Assistive and Accessible Technology—2014 and Beyond

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http://twitter.com/#!/EasterSealsAR

The Technology and Curriculum Access Center is a collaborator with the Arkansas Department of Education, Special Education Unit.

Technology and Curriculum Access Center, Easter Seals Arkansas A Little About Our Services

- Five core services
  - Assistive Technology Assessment
  - Consultation regarding access to curriculum and assessment
  - Consultation regarding assistive technology devices and services
  - Training
  - Loan System for Assistive and Educational Tech trials
- Arkansas partner in the regional Americans with Disabilities Act Network, Southwest ADA Center www.southwestada.org

Assistive Technology Device

- Assistive Technology Device--Assistive technology device means 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 the functional capabilities of a child with a disability. (34 C.F.R. § 300.5)

P.L. 108-446. The Individuals with Disabilities Education Improvement Act of 2004

Assistive Technology Services

- Assistive technology service means any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device. (34 C.F.R § 300.6) The term includes:
    - Functional Evaluation
    - Acquisition
    - Getting it working
    - Coordination
    - Training for Child, Family and Professionals

National Instructional Materials Accessibility Standard (NIMAS)

- 300.172(a)(1)

Adopt the NIMAS, published as appendix C to part 300, for the purposes of providing instructional materials to persons with blindness and visual disabilities or other persons with print or physical disabilities, in a timely manner after publication of the NIMAS in the Federal Register on July 19, 2006

(71 FR 41084)

Consideration for All Students

- IDEA 97 added the requirement that each IEP team consider the need for AT as part of the consideration of special factors.
  - 300.346 (a)(2)
  - The IEP shall... (v) consider whether the child requires assistive technology devices and services.

Neither the law nor the regulations provided guidelines for school districts in implementation of these requirements. This is largely the reason we see many school districts struggle to comply with the laws relating to assistive technology.

Bowser, G. & Reed, P. (2012). Education Tech Points: A Framework for Assistive Technology Planning. Winchester, OR: Coalition for Assistive Technology in Oregon, CATO.

What does this mean for individual districts?

- Every school district employee who works with student with disabilities has at least awareness level knowledge about what AT is and what it does.

- Every employee who works with student with disabilities and has contact with parents of those students, knows the law about AT, knows district procedures for obtaining assistive technology and assistive technology assessment, and how to initiate those procedures.

What does this mean for individual districts? (continued)

- All administrators understand and comply with the laws related to AT. They expect AT options to be available in all classrooms
- Specific individual at both the building level and district level have been designated with specific responsibilities related to AT and provided the necessary training, resources, and support to carry out those responsibilities.

Assistive Technology is only a tool....Good instruction is essential

- Assistive Technology Consideration
  - Consider the students abilities, strengths, and needs
  - Consider the environments
  - Consider the tasks and activities
  - Consider possible strategies and tools

Zabala, J. (2005) Using the SETT Framework to Level the Learning Field for Students with Disabilities. Lake Jackson, TX: www.joyzabala.com

- The SETT Framework is a tool that helps teams gather and organize information that can be used to guide assistive technology decision making.

Consideration and Assessment

- Duration and Depth differences
- Duration- a short discussion that takes place during the IEP process using known information and results in the decision to proceed to a next step.
- Assessment-Examines in detail students abilities, difficulties and demands of the environments and tasks and includes gathering new information
  - Assessment activities might include information gathering, decision making or trial use

Protocols for Assessment and Implementation

- WATI Assistive Technology Consideration Guide

  Gierach, J. (2009). Assessing Students' Needs for Assistive Technology (ASNAT). Milton, WI: Wisconsin Assistive Technology Initiative.

  www.wati.org

- Assistive Technology Implementation Planner

  Hasselbring, T. (2006). Assistive Technology Planner. Alexandria, VA: TAM Division, CEC.

  http://natri.uky.edu/index.html

- Matching Person and Technology

  Scherer, M.J. (2008). Matching Person and Technology. Webster, NY: Institute for Matching Person and Technology.

  www.matchingpersonandtechnology.com/

Protocols for Assessment and Implementation, Continued

- Functional Evaluation for Assistive Technology

  Raskind, M.H. & Bryant, B. R. (2002). FEAT. Port Chester, NY: National Professional Resources, Inc.

- Stages Assessment Software

  Pugliese, M. (2005). Stages Assessment Software. Natick, MA: Cambium Learning Group.

- Education Tech Points: A Framework for Assistive Technology Planning

  Bowser, G. & Reed, P. (2012). Education Tech Points: A Framework for Assistive Technology Planning, 3rd Edition. Winchester, OR: Coalition for Assistive Technology in Oregon.

Protocols for Assessment and Implementation, Continued

- Georgia Program for Assistive Technology

  Galenas, G. (2012). Considering Assistive Technology for Students with Disabilities. Atlanta, GA: Georgia Department of Education.

  http://www.gpat.org/Georgia-Project-for-Assistive-Technology/Pages/Considering-Assistive-Technology-for-Students-with-Disabilities.aspx

- Georgia Project for Assistive Technology

  Georgia Assistive Technology Tools for Life (2012). Tools for Life. Forest Park, GA: Authors. http://www.gatfl.org/

- Quality Indicators for Assistive Technology

  QIAT Leadership Team (2011). Quality Indicators for Assistive Technology Services Matrix. http://www.qiat.org/

QIAT Summit Participants 2011, Butler Center, Little Rock Public Library, Photo by Scott Marfillius

Let's Apply The SETT Concept to a Situation Associated with Access To the Computer

- Review student information
- Current computer access methods, if any
- Motor skills/ROM
- Vision
- Fatigue/Strength
- Attention
- Behavior
- Cognition
- Computer Skills

Environmental Considerations

- Number of classrooms
- Ratio of students to adults
- Workstation accessibility
- Computer operating system
- Software available
- Power sources
- Sound
- Lighting
- Expectations
- Does the student have any sensory challenges that impact computer use?

Tasks???

- Access educational software/special software
- Complete written products
- Navigate the Internet
- Take tests
- Math tasks
- Take notes
- Play games

Think Continuum

Positioning of student and equipment

Standard keyboard/mouse/pointer with accessibility features from operating system

Standard keyboard/mouse with adaptations

Rate enhancement

Alternate keyboard/mouse

Onscreen keyboard

Voice recognition

Eye gaze

Morse Code

Sophisticated switch scanning

Let's Apply The SETT Concept to a Situation Associated with AT for Writing, including Motor Aspects of Writing and Composition

- Know your student
- Physical factors
  - Tone, strength, postural control
- Visual perceptual
  - Discrimination, memory, spatial relations, visual form constancy, visual figure ground, closure
- Social Emotional
- Cognitive
- Organization/Executive Skills

Motor and Fine Motor Coordination

- Midline crossing
- Bilateral integration
- Laterality
- Praxis
- Grasp, Accuracy and visual-motor integration
- Caution should be used in abandoning writing treatment/intervention in the early elementary years.
- Grade 3-4, the team may want to consider scaffolds of technology
- 5th and up may be time to consider moving on to address production

Environmental Considerations

- Student to teacher positions
- Grouping and format of instruction
- Work station positioning
- Clutter accessibility
- Need tilt?
- Student accessible computer/OS?
- Is the student hyper or hypo sensitive to any stimuli?

Writing Tasks

- Writing assignments, format (close, yes/no, multiple choice, short answer, open response)
- Note taking
- Projects
- Tests
- Reading and Writing Supports

Think Continuum

- Environment and seating adaptations
- Pen/Pencil variety
- Adapted paper or pencils
- Writing templates
- Prewritten word/phrases
- Talking dictionary
- Word processor
- Computer with accessibility features
- Alternative keyboards
- Scanner
- Word prediction
- Voice Recognition

www.intellitools.com

www.franklin.com

Ayres, B. (2011). AT Evaluations: No Shortcuts to Good Outcomes.
Washington, DC: Family Center on Technology and Disability.

Think Continuum: Composition of Written Materials

- Picture supports
- Pictures from words
- Word cards/walls
- Portable dictionary/thesaurus
- Templates/guides   www.suncastletech.com
- Talking word processor
- Multi-media
- Format and citation tools
- Voice recognition   www.mayer-johnson.com

www.texthelp.com

Let's Apply The SETT Concept to a Situation Associated with AT for Communication

- Know your student

- Assess current communication modes

- Expressive/receptive language skills

- Communication interaction skills

- Access skills for physical and sensory

- Literacy skills

- Visual considerations

Environmental Considerations

- Communication partners
- Partner behaviors/attitudes
- Daily schedule
- Communication opportunities
- Technology availability
- Multiple systems/modalities
- Vocabulary to support environmental access
- Sensory challenges?

Communication Tasks

- Functions
  - Initiating
  - Continuing
  - Commenting
  - Ending
  - Repairing
  - Requesting
  - Denials/rejection
  - Exchanging information
  - Social etiquette
  - Social closeness
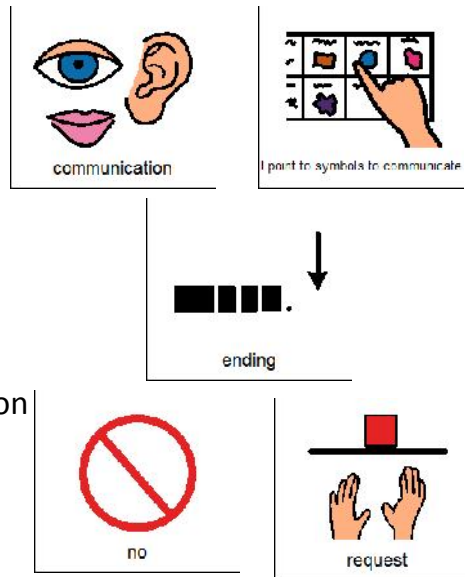
www.mayer-johnson.com

Think Continuum

- Concrete Representations
- Communication systems with pictures, symbols, letters and/or words
- Simple speech generating device
- Speech generating device with levels
  - Icon sequencing
  - Speech generation with a word based or phrase based
- Text based device with speech synthesis

Cumley, J., Maro. J. & Stanek, M. (2009). Assistive Technology for Communication.
      Milton, WS: WATI
Roman, A. (2012). E Tran Communication Method. San Francisco, CA: ALS
      Research Center.
http://www.youtube.com/watch?v=lfLuqGAxaz4&feature=related

Vantage Light
www.prentrom.com

DynaVox T10
www.dynavoxtech.com

PRC 1200
www.prentrom.com

Comm Board
www.mayer-johnson.com

DynaVox Maestro

CoWriter
www.donjohnston.com

SuperTalker
www.ablenetinc.com

Eye Transfer
www.enablingdevices.com

IntelliTalk
www.intellitools.com

Lingraphica
www.aphasia.com

Let's Apply The SETT Concept to a Situation Associated with AT for Reading

- Know your student
- Physical considerations
- Communication considerations
- Visual considerations
- Background knowledge and/or receptive communication
- Comprehension of text-read or listened to
- Phonemic awareness
- Sight vocabulary

Environmental Factors

- Reading requirements for different settings
- Distance from text
- Group size
- Visual clutter on page
- Lighting
- Computer operating system
- Current or past AT use

- Sensory challenges that impact reading, visual, auditory, tactile

Reading Tasks

- Standard Curriculum
- Modified Curriculum
- Community/Environmental Print
- Worksheets
- Tests
- Recreational
- Computer

Think Continuum

- Standard text
- Book adapted for access
- Low tech modifications to text
- Handheld device for reading text
- Pictures/symbols with text
- Electronic text
- Text reader
- Scanning and text reading
- Text reader with study skill support

Classmate Reader
www.humanware.com

ReadingPen 2
www.wizcomtech.com

Tar Heel Reader
www.tarheelreader.org

IRIS Pen
www.irislink.com

WYNN with Pearl Scanner
www.freedomscientific.com

Inspiration
www.inspiration.com

Let's Apply The SETT Concept to a Situation Associated with AT for Mathematics

- Understand your student
- Learning strengths
- Understands math concepts and mathematical notation
- Able to identify steps in problem solving?
- Reading abilities
- Ability to handle multiple steps
- Physical difficulties, fatigue
- Visual processing

Obukowicz, M. (2009). Assistive Technology for Mathematics. Milton, WI: WATI.

Environmental Factors

- Materials accessibility
- Manipulatives and e-text versions available
- Support for staff in mathematics
- Teacher or aide available to adapt or accommodate mathematics instruction

- Sensory challenges?—visual, auditory, tactile

Mathematics Tasks

- Gain fluency in reading mathematics
- Demonstrate ability to perform mathematics computation
- Align a problem and apply steps
- Write or draw a mathematical notation
- Apply math skill in context (purchasing, completing forms, check writing, balancing accounts, measuring, time telling)

Think Continuum

- Low tech tools for reading and writing
- Math manipulatives
- Low tech physical access-rulers, sta
- Abacus
- Adapted paper
- Adapted mathematics tools (calcul adapted time tools)
- Smart charts or math scripts
- Equation editor
- On screen calculator
- Alternate keyboard
- Virtual manipulative
- Math software
- Voice recognition math software

Math Line Products
www.howbrite.com

Let's Apply The SETT Concept to a Situation Associated with AT for Organization

- Know your student
- Organization of time, information or materials
- Self-regulation
- Cognitive characteristics
- Classroom issues
- Managing time
- Missing deadlines
- Poor use of work times
- Frequently late
- Messy, disorganized work areas
- Difficulty with getting started or prioritizing work tasks

Environmental Considerations

- Time?
- Organizational skills embedded in curriculum?
- Time between classes?
- Sufficient physical space?
- Study rubrics, learning grids?
- Structured work environment?
- Does the staff struggle with their own organizational issues

- Hyper or hypo sensitivity to visual clutter, lighting, noise, tactile stimuli, awareness of personal space?

Organizational Tasks

- Arrival?
- Materials ready for learning or performance?
- Organizational independence?
- Work area?
- Complete project successfully?
- Generate and manage multistep plans for longer projects?
- Develop their own organizational system?

Think Continuum

Information management

- Information Management
  - Tabs
  - Sticky notes
  - Highlighters
  - Handheld recorders
  - Key words
  - Study guides
  - Task analysis
  - Digital highlighters
  and sticky notes
  - Handheld scanners
  - Electronic organizing
  - Study grid generators
  - Online search tools
  - Online web trackers
  - File sorting tools
  - Digital graphic organizers
  - Online manipulatives, interactive, tutorials, animations

Time management

- Checklists
- Paper planners/calendars
- Schedules (visual)
- Portable, adapted time keepers
- Electronic reminders
- Digital planners
- Web based planning tools

Think Continuum

Material management

- Low tech organizers
- Checklists
- Container system
- Coding system
- Electronic filing and storage
- Portable electronic storage
- Computer-based tools

Feature matching

http://www.onionmountaintech.com

Sweeny, J. (2011). Organizational
Problems Inventory. Canton,
CT: Onion Mountain Tech.

Let's Apply The SETT Concept to a Situation Associated with AT for Positioning, Seating and Mobility

- Know your student
- Physical-muscle strength
- Stability sitting, standing or moving
- Endurance
- Current methods and materials for seating, positioning, mobility and transfer.

Environmental Considerations

- Where the student will need to move?
- Location demands—seating, positioning and workstations?
- Environmental preference?
- Support or assistance in any specific area.
- Sensory factors—visual, tactile or auditory

Tasks that may be required in seating, mobility and positioning

After Seated
- Use hands/extremities
- Activate and use devices or other learning tools
- Stay on task
- Work with materials and manipulative

Moving
- Get to and from
- Move around
- Participate in daily activities
- Support for independence
- Transfers, changing positions, and accessing mobility or other devices

Tasks that may be required in seating, mobility and positioning (continued)

Seating and positioning

- Correct height and depth
- Possible modifications to standard seat or desk
- Alternative chairs or seating supports
- Adaptations, slings, swings, t-chairs, balls, side lyers
- Wheelchair and/or seating insert

Mobility

- Using walking devices-crutches, standers, gait trainers or walkers
- Grab bars rails
- Operating manual Wheelchair
- Driving a scooter, cart
- Driving powered wheelchair with adapted controllers

Think Continuum

Mobility

- Walker
- Grab bars and rails
- Manual wheelchair including sports chair
- Powered scooter
- Powered wheelchair
- Adapted vehicle for driving

Position and Seating

- Non-slip surfaces
- Bolster, rolled towel, blocks for footings
- Adapted/alternate chair, sidelyer, stander
- Custom fitted chair or wheelchair

CEC (2006). Assistive Technology Consideration Wheel. Arlington, VA: Technology and Media Division
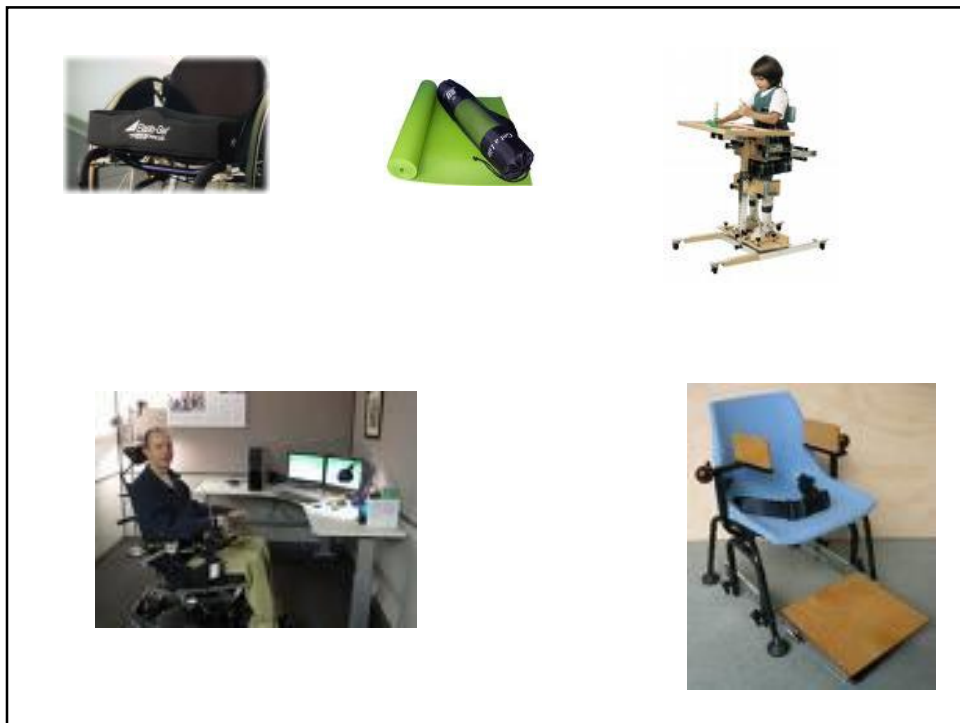
Let's Apply The SETT Concept to a Situation Associated with AT for Recreation and Leisure

- Know your student
- Interests, skills, familiarity, social motivation, knowledge of rules of games/sports
- Health and safety
- Physical limitations
- Ability to comprehend expectations or recreation or leisure activity

Environmental Considerations

- Access to adaptive equipment
- Knowledgeable staff
- Family and community support
- Transitions from one location/activity to another
- Sensory: wide variety of factors and variables, hard to predict

Tasks

- Music
- Drama
- Art
- Athletics
- Table games
- Play
- Technology

Think Continuum

- Toys adapted with Velcro, magnets, handles
- Switch operation
- Adapted sporting equipment
- Cuffs and holders
- Modified utensils

- Forearm supports for drawing or painting
- Electronic aids to operate media
- Art or music software
- Gaming
- Other recreation and leisure activities, (collections, hobbies, telecommunications, etc.)

Let's Apply The SETT Concept to a Situation Associated with AT for Low Vision, Functional Blindness, Cortical Vision Impairment

- Know your student
- Print size?
- Visual or tactile materials?
- Handwriting?
- Computer operating system?
- Touch Typing?
- Audio enhancement?
- Color?
- Photosensitivity?
- ADL's?
- Gym/recreation?
- Organization?
- Physical or motor skills

Environmental Considerations

- Desk space
- Classroom layout
- Location navigation
- Access for use of residual vision
- Types of learning media
- Types of light and illumination
- External noise
- Past or current assistive technology use

Tasks
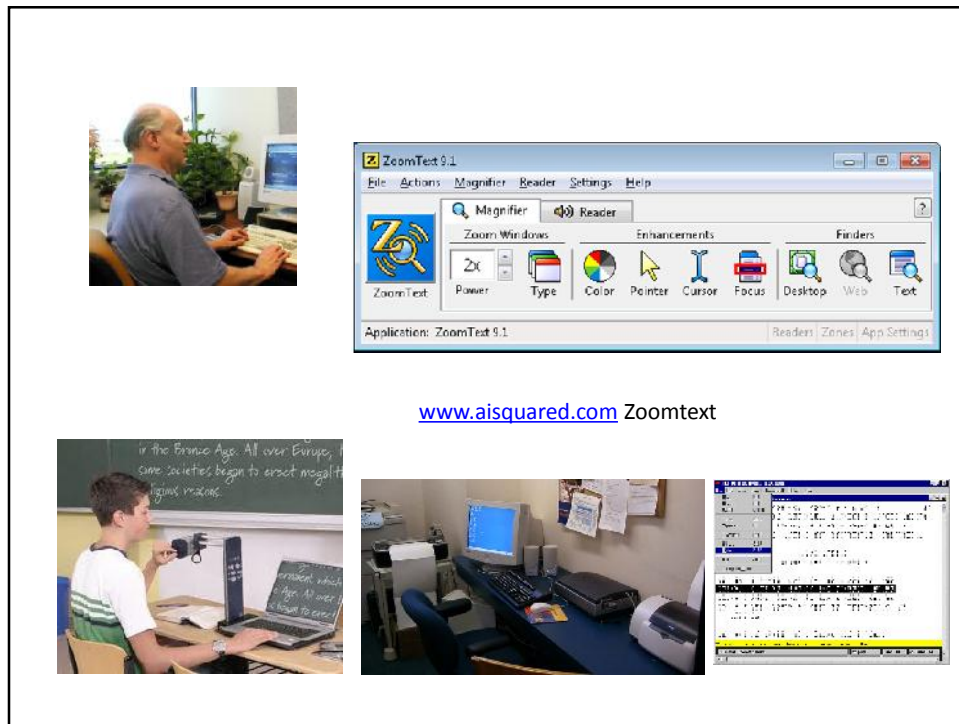
- Reading
- Writing
- Note taking
- Distance vision in large group
- Computer assisted
- Print, electronic or audio
- ADL's
- Orientation or mobility

Think Continuum

- Glasses
- Optical aids
- Large Print
- Auditory materials
- Dictation software
- CCTV
- Screen magnifier
- Braille
- Notetakers
- Embosser
- Computer
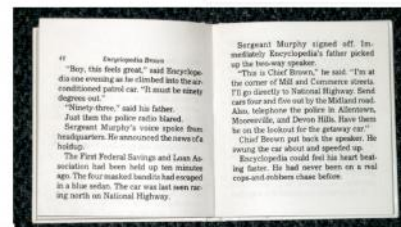
Victor Stream www.humanware.com

www.aisquared.com Zoomtext

Let's Apply The SETT Concept to a Situation Associated with AT for Hearing Impairments

- Know your student
- Assistive listening devices/personal
- Teacher/peer/announcements
- Alarms/warnings
- Telecommunications
- Information technology
- Person to person
- Group communication
- Note taking

Environmental Considerations

- Noise
- Acoustics of room
- Distance visually and auditorally
- Visual access (line of sight)
- Lighting

# Tasks

|	
Telecommunication	TDD; TTY; Speech Synthesis
Translation	Interpreter; software
Amplification	FM Systems; Personal Aids; Cochlear Implants; Sound Fields
Environmental Indicators	Visual; Tactile
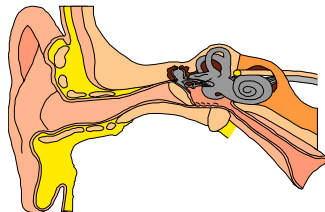
Think Continuum

- Pen and paper
- Computer or portable word processor
- TDD/TTY/VRS
- Signaling devices
- Closed Captions
- Phone amplifiers
- Personal amplification/hearing aids
- FM system
- Sound fields
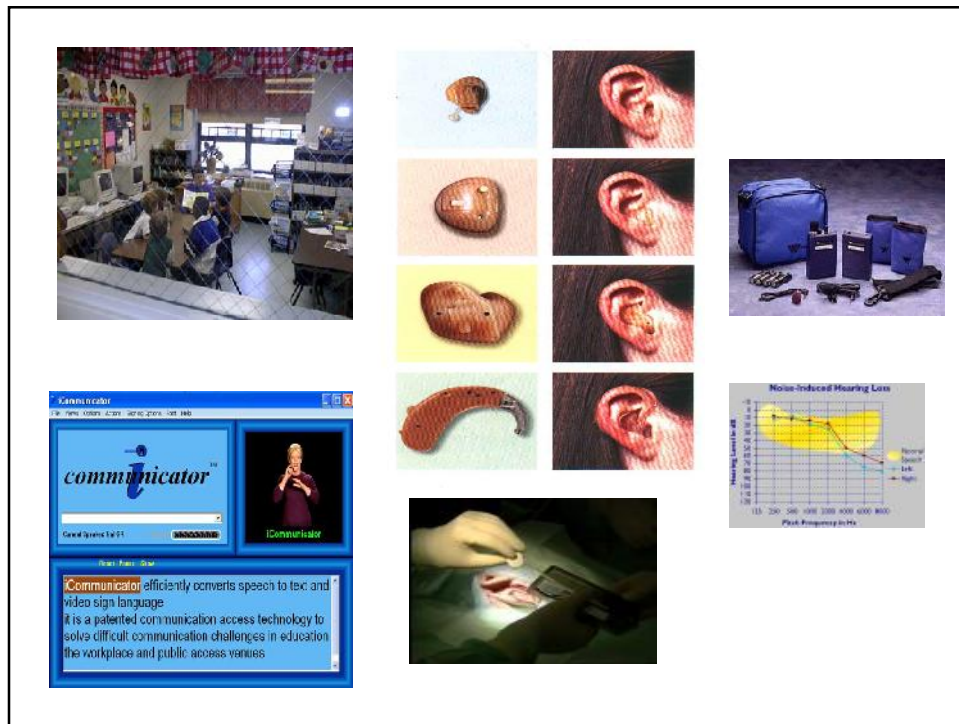
Activities of daily living

- Non-slip surfaces
- Holders and reachers
- Adapted utensils for eating, drinking, and cooking
- Hygiene adaptations
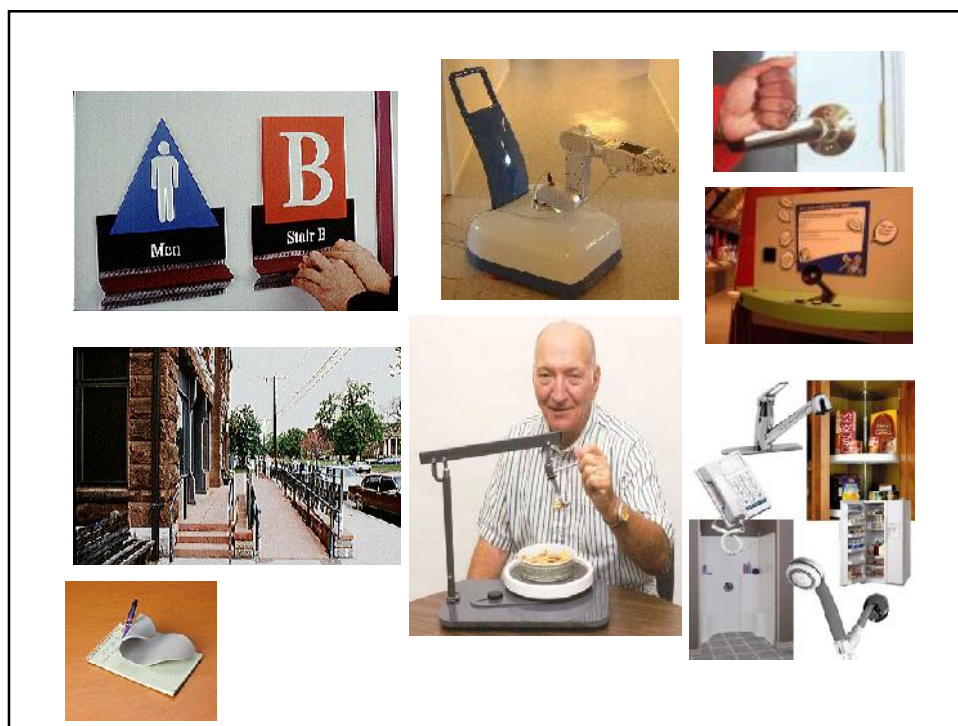
Quality Indicators for Assistive Technology Service

- Consideration
- Assessment
- Inclusion in the Individualized Education Program
- Implementation
- Evaluation of Effectiveness
- Transition
- Administrative Support
- Professional Development and Training

QIAT Consortium (2009). Quality Indicators for Assistive Technology Services. Lexington, KY: NATRI. www.qiat.org .

Quality Services

- Consideration
  - For all types of disabilities
  - Collaborative decision making process
  - Team has or gets the knowledge needed to consider need
  - Goals and standards based
  - Data based
  - Range of devices
  - Consideration process is documented

Quality Services

- Assessment

  - Consistent procedures
  - Team based and conducted in customary environments
  - Functional
  - Timelines and data
  - Guides team with data based recommendations
  - Reassessed if changes occur or are noted by team

Inclusion in the IEP and Implementation

Inclusion in the IEP

- Guidelines for Documenting
- Services are designated in the IEP that support AT
- Goal related
- Data based
- Clear and complete

AT Implementation

- Collaborative implemented
- Integrated into curriculum
- Shared responsibility
- Varied opportunities
- Training for student, staff and family
- Data driven
- Maintenance of equipment and management is clear

Evaluation and Transitions to Next or Other Environments

Evaluation of effectiveness

- Clearly defined responsibilities
- Goal related
- Quantitative and qualitative
- Effectiveness across environment
- Data for measuring achievement and identify barriers and supports
- Changes are made based on progress monitoring
- On-going process

Transition

- AT needs for receiving environment
- Empowers student
- Advocacy recognized as critical
- Requirements in receiving environment
- Timeline
- Plans address equipment, training and funding

Administrative Support

Written Guidelines

Broadly disseminated throughout staff

Written description of AT related job tasks

Employ competent people or build competency

Include AT in the planning and budgeting process

Systematic, agency wide programs and local team supports

Professional Development and Training

•Assistive technology training and professional development

•PD plan that supports selection, acquisition and use of assistive technology

•Local, state and national resources

•On-going learning opportunities

•Research and evidence based models

•Professional development efforts are compared to student achievement for assessing professional development effectiveness.

www.closingthegap.com

www.arkansas-ican.org

www.eastersealsar.com

http://www.csun.edu/cod/conference/index.php

www.atia.org

Ask yourself these questions!

Our team needs to prove and document our efforts in providing assistive technology for a student. Can we rapidly and effectively explain and examine our efforts?

Student Name and characteristics, main staff contact, team members and roles associated with AT and program. Equipment used and tasks associated with it. Have we been adequately trained? How can we prove it? What classroom and home activities associated with curriculum goals have been associated with the AT devices and services and how are we assessing how effective the AT implementation is? What needs to be done differently?

Resources

- www.eastersealsar.com/ The Technology and Curriculum Access Center, Easter Seals Arkansas offers consultation, training, assessment and loans for AT in Arkansas schools and the Easter Seals Outreach Program provides technology assistance, consultation and training throughout Arkansas schools.
- www.arkansas-ican.org The Arkansas program for assistive technology, which maintains the AT4All program.

Resources

- http://www.disabilityresources.org/AT.html A good national resource directory for AT information
- http://www.closingthegap.com/ A resource directory and conference that is very comprehensive
- http://www.atia.org The Assistive Technology Industry Association web links

Thanks for Participating!

www.eastersealsar.com

Easter Seals Arkansas collaborates with the Arkansas Department of Education, Special Education Unit and the Southwest Americans with Disabilities Act Center