

Assistive Technology Strategies in Working with TBI

Curt Johnson, MS, CRC, ATP

**Rehabilitation Counselor II
Dept. of Rehabilitation Medicine
Univ. of Washington Medical Center**

A decorative graphic consisting of several sets of concentric circles, resembling ripples in water, located in the bottom right corner of the slide.

Assistive Technology (AT) is...

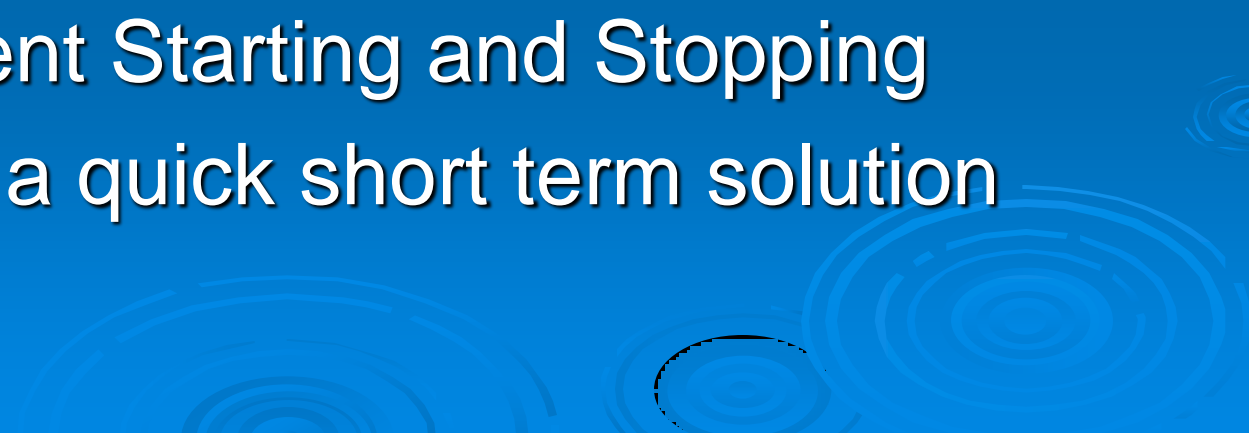
“Any item, piece of equipment or product system, whether acquired commercially, off-the-shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.”

Assistive Technology Act, 1998

Considerations

- Financial resources available to assist with TBI work barriers are on decline
- Use of AT to increase productivity and accuracy largely unrealized
- Use of AT conjures up thoughts of high ticket items, i.e. computers, AAC devices, etc.
- 80% of AT solutions cost less than \$100


Every Day Problems!!

- Just need a quick short term solution
 - Attaching a device or piece of equipment
 - Holding a device in place
 - Flexibility in positioning devices
 - Independent Starting and Stopping
 - Just need a quick short term solution
- 
- The bottom right corner of the slide features a decorative graphic of several concentric, light blue circles, resembling ripples in water, set against the solid blue background.

As Simple as Duct Tape

- Focus on functional outcomes and available resources
- Have outcome driven goals, not process driven or “same old – same old”
- Use creative problem solving or “color outside the lines”
- \$5 and 5 minute solutions may include: tapes, adhesives, fasteners, pipe, wire, etc.

5 Minute Solutions

- May not be permanent (Rapid Prototyping)
 - Are usually inexpensive
 - Materials found in-house or locally
 - Include consumer driven design
- 

Records Clerk

- Job Requirements: 1) frequent use of stapler and tape dispenser: 2) repair documents torn by mail room letter opening machine: 3) remove staples from documents
- Goal – Improve Productivity
- Problem
 - A. tape dispenser/stapler slides on desk top requiring a two hand activity
 - B. time consuming effort to ID, sort and tape damaged documents
 - C. Staple remover was difficult to manipulate

Records Clerk Recommendations

- Use shelf liner from break room or carpet tape under devices as non-slip
- Trial electric stapler and tape dispenser
- Use a “push” rather than “pinch-pull” staple remover
- Consult with mail room on envelope opener machine repair
- Tactfully discuss “preserve and protect” mentality with department head regarding task, process or equipment change

Computer Access

- Computer use is frequently an essential job function in most employment or educational settings
- TBI significantly impacts computer access through cognitive, motor and sensory barriers
- Increased function seen by incorporating color coding, sorting of messages by topic or cell phone applications such as JOTT www.jott.com

The Key

- Identify cognitive ability and computer interest through a good evaluation
- Identify best means of accessing a computer based on individual need, ability and environmental or employment context
- Use appropriate hardware and/or software for anticipated outcome

Background: Female, 26 y/o college student, S/P motor vehicle accident resulting in severe TBI (2004).

Goal: Resume computer activities, increase computer productivity/accuracy and hopefully return to work

Strengths include:

- Highly supportive family
- Motivated
- Some preserved new learning capacity
- Low average reasoning
- Good basic attention

Functional Deficits

- Mobility – quadriparesis
- Vision – ptosis (drooping eye lids) and double vision
- Communication – dysarthria
- Left Upper Extremity – limited use due to contractures and tremors
- Right Upper Extremity – dominant, but poor fine motor coordination
- Fatigue and Endurance
- Cognition – complex reasoning and complex visual stimuli

AT Solutions

- Flat panel monitor, mounted on arm
- WordQ (reading/typing assistant)
- Big Keys keyboard and keyguard
- Typing stick (left hand)
- Adjustable arm support (left arm)
- Joystick Mouse
- External switch for mouse click/drag
- ZoomText software – screen magnification
- Use of Windows accessibility options
- Use of **Bold** and 26+ font

Choosing AT

- Tech support available?
- \$back – warranties – guarantee
- Compatible with other AT – Mac vs PC
- Can it be funded – by who and how
- Who does training – expertise, how much or long
- Repair – who, turn around, shipping
- Changes over time

5 Minute Solution Resources

- Hardware Stores
- Bicycle Repair Shops
- Deep Discount Stores (Dollar Store)
- Goodwill, St. Vincent, etc.
- Garage Sales / Flee Markets
- Construction Site “Dumpster Diving”
- Local Manufacturing Companies
- Major Retail (Radio Shack, Target, Wal-Mart)
- “Ask Your Community”

Web Sites

- Washington Assistive Technology Act Program: <http://watap.org>
- University of Washington Center for Technology and Disability Studies: <http://uwctds.washington.edu>
- Job Accommodation Network (JAN) <http://www.jan.wvu.edu/>