

Putting the AT in RecreATional Therapy

The Role of Assistive Technology in Recreation and Leisure

Katherine Griffiths, Janet Shoemaker, Nancy Cinto & Christina Rennie
Inglis Assistive Technology Solutions



Introduction



Katie Griffiths ATP, CTRS
AT Educator



Janet Shoemaker ATP, CTRS
AT Educator



Nancy Cinto, CTRS
AT Program Manager



Christina Rennie ATP, CTRS
AT&HM Specialist

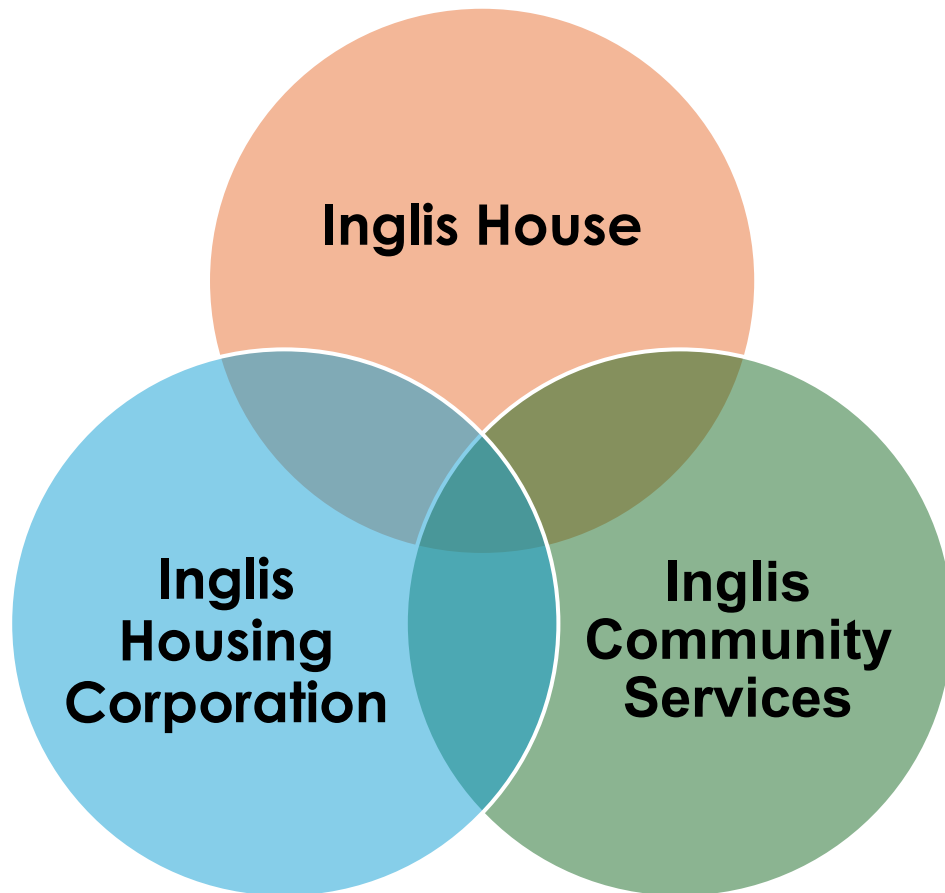
Who We Are

For almost 150 years Inglis has made a commitment to helping people with disabilities.

- Inglis serves people living independently in the community, as well as those living in our residential nursing facility, Inglis House.
- Inglis enables people with disabilities – and those who care for them - to achieve their goals and live life to the fullest.



Programs and Services



Inglis House skilled nursing, long-term care community, based in Philadelphia.

Housing Corporation the largest private provider of affordable, accessible housing in the Greater Philadelphia region with more than 400 affordable units, nearly half fully accessible for people with disabilities.

Community Services Offering a variety of programs and resources which include assistive technology, employment services, home modifications, and housing opportunities.

Our Mission

We champion independence through innovative, life-enhancing services and communities.



Innovation Center
Philadelphia



Innovation Center
Pittsburgh

Inglis Community Services (ICS)

Inglis Community Based Services offers comprehensive programs that support the physical, emotional, and spiritual well-being of individuals with disabilities living independently in the community.



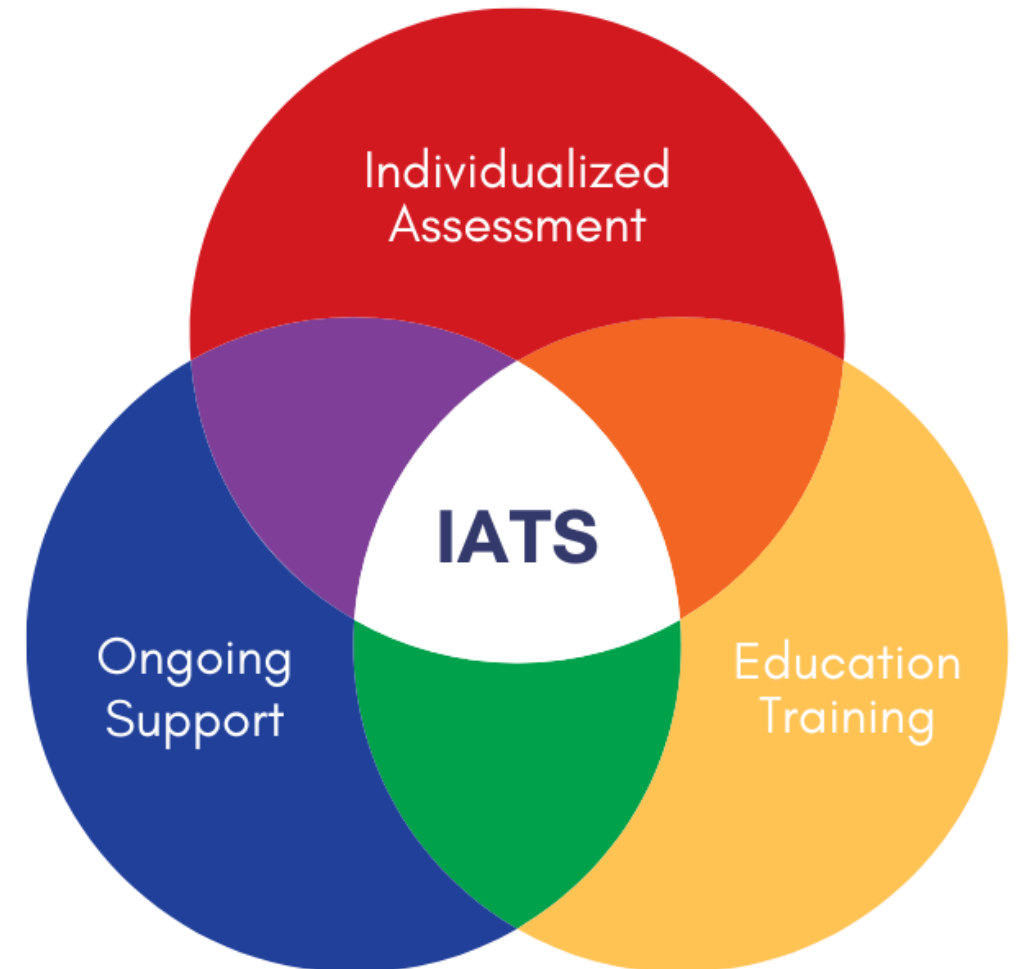
Assistive Tech Solutions

- We provide individualized, goals-based assistive technology services for people with disabilities and older adults who are seeking to increase independence, social engagement, or life management through technology.
- Our services are provided by a team of certified Assistive Technology Professionals (ATP) ready to adapt environments and provide creative solutions that overcome barriers to independent living.



Our Approach

- **Assessment**
 - Learning and understanding the abilities and challenges of service participants.
- **Education**
 - Providing personalized training sessions, skill-building workshops, and hands-on support, increasing knowledge, confidence and self-reliance.
- **Support**
 - Ongoing assistance through troubleshooting and further education to ensure sustained and effective use of solutions.



Our Services



Digital Literacy

understanding and using a computer or program



Skill Development

acquire the skills needed for successful and fulfilling independent living



Web Browsing

(online shopping, social media, telehealth)



Troubleshooting

Identifying and fixing common technology issues



Equipment Setup

This includes smart home devices like Alexa



Email & Account Management

Session Objectives

- Purpose of presentation – explore how assistive technology enhances engagement, accessibility and outcomes in recreational therapy

Define key concepts

Identify categories and examples of AT

Understand the role of RT in promoting inclusion

Explore practical applications in Recreational Settings

Discuss implementation strategies

Evaluate benefits and challenges for AT in RT

Identify future opportunities

Key Terms

Assistive Technology (AT)

- any device, software, or equipment that helps individuals perform tasks that they otherwise couldn't

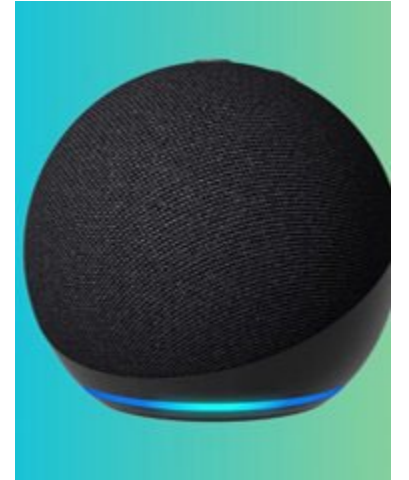
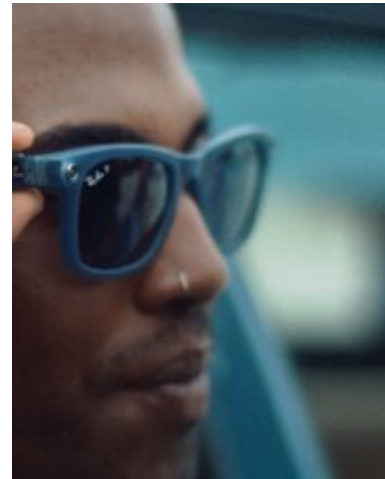
Recreational Therapy (RT)

- use of recreation and leisure activities as treatment to improve health, well-being and function

Overview of Assistive Technology

Categories

- Mobility
- Communication
- Sensory
- Cognitive supports
- Environmental controls



Overview of Assistive Technology (2)



Role of Recreational Therapy

- **RT uses recreation as treatment to improve:**
 - Physical functioning
 - Emotional and social skills
 - Cognitive engagement
 - Quality of life
 - Community inclusion



Connection of AT & RT



both aim to remove barriers and promote independence



Expands participation in sports, arts, games, and leisure



Enabling inclusive recreation



Support goal setting and skill development

Examples

Physical:

- Adaptive bikes, prosthetic devices

Cognitive

- Memory apps, adapted puzzles, group games with voice commands

Creative Leisure

- Switch-adapted musical instrument, painting apps using head/eye tracking

Outdoor Recreation

- All-terrain wheelchair, adaptive kayaking gear

Music Therapy at Inglis

- **Switch-Activated Instruments:** Devices like adapted keyboards or drum pads that respond to single-switch input.
- **Eye-Gaze Music Systems:** Software that lets users play notes or control music using eye movements.
- **Adaptive Mounts:** Positioning instruments or devices for easy reach.
- **Screen Readers & Braille Displays:** For navigating music apps or lyrics.
- **Vibrational Feedback Devices:** Wearable tech that converts sound into vibrations for deaf or hard-of-hearing individuals.
- **Visual Music Apps:** Apps that use color and motion to represent sound for those with hearing loss.



Photos of Inglis Resident Band "Wheelz"

Art

- **Adaptive Brushes & Tools:** Built-up handles, angled brushes, or mouth sticks for painting.
- **Switch-Activated Art Devices:** Tools that allow painting or drawing with a single switch.
- **Robotic Arms:** Controlled via joystick or eye-gaze for precise art-making.
- **Tactile Art Kits:** Raised-line drawing boards and textured materials for individuals with vision loss.
- **Screen Readers & Braille Labels:** For navigating digital art programs.
- **Color Contrast & Magnification Software:** Helps low-vision users work on digital art.
- **Simplified Art Apps:** Interfaces with large icons and minimal complexity.
- **Step-by-Step Guided Programs:** Digital platforms that provide structured art activities.
- **Voice-Controlled Art Tools:** For hands-free operation.



Digital Art made on Microsoft Paint by Inglis Resident

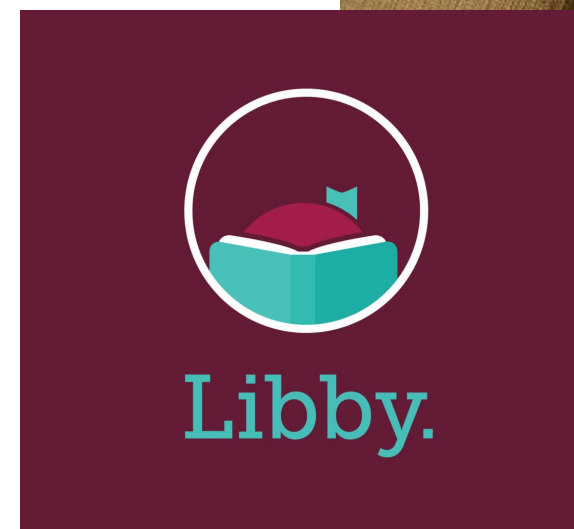


Reading

- **Page Turners:** Electronic or mechanical devices for turning pages.
- **Voice-Controlled E-Readers:** Hands-free navigation of digital books.
- **Switch Access:** Allows page navigation using single-switch input.
- **Screen Readers:** Software like JAWS or NVDA that reads text aloud.
- **Text-to-Speech Apps:** Converts digital text into spoken words (e.g., Voice Dream Reader).
- **Braille Displays & Printers:** For tactile reading.
- **Audiobooks & Podcasts:** Accessible alternatives to print.
- **Simplified Reading Apps:** Large fonts, high contrast, and minimal distractions.
- **Highlighting & Annotation Tools:** Helps with comprehension and memory.
- **Read-Along Features:** Text synchronized with audio for better engagement.



BARD audiobook reader



Horticulture

- **Adaptive Gardening Tools:** Long-handled, lightweight, or angled tools for easier reach.
- **Raised Garden Beds:** Reduce bending and allow wheelchair access.
- **Grip Aids:** Universal cuffs or built-up handles for those with limited hand strength.
- **Automated Watering Systems:** Timers or smart irrigation for reduced physical effort.
- **Tactile Plant Markers:** Braille or raised symbols for plant identification.
- **Auditory Plant Care Apps:** Voice-guided instructions for gardening tasks.
- **High-Contrast Labels & Color-Coded Tools:** For individuals with low vision.
- **Simplified Gardening Apps:** Step-by-step instructions with visuals.
- **Reminder Systems:** Smart devices for watering and care schedules.
- **Color-Coded Planting Kits:** To make tasks easier and reduce confusion.



Adapted Table-Top Games

- **Card Holders & Piece Grippers:** Devices that hold cards or game pieces for those with limited hand strength.
- **Adaptive Dice Rollers:** Electronic or mechanical dice rollers for easy use.
- **Switch-Activated Game Boards:** Digital versions of board games controlled by switches.
- **Mounting Systems:** Position boards at accessible angles for wheelchair users.
- **Braille or Tactile Game Pieces:** Raised markings for identification.
- **Large Print or High-Contrast Cards:** For low-vision players.
- **Auditory Game Apps:** Digital versions with voice prompts for blind or low-vision users.
- **Simplified Game Versions:** Fewer rules and visual aids for easier understanding.
- **Step-by-Step Digital Guides:** Apps that provide instructions in simple language.
- **Color-Coded Pieces:** Helps with organization and reduces confusion.



Adapted Sports

- **Sports Wheelchairs:** Lightweight, maneuverable chairs for basketball, tennis, and racing.
- **Prosthetic Sports Limbs:** Designed for running, swimming, or cycling.
- **Grip Aids:** Universal cuffs for holding bats, rackets, or balls.
- **Ball Launchers & Retrievers:** For individuals with limited arm strength.
- **Auditory Cues:** Beeping balls for soccer or goalball for blind players.
- **High-Contrast Equipment:** Brightly colored balls and markers for low vision.
- **Tactile Field Markers:** Raised or textured boundaries for orientation.
- **Simplified Rules & Visual Guides:** Step-by-step instructions and color-coded zones.
- **Digital Coaching Apps:** Provide reminders and visual demonstrations.
- **Adaptive Scoring Systems:** Large displays or voice announcements for clarity.



Adapted Video Games & Virtual Reality

- **Adaptive Controllers:** Xbox Adaptive Controller, Logitech Adaptive Gaming Kit.
- **Switch Access:** Single or multiple switches for game navigation.
- **Eye-Gaze Gaming Systems:** Control games using eye movement.
- **Voice-Control Gaming:** Speech recognition for commands.
- **Motion Tracking with Limited Range:** VR systems that adjust sensitivity for restricted movement.
- **Screen Readers & Audio Cues:** For navigating menus and gameplay.
- **Haptic Feedback Devices:** Wearables that provide vibration cues for deaf players.
- **High-Contrast & Large Text Settings:** For low-vision gamers.
- **VR Accessibility Features:** Adjustable brightness, subtitles, and audio descriptions.
- **Simplified Game Modes:** Reduced complexity and clear instructions.
- **Visual Prompts & Tutorials:** Step-by-step guidance during gameplay.
- **Customizable Speed & Difficulty:** To prevent frustration and encourage success.



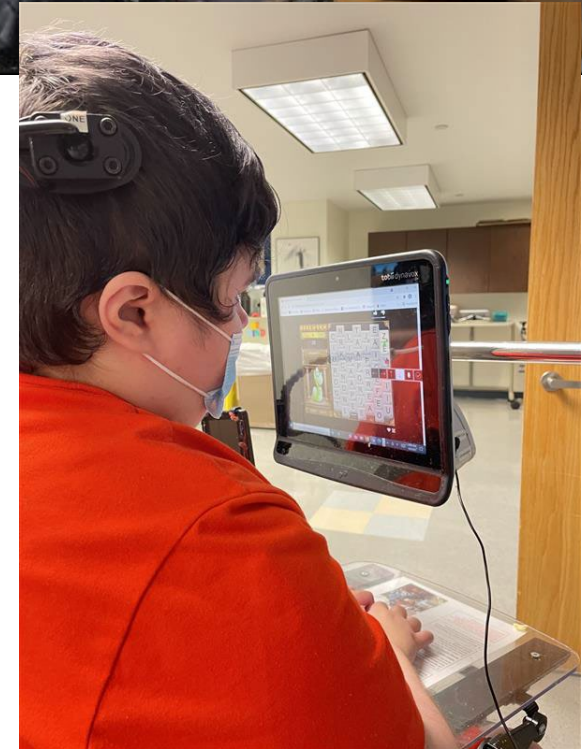
Computer Access

- **Importance of Computer Access**

- **Expands Leisure Options:** Computers provide access to games, music, art programs, reading materials, and virtual communities.
- **Promotes Inclusion:** Individuals with physical, sensory, or cognitive challenges can participate in activities that might otherwise be inaccessible.
- **Supports Social Connection:** Online platforms allow communication with friends, family, and interest groups.
- **Encourages Creativity:** Digital art, writing, and music creation tools enable self-expression.
- **Offers Flexibility:** Activities can be adapted to individual preferences and abilities.

- **Examples**

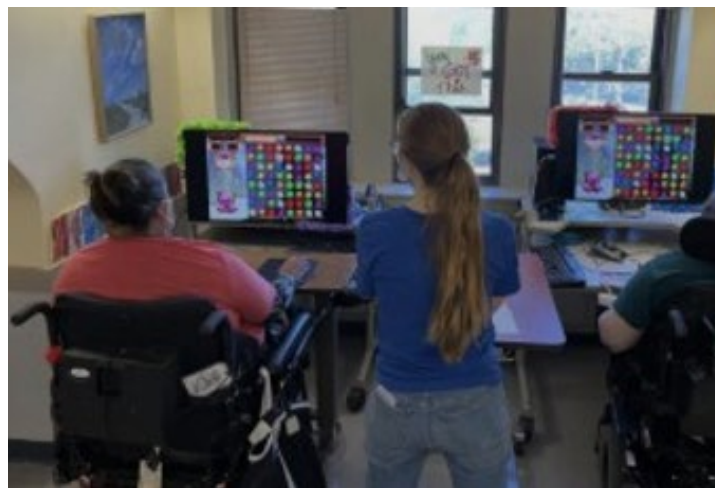
- **Alternative Input Devices:** Switches, joysticks, trackballs, and head pointers.
- **Adaptive Keyboards & Mice:** Customized layouts and ergonomic designs.
- **Speech-to-Text & Text-to-Speech Tools:** For reading and writing support.



AT in Play – Keen Games at Inglis



AT in Play – Keen Games at Inglis (2)



Assessment & Implementation

Assessment considerations

- Functional abilities, leisure interests, barriers, goals
- Collaborate with AT specialists, OT, PT, SLP

Steps to implement AT in RT:

- Assess needs and abilities
- Identify appropriate AT
- Train client and caregivers
- Evaluate outcomes & adjust
- Document functional improvements

Benefits & Outcomes



Increased participation and autonomy



Enhanced self-esteem and motivation



Great inclusion and social engagement



Improved functional outcomes (physical, cognitive, psychosocial)



Supports person-centered, evidence-based RT practice

Barriers

Cost & funding



Training and support needs



Accessibility and compatibility



Ethical use and client consent



Balancing technology use with
human interaction

Future Opportunities

Integration of Artificial Intelligence, Virtual Reality and smart wearables into RT treatment

Development of inclusive recreation design in public spaces

Emphasis on digital literacy and training for RT professionals

Resources

- Borrow Recreational Equipment from TechOwl - [Borrow – TechOWL](#)
- PA Center for Adapted Sports - [PA Center for Adapted Sports](#)
- GamingReadapted - www.gamingreadapted.com

Questions & Discussion

IATS Philadelphia

Email: IATS@inglis.org

Call: 267-207-4747

IATS Pittsburgh

Email: IATS.PGH@inglis.org

Call: 412-790-9993

