

Enabling Occupation with Assistive Technology

Otago Polytechnic - July / August 2021

Who we are

TalkLink Trust – Wahanga Tū Kōrero

- Assistive Technology Service provider
- Charitable Trust, established 1991.
- Services throughout New Zealand.
- National Service Provider for Ministry of Health and ACC

What we do

Linking you with the right technology

To enable all people with communication impairments to interact and participate to their full potential.

We work with individuals of all ages who, due to a disability, have difficulties with speaking, writing, learning and controlling their environment.

TalkLink help to provide a voice and access to the environment to individuals who otherwise may not be able to participate in occupation.

Specialist Service providing

- Assessment
- Equipment Trial
- Training
- Workshops
- Repair and maintenance.

What is Assistive Technology

“any item, piece of equipment or product that is used to increase or improve functional capabilities of people with disabilities” (Cook & Hussey)

“A system of low tech, & high tech tools and strategies which match a person’s needs, abilities, environments and tasks” (Joy Zabala)

Tools, Devices, Strategies: making occupation possible

Facilitating independence, access and participation

For someone who has complex access needs, assistive technology can provide more than just ease of access, but also a means to learn, work, communicate and participate in the world around them.

Technology developments provide accessibility, universal design, more cost effective solutions

Assessment Process

Evaluation: using SETT Framework developed by Joy Zabala

SETT Framework: In order to develop an appropriate system of assistive technology devices and services, teams must first gather:

- information about the Student/client
- information about the Environments in which the student/client spend their time
- information about the Tasks that are required for the student/client to be active participants in the teaching/learning processes that lead to educational success

Only once the above is established should we start to consider....

the Tools

- Brainstorm potential tools to address identified needs
- Devices, services and strategies needed to help the individual succeed
- Consider likelihood of progress toward goals without any AT
- Select promising tools and develop implementation plan
- Collect data on effectiveness and revise AT support plan as appropriate

Assistive Technology Solutions

Adapting/compensating strategies in environment

Exploring solutions you could potentially consider

Tools, Devices and Strategies: Low-Mid-High Tech Continuum

Positioning

Hardware options
Setup of equipment
Dynamic or static supports / mounting
Ergonomic equipment tools
Adjustable tables/chairs – comfort and stability

Operating System adjustments

Keyboard and mouse options
Built in Accessibility settings
Automating tasks
Adjusting layout

Navigation alternatives

Trackballs
Track pads
Head tracking
Eye Gaze
Switch scanning
Styli
Voice control

Keyboard alternatives

Wireless Keyboards
Large keys
Key guards
On-screen keyboards
High contrast or labels for keyboard
Refreshable Braille Keyboards

Typing supports

- Planning and mind mapping
- Smart Pens
- Digital recorders
- Tactile key indicators
- Word completion/prediction software
- Speech to text/speech recognition

Alternative output / reading support

- Large Print and Braille
- Digital Readers/Book players
- Masking / Layout adjustments
- Magnifiers
- Text to Speech Reading Software
- Scanning with Optical Character Recognition
- Integrating devices

Environmental Control Units (ECU)

Control interface that enables people to control various devices in their environment independently
Basic options (like Alexa) to more complex full home modifications.

- Lights
- Electrical Appliances
- Heating/Cooling Systems

Augmentative and Alternative Communication (AAC)

Face to Face Communication & Social Participation:

- Low-Tech Picture Boards
- Dynamic Display dedicated systems
- Software with Communication Boards
- Apps on mobile devices

Importance of Access

A key component to the OT role with implementing successful assistive technology is establishing the most effective mode of access

Importance of support and training

Scaffolding learning and developing competencies for the individual

The Balancing Act

“Students with motor deficits have a very different task in front of them whenever they have to move. Often these students have to focus very hard on the actual motor task of basic things such as keeping their balance, reaching out to touch something, or moving the mouse to a computer. These activities are not automatic and when the student is focused on these basic tasks, there may not be much attention left for other things such as following a conversation or thinking about the cognitive task at hand (i.e. math facts).” Therefore “when the cognitive load is high the motor load should be low and vice versa.” (Dale Gardener-Fox, 2004)

Why Assistive Technology

It enables occupation

- Provides independence
- Enhances performance
- Promotes self esteem
- Improves quality of life
- Increases productivity