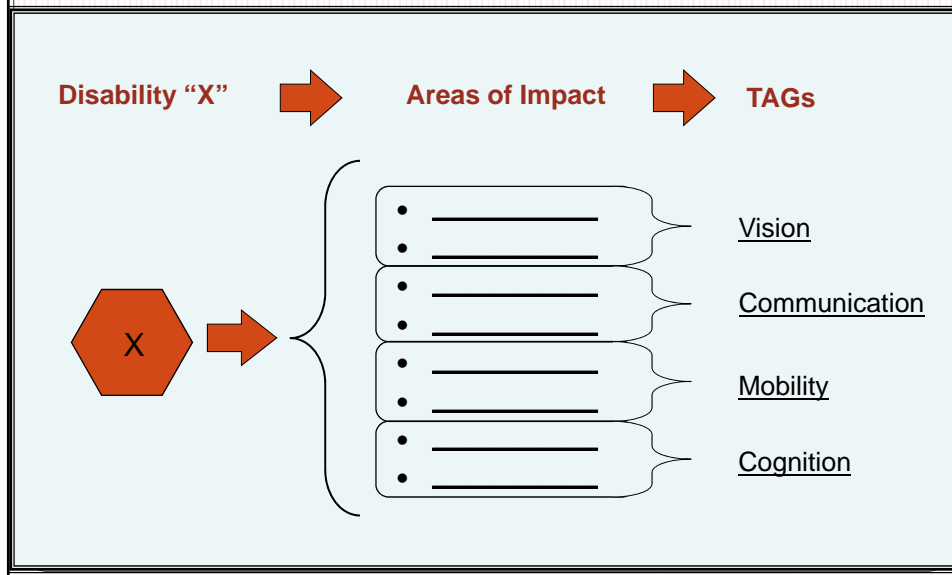


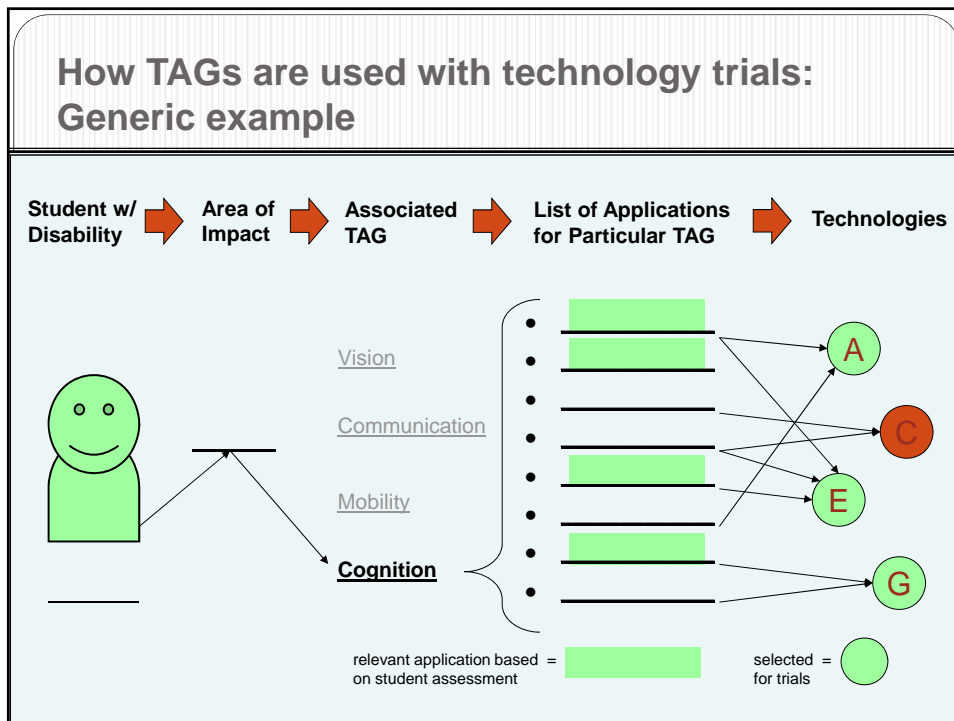
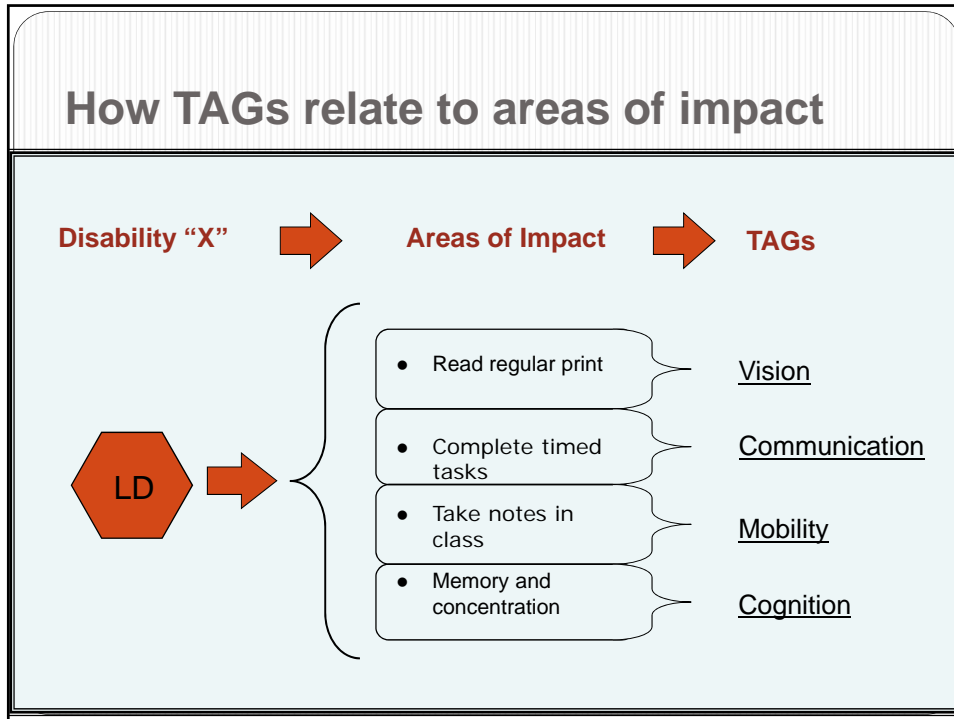
- Articulate thoughts / write
- Recognize words in isolation or sound out words
- Comprehend written material
- Recognize number order
- Attention and focus (reading, listening, task execution)
- Executive function (organization & time management, meet deadlines)
- Follow verbal or written instructions
- Memory
- Read black print on white background
- See print as stable on page

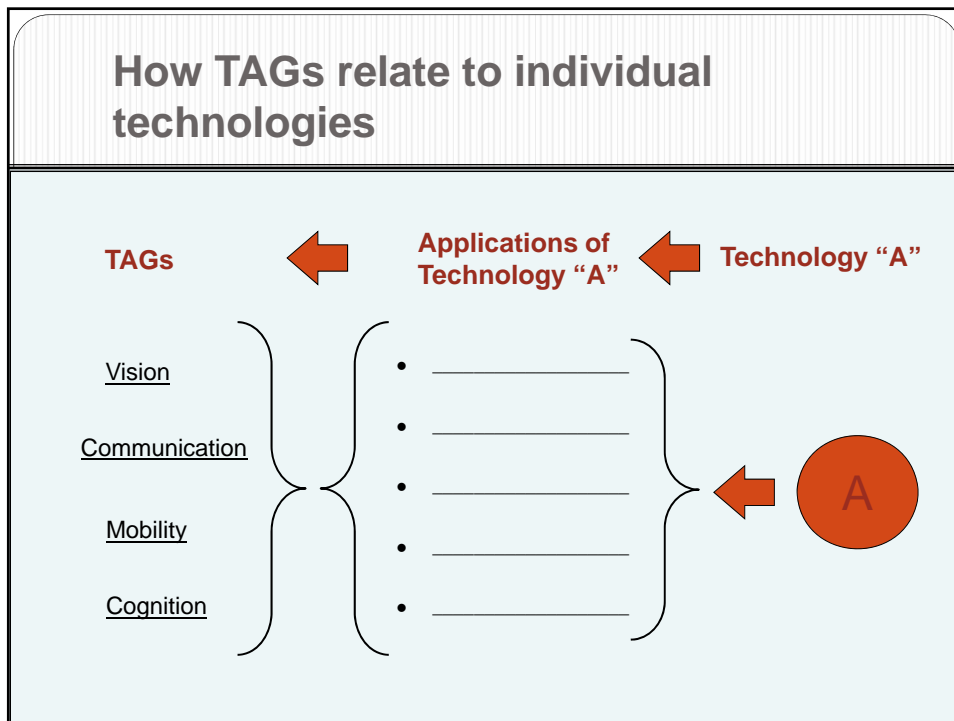
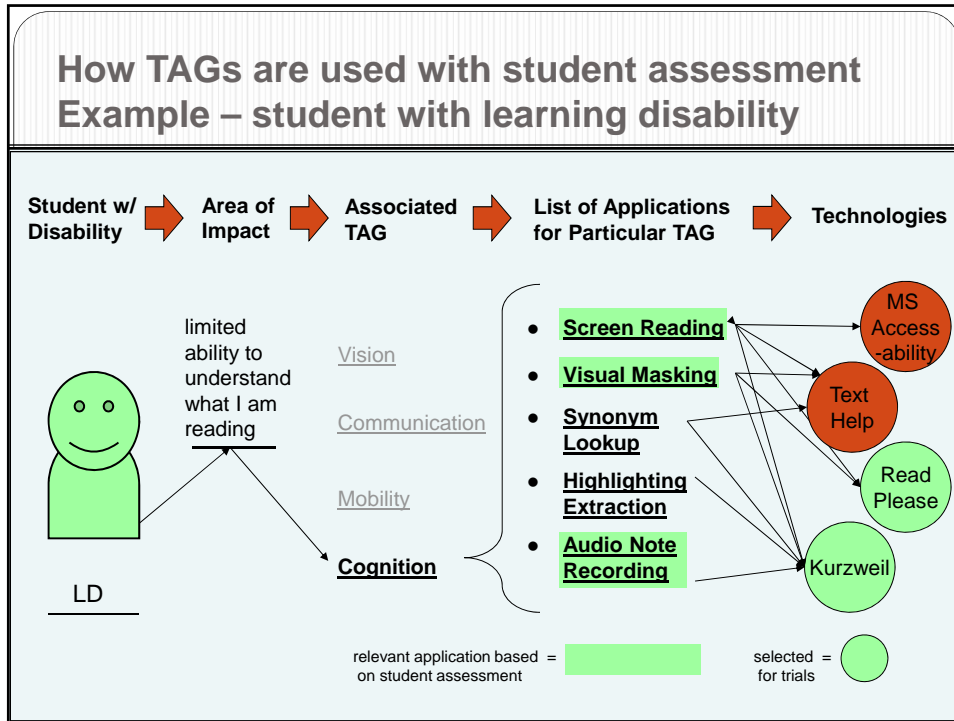
Focus on Learning Disabilities (LD)?

- LD is a classification including several disorders in which a person has difficulty learning in a typical manner.
- The disorder affects the **brain's** ability to receive and process information.
- This disorder can make it problematic for a person to learn as quickly or in the same way as someone who is not affected by a learning disability.
- LD is the most prevalent disability in the population with an incidence of conservatively 10 %
- It is a spectrum disability and manifests itself differently in each individual
- In 50 to 70% of cases co-occurs with ADHD

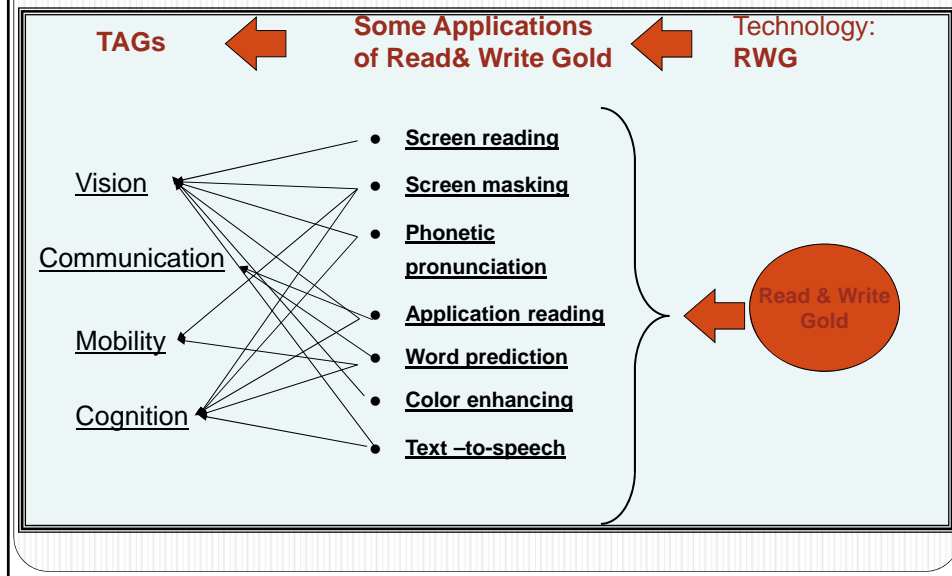
How TAGs relate to areas of impact







How TAGs relate to a individual technologies Example: Read & Write Gold



Generic AT Technology Solutions

May Help If You:

May Help If You:

- Have difficulty editing your work
- Have difficulty in any of the following areas: grammar, word usage, structure, spelling, style, punctuation and capitalization

Grammar Check and Proofreading software allows the user to check for possible errors in grammar, word usage, structure, spelling, style, punctuation and capitalization.

May Help If You:

- Have difficulty taking notes in class or at meetings

Digital Voice Recorder allows the user to record lectures, group discussions and personal notes. Special software will also allow the user to convert their personal dictation into text with the touch of a button.

May Help If You:

- Are a visual learner (like to see things)
- Have difficulty getting started, organizing, categorizing or sequencing ideas for writing

Challenging Concept Mapping software allows you to make visual representations or diagrams of your ideas, and "tie" the relationships between ideas. General programs allow the concept map to be transferred easily into a standard text setting, or you can create an outline and the software will generate the concept map. Concept mapping software is also very useful for creating flowcharts and other types of diagrams.

May Help If You:

- Have difficulty copying information/taking notes from texts (due to handwriting difficulties)

Portable scanners are hand held devices that allow users to scan text. The scanned text can then be downloaded into a computer, manipulated or printed. Some portable scanners also have audio output that allows the scanned material to be read aloud at the same time.

May Help If You:

- Have difficulty taking notes by hand
- Have limited computer skills/knowledge
- Have limited access to a computer
- Do not require all the power functions of a computer

Portable Word Processors/Keyboards are keyboards with small screens attached. A variety of models are available and some include audio output. Portable word processors allow the user to type information quickly and provide some basic word processing features such as spell check, grammar check and some limited formatting. Information entered into a portable word processor can be downloaded into a more powerful computer based word processor. These devices tend to be light weight and easy to transport.

May Help If You:

May Help If You:

- Have difficulty spelling
- Have difficulty with word usage (finding the correct word)
- Have limited vocabulary

Electronic Spell Checkers, Dictionaries and Thesauruses come in either computer based or portable versions. These products allow you to check the spelling of words and to obtain definitions, synonyms and homonyms of words. Several software packages as well as portable models have audio output that lets you hear the pronunciation, spelling, and definitions of words.

May Help If You:

- Have difficulty staying on track, as you write
- Have difficulty editing your writing, particularly in regards to correcting grammatical mistakes.
- Have good listening comprehension skills.

Text to Speech software highlights and reads text that appears on the computer screen. As the user types, text is highlighted on the computer screen and it reads to the user. In addition to general word processor features (spell check, grammar check), the user controls the reading speed, when the text is read (i.e., after each word, after each sentence) and how the information is highlighted on the screen.

May Help If You:

- Have trouble using the computer keyboard (typing)
- Have irregular non-phonetic spelling errors
- Have strong oral language skills and express your thoughts clearly and easily by speaking

Speech Recognition software allows the user to operate the computer by speaking to it. You speak into a microphone, which is either worn on a headset or mounted on the computer monitor, and your speech appears as text on the computer screen. This recognition software lets you operate the computer solely through speech but you can use the keyboard and mouse in addition to your voice.

May Help If You:

- Have trouble using the computer keyboard (typing)
- Have difficulty spelling

Word prediction/Abbreviation Expansion software predicts words that you are most likely to use based on the first few letters you type. You can also create abbreviations for frequently used words or phrases. These software products reduce the number of keystrokes required to produce written work.

AT Technology Solutions Low/Medium/High

- Low Tech
 - Tool kit (pencils, pens, grips, sticks, etc)



AT Technology Solutions Low/Medium/High

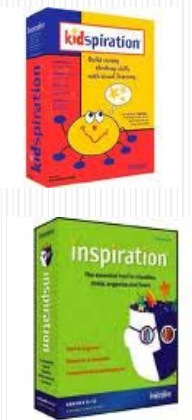
- **Medium Tech**
- Digital Voice Recorder
- MP3 Player
- USB drive
- External speaker
- E-dictionaries



AT Technology Solutions Low/Medium/High

High Tech


- Classmate
- Software




AT Check List: High–Low Tech Area of Impact: Organization

Organization		
Individuals may experience trouble Remembering information Keeping information together Time management Staying on task		
Low Tech Options	Medium Tech Options	High Tech Options
<ul style="list-style-type: none"> •color coded folders, exercises, or binders; •index tabs; •highlighters; •index cards; •graph paper; •ear plugs; •agendas; •address books; •day planners; •sticky notes 	<ul style="list-style-type: none"> •graphic organizers; •beepers/buzzers; •digital clocks; •talking watches; •hand held digital voice-recorders 	<ul style="list-style-type: none"> •electronic organizers; •calendar maker software; •prewriting software; •Post-it note software; •Personal Digital Assistants (PDA's) •Smart Phones

AT Check List: High–Low Tech Area of Impact: Organization





Assistive Technology Check List High-Low

Organization

Individuals who experience trouble:

- Remembering information
- Reading information together
- Task management

Low Tech Options	Medium Tech Options	High Tech Options
<ul style="list-style-type: none"> color coded folders, envelopes, or binders index cards highlighters graph paper address books dot planners sticky notes 	<ul style="list-style-type: none"> graphic organizers mind maps digital clocks, timers tasking software hand held digital voice recorders 	<ul style="list-style-type: none"> electronic organizers electronic reader software organizing software Photo note software Personal Digital Assistants (PDAs)

Mathematics

Individuals who have difficulty:

- Using formulas
- reading charts
- using graphing

Low Tech Options	Medium Tech Options	High Tech Options
<ul style="list-style-type: none"> memory managers graph paper index labels math paper overlays 	<ul style="list-style-type: none"> calculator paper calculator on computer large fonted calculator 	<ul style="list-style-type: none"> graphic calculators hand held talking calculators math note software Computer Assisted Instruction Software (CAI)

Reading

Individuals who have:

- word identification problems
- word identification difficulties
- problems with fluency

Low Tech Options	Medium Tech Options	High Tech Options
<ul style="list-style-type: none"> reading strategies marker 	<ul style="list-style-type: none"> change font size color overlays change background color digital highlighter digital dictionary digital word processor books on tape, CD, or e-books (digital format) 	<ul style="list-style-type: none"> reading pens electronic books CD-ROM books hand held reading devices reading software Digital Character Recognition (DCR) software Computer Assisted Instruction Software (CAI)

Abstracts

Individuals who have difficulty processing information:

- Abstracting/abstracting what was said
- trouble understanding what was said
- trouble differentiating between the content of letters or words

Low Tech Options	Medium Tech Options	High Tech Options
<ul style="list-style-type: none"> see page 1 	<ul style="list-style-type: none"> CD player digital recorder books on tape, CD, or e-books (digital format) 	<ul style="list-style-type: none"> synthesizer systems laptop computers word processors CD-ROM books electronic books multimedia with captions or subtitles

Visual Processing

Individuals who have difficulty processing information:

- may not recognize or write in cursive
- have trouble finding resources in their writing

Low Tech Options	Medium Tech Options	High Tech Options
<ul style="list-style-type: none"> adjustable lighting large print reading windows slide spacing color markers 	<ul style="list-style-type: none"> digital voice recorder electronic e-books 	<ul style="list-style-type: none"> alternate keyboards magnification hardware text reading software

Written Processing

Individuals who:

- have trouble physically writing
- have trouble spelling
- have punctuation problems
- miss up letter formations
- miss up word usage
- have difficulty organizing their ideas when writing

Low Tech Options	Medium Tech Options	High Tech Options
<ul style="list-style-type: none"> dot grid dot paper memory managers marker 	<ul style="list-style-type: none"> digital voice recorder CD player key pads electronic word checker spell or worded books synthesizer reading software phonics 	<ul style="list-style-type: none"> word processors voice to text software laptops talking word processor word prediction software alternative expansion software spell check grammar check proof reading program

Assistive Technology Solution Generic Example: Auditory Note Taking and Study

The following slide demonstrates the use of a number of common technology devices to address the following “areas of impacts” on a student with a learning disability

Areas of impact

- Difficulty taking notes in class
- Difficulty understanding what is read
- Difficulty remembering instructions

Assistive Technology Solution

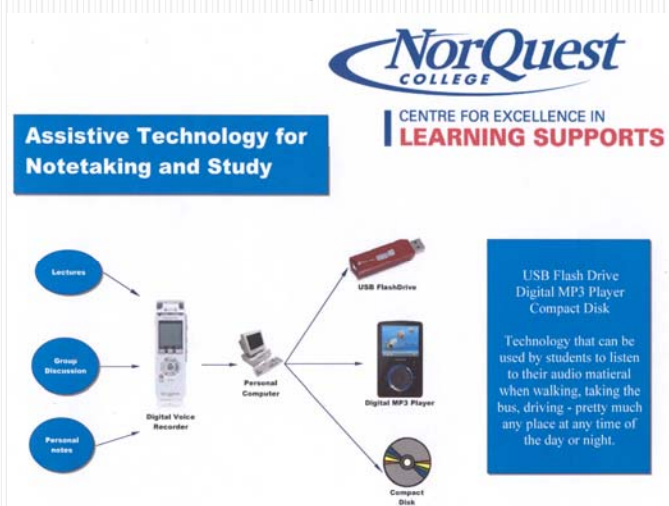
Generic Example: Auditory Note Taking and Study

This Adaptive Technology solution requires

- Digital voice recorder (Microsoft Windows compatible file format – WMA) (Olympus DVR ~ \$50.00 and up)
- USB Flash Drive (Min -2 GB ~ \$15.00 and up)
- MP3 Player (Min – 2 GB ~ \$30.00 and up)
- Access to a computer with appropriate software (i.e. school or library)

Assistive Technology Solution:

Auditory Note Taking and Study



Common mistakes when selecting AT

- Assume if it is new - it must work
- Assume if it is high tech it must work
- Assume what other students with the same disability are using will work for all students
- Too short an evaluation period (if at all)
- Inadequate training and support for the teacher as well as the student
- Buying what the student “wants” not what they need! (usually because every one else has one)

What do teachers need to know?

- According to disability advocates, technology is often created without regard to people with disabilities, creating unnecessary barriers to hundreds of millions of people.
- Technology now exists to remove most barriers.
- AT solutions are very individualized and often require a mixture of technology applications to address the area(s) of impact of the disability

What do teachers need to know? (continued)

- Universal Design for Learning and AT are closely related. The use of technology can be guided by the three principles of UDL and is aimed at supporting well designed curriculum goals that reinforce high standards for all students.
 - I. Provide Multiple Means of Representation*
 - II. Provide Multiple Means of Action and Expression*
 - III. Provide Multiple Means of Engagement*
- *CAST.ORG 2011-11 – iDevice Applet
- An AT solution is usually combined with one or more “Learning Strategies” depending on the type and/or areas of impact

What do teachers need to know?

(continued)

- Assistive/Adaptive technology can be divided/organized:
 - By technology application groupings (TAGs)
 - By area of impact
 - By technology categories – Low, Medium and High
- The best AT solutions are not necessarily new, high tech or expensive
- AT rejection is a problem if there is not buy-in from the student
- AT neglect is a real problem when the solution or strategy no longer fits the individual or the situation
- AT solutions must constantly be reviewed as the student changes and the technology changes



Want to learn more?

WEB SITES:

- Closing the Gap (also has a searchable database)
<http://www.closingthegap.com/>
- National Center for Research on Evaluations, Standards and Testing
<http://www.cse.ucla.edu/>
- Learning Disabilities and Attention Deficit Disorder Assessments
<http://www.iser.com/steps.html>
- Trace Research & Development Center, University of Wisconsin
<http://www.trace.wisc.edu/>
- Wisconsin Assistive Technology Initiative
<http://www.wati.org/>
- LD OnLine <http://www.ldonline.org/>
- Article Assessing Assistive Technology Needs of Children with Disabilities
<http://www.nasdse.com/AAATE%20Paper.html>