



ASSISTIVE TECHNOLOGY (AT)

Lindsay Ivey
Dr. Marci Kinas Jerome
Emily McKeough-Fallings



OVERVIEW

- ① What is AT?
- ① What are AT services?
- ① Legislation
- ① Categories of AT



DEFINITION OF ASSISTIVE TECHNOLOGY

- ③ **Assistive technology (AT)** is “any item, piece of equipment, or product whether acquired commercially off the shelf, modified, or customized to increase, maintain, and improve the functional capabilities of individuals with disabilities.”
- ③ The term AT does not include a medical device that is surgically implanted, or the replacement of that device



DEFINITION OF AT

- ③ **Commercially off the shelf** – can be bought in a store or online (i.e. computer, standard keyboard, magnifying glass)
- ③ **Modified** – something bought and off the shelf and changed to fit the individual's needs (i.e. standard keyboard modified with enlarged letters)
- ③ **Customized** – an item that is made from scratch (i.e. lap tray with recessed laptop holder for the wheelchair)



DEFINITION OF ASSISTIVE TECHNOLOGY SERVICES

- © **Assistive technology service** is “any service that directly assists an individual with a disability in the selection, acquisition or use of an assistive technology device.”



TYPES OF SERVICES

- ③ Evaluation in natural environment
- ③ Provision/purchase or lease of devices
- ③ Selection, design, adaptation, customization, and repair/replacement of devices
- ③ Coordination with other services
- ③ Training for the individual, family and/or professionals

LEGISLATION

◎ **The Rehabilitation Act of 1973 (P.L. 93-112) Section 504**

- ◎ Mandates reasonable accommodations in federally funded employment agencies and higher education facilities.
- ◎ It prohibits discrimination in employment or admission to academic programs solely on the basis of disability.



LEGISLATION (CONT.)

- ◎ **The Americans with Disabilities Act (ADA), PL 101-336**
 - ◎ Provides civil rights to citizens with disabilities just like the ones provided to individuals on the basis of race, sex, national origin, and religion.
 - ◎ The ADA protects persons with disabilities against discrimination addressing equal access to employment, transportation, public accommodations, and telecommunications.





LEGISLATION (CONT.)

- ◎ **Individuals with Disabilities Education Act (IDEA), 1990 (PL 101-476), 1997 (PL 105-17), and Individuals with Disabilities Education Improvement Act (IDEIA) 2004 (PL 108-446):**
 - ◎ Assistive technology devices and services must be provided if required as part of the student's special education, related services, or supplementary aids & services to facilitate the student's education in a regular classroom.
 - ◎ Assistive technology devices and services established in the IEP must be provided at no cost to the student or parents. However, the school may use whatever state, local, federal, and private resources are available.



ASSISTIVE TECHNOLOGY

- ③ **No-Tech:** A device or system that does not include any electrical mechanical components
- ③ **Low-Tech:** A device or system that does not include a computer chip, but might include a battery or require electricity
- ③ **High-Tech:** A device or system that includes a computer chip

ASSISTIVE TECHNOLOGY

LOW TECH VS. HIGH TECH

Low Tech

Pencil grips
Color coding
Highlighters
Eating utensils
Reading and writing guides
Enlarged worksheets

Mid Tech

Books on tape
Talking spell checker, dictionary
Tape recorder
Switch controlled toy, light, blender

High Tech

Text readers
Voice recognition
Environmental control units
Augmentative communication devices
software
Electronic books

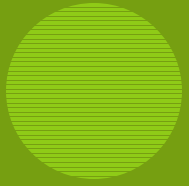
ASSISTIVE TECHNOLOGY



- ◎ Assistive technology can be broken down into two main categories:
 - ◎ **Hardware and Devices**
 - Calculators, augmentative and alternative communication devices, adapted computer access devices, etc.
 - ◎ **Software**
 - Write Out Loud, Co:Writer, Inspiration, IntelliPics, etc.



QUESTIONS???



AT AND DISABILITIES



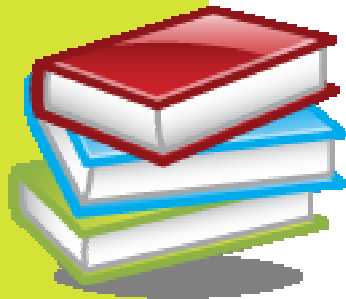
OVERVIEW

- ◎ Types of Disabilities
 - ◎ Learning and Cognitive
 - ◎ Physical
 - ◎ Sensory
 - ◎ Communication
- ◎ How AT Can Help
- ◎ AT Demonstration

LEARNING

◎ Learning Disability

- ◎ A neurological disorder
- ◎ May have difficulty reading, writing, spelling, reasoning, recalling and/or organizing information
- ◎ Fifteen percent of the U.S. population, or one in seven Americans, has some type of learning disability, according to the National Institutes of Health.





COMMON LD

- ◎ **Dyslexia**

- ◎ A language-based disability in which a person has trouble understanding written words. It may also be referred to as reading disability or reading disorder.

- ◎ **Dyscalculia**

- ◎ A mathematical disability in which a person has a difficult time solving arithmetic problems and grasping math concepts.

- ◎ **Dysgraphia**

- ◎ A writing disability in which a person finds it hard to form letters or write within a defined space.



COMMON LD

⊙ **Auditory and Visual Processing Disorders**

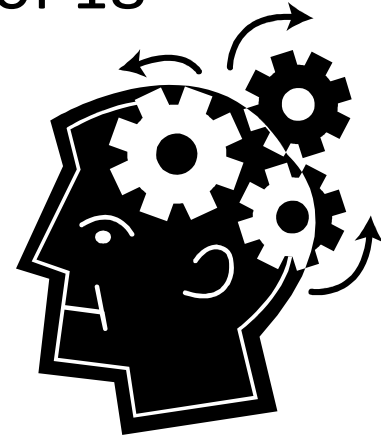
- ⊙ Sensory disabilities in which a person has difficulty understanding language despite normal hearing and vision.

⊙ **Nonverbal Learning Disabilities**

- ⊙ A neurological disorder which originates in the right hemisphere of the brain, causing problems with visual-spatial, intuitive, organizational, evaluative and holistic processing functions.

COGNITIVE

- ③ Significant limitations both in intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills
- ③ Originates before the age of 18



PHYSICAL

- ⊙ A physical impairment includes:
 - ⊙ Orthopedic, neuromuscular, cardiovascular and pulmonary disorders
- ⊙ May be congenital or a result of an injury



SENSORY

🎯 **Hearing**

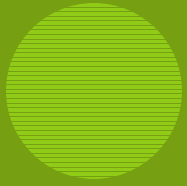
- 🎯 Deafness
- 🎯 Hard of Hearing



🎯 **Vision**

- 🎯 Blind
- 🎯 Low Vision



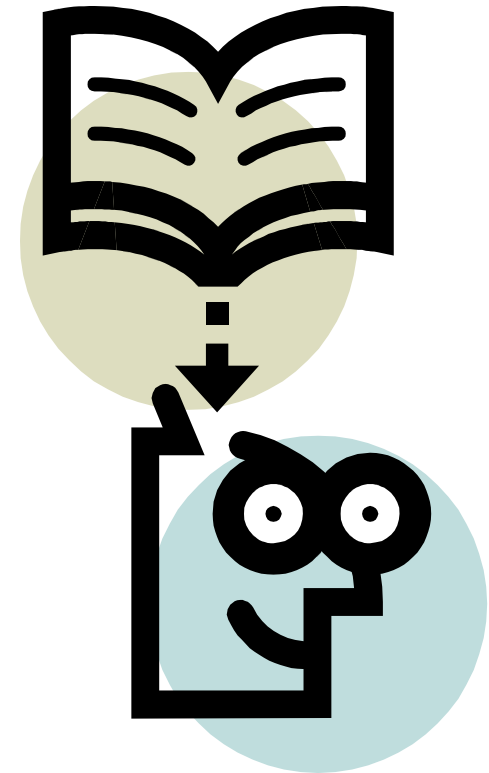


COMMUNICATION

- ⊙ An impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal, and graphic symbol systems.
- ⊙ May be evident in the process of hearing, language, and/or speech.
- ⊙ Can range from mild to profound
- ⊙ May be developmental or acquired

HOW AT CAN HELP

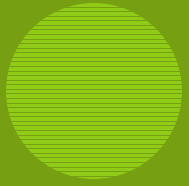
- ① Academics
- ① Reading and Writing
- ① Speech and Language
- ① Organization skills
- ① Memory skills
- ① Behavioral skills
- ① Life skills



HOW AT CAN HELP

- ◎ Independence
- ◎ Mobility
- ◎ Peer Acceptance
- ◎ Daily Living

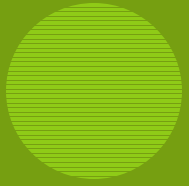




AT DEMO



QUESTIONS???



AT IN SCHOOLS



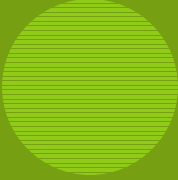
OVERVIEW

- ① Why consider AT?
- ① Individualized Education Program (IEP)
- ① Why AT and the IEP?
- ① Issues of AT in Schools
- ① Transitioning from High School to College
- ① Post-Graduate and Employment



WHY CONSIDER AT?

- ③ IDEA requires schools to provide AT if it is needed for a student to receive a Free Appropriate Public Education (FAPE)
- ③ AT shall support a student's participation in learning in the least restricted environment (LRE)
- ③ “The National Council on Disability estimated that 75% of children with disabilities could remain in the general education classroom if supplied with the appropriate AT.”



INDIVIDUALIZED EDUCATION PROGRAM (IEP)

- ⊙ “Each public school child who receives special education and related services must have an Individualized Education Program (IEP).”
- ⊙ “Creates an opportunity for teachers, parents, school administrators, related services personnel, and students (when appropriate) to work together to improve educational results for children with disabilities.”



WHY AT AND THE IEP?

- ③ IDEA requires that every IEP/IFSP committee “consider whether the child needs assistive technology devices and services”
- ③ AT devices and services must be identified by their IEP team and their use determined within the natural environment; the one in which they will use the device.

ISSUES OF AT IN SCHOOL

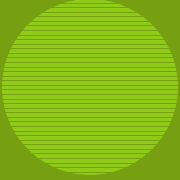
- ① Training
 - ① Lack of training and technical assistance both in the operation and integration of the technology into the curriculum by administrators, professionals, parents, and the student.
- ① Funding
 - ① Money to purchase and maintain AT
- ① Maintenance
 - ① Lack of ongoing maintenance, repairs, upgrades, and modifications



TRANSITIONING FOR HIGH SCHOOL TO COLLEGE

- ③ No IEP
- ③ Self-disclose
 - ③ Students must self-disclose to disability services about their disability to receive accommodations
- ③ AT purchased by schools does not follow student after graduation (must stay with school system)





POST-GRADUATE AND EMPLOYMENT

- ⊙ The Americans with Disabilities Act of 1990 (ADA) makes it unlawful to discriminate in employment against a qualified individual with a disability.
- ⊙ Applicant Must:
 - ⊙ Satisfy the employer's requirements for the job, such as education, employment experience, skills or licenses.
 - ⊙ Be able to perform the essential functions of the job with or without reasonable accommodation.



REASONABLE ACCOMMODATIONS

- ⦿ A reasonable accommodation is any change or adjustment to a job or work environment that permits a qualified applicant or employee with a disability to:
 - ⦿ Participate in the job application process
 - ⦿ Perform the essential functions of a job
 - ⦿ Enjoy benefits and privileges of employment equal to those enjoyed by employees without disabilities

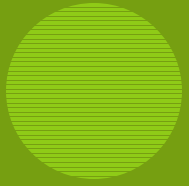


REASONABLE ACCOMMODATIONS

- ⊙ Includes:
 - ⊙ Providing or modifying equipment or devices
 - ⊙ Job restructuring
 - ⊙ Part-time or modified work schedules
 - ⊙ Reassignment to a vacant position
 - ⊙ Adjusting or modifying examinations, training materials, or policies
 - ⊙ Providing readers and interpreters
 - ⊙ Making the workplace readily accessible to and usable by people with disabilities



QUESTIONS???



AT AND AGING

AT AND AGING

- ① Assistive Technology may be helpful to those who find growing older a bit of a challenge
- ① Can Improve the overall quality of life





AREAS OF CONCERN

⊙ Skill Deficient

- ⊙ Vision
- ⊙ Hearing
- ⊙ Cognition
- ⊙ Speech
- ⊙ Motor

⊙ Areas of Function

- ⊙ Self-Help
- ⊙ Recreation
- ⊙ Communication
- ⊙ Stability
- ⊙ Mobility
- ⊙ Environment



HOW AT CAN HELP AS YOU AGE

- ① Assist in learning
- ① Enable persons to stay or return to the workplace
- ① Support and/or replace skills lost or altered by illness, disease, or accidents
- ① Make the environment more accessible
- ① Enhance independence



TYPES OF AT

- ① Kitchen
- ① Dressing and Grooming
- ① Around the House
- ① Cell Phone Usage
- ① Leisure

KITCHEN



\$4.50

Ring Pull Can Popper
<http://www.maxiaids.com>



\$49.85

Lids Off Automatic Jar Opener
<http://www.maxiaids.com>



\$15.99

Pan Holder
www.sammonspreston.com/



\$19.99
Toss and Chop
www.maxiaids.com/



\$34.99

Pot/Kettle Tipper
www.sammonspreston.com/



\$12.95

EZ Fill Liquid Level Alarm
<http://www.independentliving.com/>

KITCHEN CONT.



\$24.95

One Handed Cutting Board
www.maxiaids.com



\$3.95

EZ Pour
www.independentliving.com



\$11.95

Ergo Spatula
www.maxiaids.com



\$9.95

Kitchen Stickers
www.independentliving.com



\$9.95

Sugar Dispenser
www.independentliving.com

DRESSING AND GROOMING



\$15.95
Stocking Aid

<http://www.samonspreston.com>



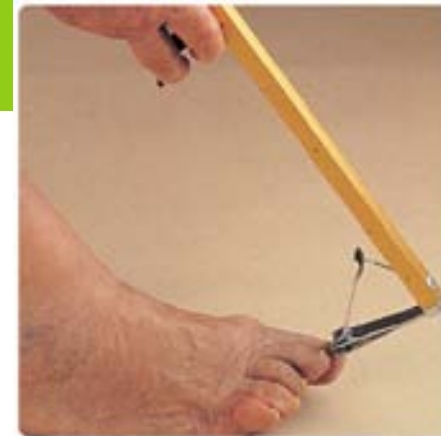
\$10.99

Zipper Pull and Button Hook
<http://www.samonspreston.com>



\$15.95
Sock Assist

<http://www.samonspreston.com>



\$109.99

Long Handled Clippers
<http://www.samonspreston.com>



\$29.99

Bra Angel
<http://www.samonspreston.com>

AROUND THE HOUSE



\$6.99

EZ Grip Holder

<http://www.samonspreston.com>



\$21.99

Door Knob Turner

<http://www.samonspreston.com>



\$21.95

EZ Grip Grabber

<http://www.maxiaids.com>



\$26.95

Talking Rx

<http://www.independentliving.com>



\$1.99

Glow-in-the-Dark Lamp Switch

<http://www.maxiaids.com/>



\$98.95

Uplift Seat Assist

<http://www.maxiaids.com>

AROUND THE HOUSE CONT.



\$19.95

Knob Turner

<http://www.maxiaids.com>



\$44.95

Home Pill Dispenser

<http://www.maxiaids.com>



\$44.95

Home Pill Dispenser

<http://www.maxiaids.com>



\$39.75

Swivel Cushion Seat

<http://www.maxiaids.com>



\$19.99

Walker-Glow

<http://www.maxiaids.com>



\$39.95

The Handy Bar

<http://www.maxiaids.com>

PHONE USAGE

Jitterbug Phone
www.jitterbug.com
\$147.00



CapTel
www.weitbrecht.com
\$99.00

Cell Phone Magnifying Lens
www.independentliving.com
\$6.95



Verizon Samsung Knack
www.verizonwireless.com
\$39.99 with contract

LEISURE



\$2.95
Jumbo Dice
<http://www.maxiaids.com>



\$22.00
Jumbo Dominoes
<http://www.maxiaids.com>



\$39.95
Jumbo Crossword Puzzle
<http://www.flaghouse.com>



\$8.35
Playing Card Holder
<http://www.maxiaids.com>



\$44.95
Jumbo Chess Set
<http://www.flaghouse.com>



\$8.50
Large Print Playing Cards
<http://www.maxiaids.com>



\$14.95
Jumbo Checkers Set
<http://www.flaghouse.com>



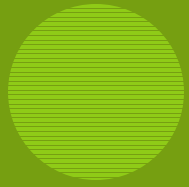
 \$44.95
Low Vision Scrabble
<http://www.maxiaids.com>

A decorative graphic consisting of a dark green rectangle in the top-left corner containing a light green circle with horizontal lines. To its right is a light green horizontal bar. Below the dark green rectangle is a yellow vertical bar.

QUESTIONS???



GEORGE MASON UNIVERSITY'S AT PROGRAM



CERTIFICATE PROGRAM

- ③ Provides supplemental training to practitioners needing to use AT with individuals with disabilities
- ③ A tool-based, hands-on, direct-learning approach
- ③ Training on current AT and techniques
- ③ 15 credits



MASTER'S PROGRAM

- ③ Prepares educators and other professionals to work with persons with disabilities, service providers, and family members
- ③ Graduates will use technology to assist individuals to function more effectively in school, home, work, and community environments
- ③ 30 Credits

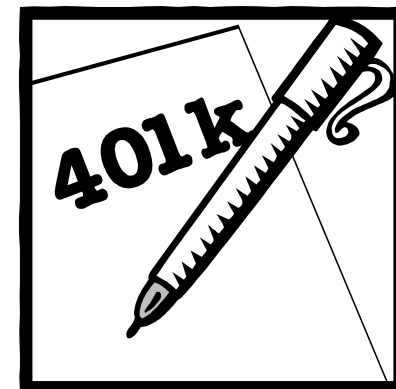
EMPLOYMENT OPTIONS

◎ AT Resource in:

- ◎ Schools
- ◎ Community
- ◎ Related Service Areas

◎ AT Specialist within:

- ◎ Schools
- ◎ Government
- ◎ Public and Private Sector





QUESTIONS???