What is Assistive Technology?

- **Assistive technology** is any item or piece of equipment or product system acquired commercially; off the shelf, modified, or customized, and used to increase, maintain, or improve functional capability for an individual with disabilities.

*Technology-Related Assistance for Individuals with Disabilities Act of 1988*
What is Assistive Technology?

- **AT can be low-tech**: communication boards made of cardboard or fuzzy felt.
- **AT can be high-tech**: special-purpose computers.
- **AT can be hardware**: prosthetics, mounting systems, and positioning devices.
- **AT can be computer hardware**: special switches, keyboards, and pointing devices.
- **AT can be computer software**: screen readers and communication programs.

What is Assistive Technology?

- AT can be inclusive or specialized learning materials and curriculum aids.
- AT can be specialized curricular software.
- AT can be much more—electronic devices, wheelchairs, walkers, braces, educational software, power lifts, pencil holders, eye-gaze and head trackers, and much more.
Who Can Benefit From Assistive Technology?

- People who most need assistive technology include:
  - people with disabilities
  - older people
  - people with noncommunicable diseases such as diabetes and stroke
  - people with mental health conditions including dementia and autism
  - people with gradual functional decline.

Health, well-being and socioeconomic benefits

- Assistive technology can have a positive impact on the health and well-being of a person and their family, as well as broader socioeconomic benefits. For example:
  - Proper use of hearing aids by young children leads to improved language skills, without which a person with hearing loss has severely limited opportunities for education and employment.
  - Manual wheelchairs increase access to education and employment while reducing healthcare costs due to a reduction in the risk of pressure sores and contractures.
Health, well-being and socioeconomic benefits

• Assistive technology can have a positive impact on the health and well-being of a person and their family, as well as broader socioeconomic benefits. For example:
  • Assistive technology can enable older people to continue to live at home and delay or prevent the need for long-term care.
  • Therapeutic footwear for diabetes reduces the incidence of foot ulcers, preventing lower limb amputations and the associated burden on health systems.

Unmet Global Need For Assistive Technology

• Across the globe, many people who need assistive technology do not have access to it. Examples of the unmet global need for assistive technology include:
  • 200 million people with low vision who do not have access to assistive products for low-vision.
  • 75 million people who need a wheelchair and only 5% to 15% of those in need who have access to one.
Unmet Global Need For Assistive Technology

- Examples of the unmet global need for assistive technology include:
  - 466 million people globally experience hearing loss. Hearing aid production currently meets less than 10% of the global need.
  - Lack of affordability in low-income countries is a major reason people in need do not possess assistive products.

- Huge workforce shortages in assistive technology: over 75% of low-income countries have no prosthetic and orthotics training programmes. Countries with the highest prevalence of disability-related health conditions tend to be those with the lowest supply of health workers skilled in provision of assistive technology (as low as 2 professionals per 10 000 population).
How Did Assistive Technology Evolve?

• 1973 - AT had not be formally defined, but was being used to assist students with disabilities.
• 1975 – Free Appropriate Public Education (FAPE) for students with disabilities – a right guaranteed by Section 504 of the Rehabilitation Act of 1973
• 1988 - AT was formally defined by the “Tech Act” of 1988 formally defined AT. Two specific areas related to AT were defined:
  • Assistive Technology Service
  • Assistive Technology Devices

• 1990 - Tech Act” becomes “Individuals with Disabilities Education Act” (IDEA).
  • AT was mandated
  • Individual Transition Plans became part of Individual Education Plan (IEP).
  • AT devices had to be considered for all transition plans & part of IEP if considered necessary.
• American with Disabilities Act (ADA)
  • AT no long just part of education…extended into the public arena…..
  • No Discrimination against individuals with disabilities!
How Did Assistive Technology Evolve?

• 1997 - AT reauthorized
  • Students with disabilities were now to be educated with their peers.
• 2004 - Individual with Disabilities Improvement Act passed…
  • AT defined within law for the first time!
  • Definition of AT did not change
  • Clarification was made regarding surgically implanted devices and replacement.

Low-Tech Assistive Technology

[Images of low-tech assistive technology items]
From No-tech, Low-tech to High-tech: Different Types of Page Turner ATs

Spectrum of Assistive Technology

Physical Environment Modifications

Any AT in the Middle of the Spectrum

Vehicle Modifications
High Tech Assistive Technology

Sure Grip
Hand Controls

High-tech AT - Environmental Control Systems
Assistive Technology in the Classroom

**Low-Tech**
- Hard copies of notes provided by the instructor or other student
- Outlines, double spaced, with key words provided by the teacher or note taker
- Printed materials double-spaced and with larger print
- Tape recorders
- Calculators with voice synthesizer
- Books on tape

**High-Tech**
- Lap top computer for note taking
- Electronic spelling masters or dictionary with voice output
- Word prediction software
- Outline software
- Reading and scanning software
- Voice recognition software
AT in the Classroom – Scanning and Reading

AT in the Classroom – Writing Tools

Voice Recognition

Writing Tool: outline and organize ideas

Word Prediction Software
AT in the Classroom: What about MATH?


Can select subject and types of supports needed.
AT in the Service Environment

**Low-Tech**
- To-do lists
- Date planner (electronic or paper and pencil) and electronic reminders
- Color post-it notes
- Quiet space
- Telephone with headset
- Organized filing system
- Clip board

**High-Tech**
- Alternative keyboards and mice
- Digital recorder
- Ergonomic desk, height adjustable tables
- Service-site modifications
- Reading and scanning software
- Voice recognition software
AT in the Service Environments

Microsoft Outlook Accessibility features

- Include alternative text with all visuals and tables.
- Add text to the images.
- Add hyperlink text and ScreenTips.
- Use accessible font format.
- Use accessible font color.
- Use bulleted list styles.
- Adjust space between sentences and paragraphs
Accessibility in MS Outlook

• Get started using accessibility features in Outlook
• Use a screen reader to explore and navigate Outlook Mail
• Use a screen reader to explore and navigate Outlook Calendar
• Keyboard shortcuts for Outlook
• Basic tasks using a screen reader with email in Outlook
• Basic tasks using a screen reader with the calendar in Outlook
• What's new in accessibility for Outlook

AT in the Service Environments
Example of Work-Site Modification

Vocation: Metal Jewelry-Making

Adaptation: One-handed Operation

AT for Daily Activities – Seniors and Independent Living

**Low-tech**
- Reacher
- Non-slip material
- Lever handles
- Slide or toggle switches
- Utensils with easy-grip handles
- Mirror mounted over the range
AT for Daily Activities – Seniors and Independent Living

**High-tech**
- Clapper
- Universal remote control
- Home automation systems
- Environmental control systems
- Screen magnification software
AT in the Home: More Environmental Control Systems