Effects of using the new intervention Driving to Learn™ with people with cognitive disabilities

Background: During the research project Driving to Learn (1994-2007) evidence was found that children and adults with profound cognitive disabilities could achieve unexpected cognitive achievements from practice in a joystick-operated powered wheelchair.

Method: Participatory action research during implementation of the new intervention Driving to Learn™ in different settings. Data sources were video-recordings, repeated assessments of tool use ability, focus groups with parents, seminars with staff and professionals and continuing individual and group supervision at the units where the new intervention was implemented.

Participants: Children and adults with diagnoses involving cognitive disabilities, aged from 13 months to 82 years. Practice in the special powered wheelchair TIRO with a "one-for-all" seating unit, was carried out in co-operation with staff and professionals in paediatric, medical and stroke rehabilitation units, in daycentres for adults with intellectual disabilities and in wards at nursing homes for old people

Conclusion: The most important effects of Driving to Learn™ are general properties necessary for consciousness and awareness, as well as for activity and participation in daily life. The general transfer of these effects to other activities may be due to the character of practice in powered wheelchair involving motion in space, timing, tool-use in interaction, new sensations and emotions that simultaneously elicit numerous parts of the brain.

Transfer effect
to activities performed after practice in powered wheelchair

General properties that powers:
Memory
Learning
Brain plasticity
Emotion
Motor functions
Sensations
Body awareness
Self awareness

Engagement, challenge, fun

Focus, share attention

Explore and experiment

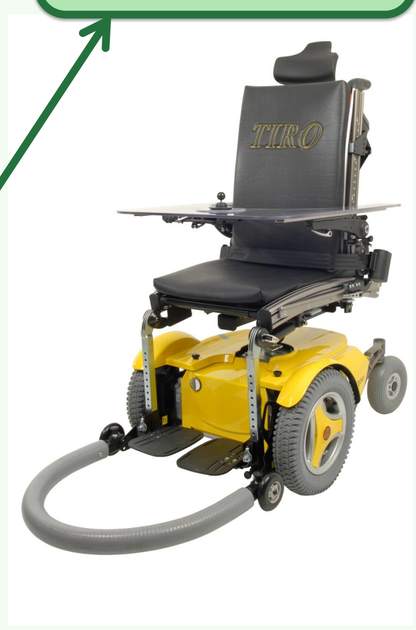
Perceive, reflect and understand

Alertness
Attention-regulation
Executive function
Problem solving
Multi-tasking

Control, master and refine

Store new memories

TIRO – the learning tool



Influence on others and the environment

Plan and foresee consequences

Practice in a special joystick-operated powered wheelchair with a "one-for-all" seating unit

Interaction

Tool use activity

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