

Technology Assisted Learning Sessions

As part of the Technology Assisted Learning sessions, children are first introduced to an interactive PC screen using highly motivating programs that often feature high contrast images and sound. In this method, moving targets are tracked in order to encourage children to pay attention to the screen and become more engaged. When a child shows interest and maintains focus, a single switch is introduced to teach cause and effect, and later two switches are used to develop bilateral coordination.

By using touch screens (larger screens), children are encouraged to reach for the screen, which develops their shoulder girdle strength (important for fine motor skills). In addition, children may also use the iPad during sessions in which they point and drag targets along the screen, a critical skill for using a communication device. This also helps them develop their pincer grip, which is essential for using a pencil or stylus.

The use of technology allows children to demonstrate their cognitive skills without the additional motor planning required for more traditional table-top activities. As a learning tool, technology has proven to be highly motivating, serving as a means of teaching, reinforcing, and testing a variety of concepts covered by the Speech and Language Therapist (SLT) and Development Learning Specialist (DLS).



Highly motivating programmes captured Natalia's attention on the touch screen. Natalia demonstrated her ability to attend and engage.

Program: Black screen with high contrast imagery to support vision/attention.



Natalia reached for the targets on the screen. Natalia is developing shoulder girdle strength as she progresses through this program to support fine motor skill development.



By pressing a single switch for 'more' in response to a visual cue/verbal prompt, Isla demonstrated cause and effect understanding.



It is essential for Harper to be able to point at and touch a target in order to use her AAC device. Using the large touch screen, Harper demonstrated finger isolation by activating the targets with a clear point/touch.



As Harper practiced tracing vertical lines with a stylus, she demonstrated her fine motor skill development with a firm tripod grasp. The iPad is set up at an upright angle for additional support.



Using a stylus, Harper traced the letters of her name with h/h guidance. As part of her preparation for school, she is also learning to recognize the letters in her name.

Technology Assisted Learning- Brief History:

In 1989, Dr Patricia Champion initiated the Computer Specialist Program (now known as TALS- *Technology Assisted Learning Specialist Program*). The Computer Specialist Program/TALS was developed by Jan Murphy/Hilary Stock.

Jan Murphy (SLT/Clinical Director) Jenny Trotter (SLT) and Hilary Stock (40+ years' experience developing and implementing the TALS program) supervised the TALS program until Jan and Hilary's retirement in 2021. Leanne Dunnage has recently taken over the role of TALS supervisor from Lee Bennetts (SLT).

The TALS Team:

The TALS team consists of:

- Monday: Marie MMY Program/ Lilly Monday TTS Program
- Tuesday: Marie Tuesday TTS Program/ Marie Tuesday TTS DS Program
- Wednesday: Lilly Wednesday TTS Program/ Lilly Wednesday TTS Program

Key Points:

- Technology Assisted Learning Specialists extends/reinforces concepts covered by the DLS and SLT while helping children generalize skills across settings.
- Technology is "a vehicle" through which children can demonstrate what they know and understand by also removing elements of motor planning. It is often less confronting for some children to interact with technology rather than a specialist.
- It is very well researched that children with learning challenges need scaffolded step by step learning. During our sessions, we emphasize strengths-based approaches and error-free teaching practices. A child's goal is scaffolded and supported, sometimes hand over hand is needed. Gentle hand guiding used to prevent impulsive reaching for the screen until they have "looked" and chosen the correct answer, until they can achieve it independently, when we celebrate their accomplishment.

- Music specialists have contributed to the development of programs by adding their music to a variety of programs. Our personalised/tailored programs include music from both Julie Wylie and Sarah Marra, who have both worked closely with the TALS team.
- The physical space in the computer rooms are designed to support children to be able to focus, relax and engage. The darker room controls the amount of stimulus children are required to manage at their developmental levels. The room helps support regulation.
- The light room is a small dark space with engaging light sources. It has a large comfortable bean bag in which the child may sit alongside their caregiver/therapist which allows time for a relationship to develop before moving to a device or the computer table.
- The Lightroom is sometimes introduced when it is considered the child's vision may not yet allow engagement with the computer or when the child needs more support with regulation. A variety of different light sources are employed to attract and hold the child's attention.
- Children are appropriately seated and positioned in relation to the computer. The collaboration with OT/PT has been invaluable in ensuring we have correct supportive seating available for all children: blue chairs (provide full support to those who require trunk/head support), adjustable tables (can be positioned at any height level), tables cut out (to provide elbow support), and wobble stools (to support movement-regulation).
- Very occasionally sitting on the floor or on the therapists lap, has enabled engagement with the iPad, leading to being seated at the computer at a later date.
- Language is kept to a minimum while the child looks for a visual solution [eg completing a repeating pattern] and then language such as "next" or "after" may be introduced.
- Programs are also tailored to support vulnerabilities around auditory processing and motor planning.
- The computer programmes support dual code cognition with the appropriate developmental language. For example, the mind processes information along two different channels, both visual and verbal. With the use of technology and tailored programs, the visual supports the verbal and vice versa.
- Adapting tools (joysticks/mounting devices, etc) so children of different ages and abilities can access them.
- The use of the iPad and larger touch screen reinforces the development of fine motor skills by teaching children how to isolate their index finger to touch and drag targets. To access an Augmentative and Alternative Communication device, these skills are essential.
- Computer sessions may be added on to the end of Relating & Communicating sessions providing a medium for transition into the bigger and more busy programme. Both parent and child have already formed a relationship with one of the staff.
- PowerPoint programs are available to use and based on the needs identified by DLS and SLTs and the wider team. In addition to this they are used to support the implementation of the phonological awareness programmes for children with Down Syndrome. These are based on research undertaken at the Champion Centre by Dr Anne van Bysterveldt (SLT). In acknowledgement of this Microsoft funded some support of the programme for three years.

- These power point programmes [which can also be used on the iPad] are clearly illustrated and simple to operate with minimal reward. They are still being used during our sessions and can be shared with families to use at home.
- Additionally, we can personalise programs to include lived experiences/photos of familiar people, places, and objects. The images on the screen can help children gain meaning from their learning by connecting them with their own experiences.

In summary, Technology Assisted Learning sessions are a powerful way for us to gain insights into what children know and understand. From early engagement, cause and effect and fine motor skills through to learning concepts, and developing early numeracy and literacy skills, these sessions are a vital part of child's journey through the Champion Centre.

Parent Reflections- *(More reflections to come from across programs):*

- “This therapy has opened up a whole new world for my daughter who has many challenges especially around her communication. With “*TAL Specialist's*” expertise and this technology my daughter is now starting to track and activate items on a touch screen as well as using a button to activate with purpose and intent. She is learning to wait and starting to anticipate what is going to happen. She gets not only joy out of being able to do this but also independence which is allowing her to grow in so many areas. It has been a game changer for my daughter and every week I see progress.”
- “Harper absolutely adores computer time with “*TAL Specialist.*” She has progressed so much this year with her speech and cognitive abilities. She especially enjoys activities that involve matching patterns and animals to their designated area . Harper has also been focusing and strengthening her ability to focus on activities for longer periods. These stimulating computer sessions have assisted this development. She also has been practising separating her index finger and writing her name which these learnt skills are helping in preparation for school this year.”
- “When Hugo was first introduced to computers it was very clear that this was not for him! Any time a screen was in the same room as him (even turned off) he would scream and cry, and would be inconsolable. “*TAL Specialist*” worked alongside Hugo at his own pace, which meant she was blowing bubbles and playing with toys with him, for over 6 months before he trusted her enough to let her put an iPad next to him during our sessions. Slowly this iPad was turned on, but left unused next to him, before eventually he would let her play a portion of a song, and then a full song on it. Now Hugo is using the touch screen on the computer to identify family members, or isolate his finger to point at different moving objects on a screen. He has moved ahead in leaps and bounds, and will even wrestle the iPad off his older brother at home! Without these sessions, using devices for learning or communication would just not be possible. We're so grateful for “*TAL Specialist*” and her amazing patience and clever scaffolding to get Hugo to where he is now.”