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## **Driving to Learn™ an intervention for people with profound cognitive disabilities.**

Lisbeth Nilsson

*Lund University, SE-221 00 Lund, Sweden*

### Introduction

People with profound cognitive disabilities rarely get the opportunity to learn powered mobility. The obvious reason is low expectations of their ability to learn safe and secure driving. Rehabilitation engineers have created technology enabling this population limited powered mobility use. Also, studies of pre-requisite abilities for operating powered wheelchair have been carried out. However, studies focusing on training in powered wheelchair and minor achievements such as growing consciousness of cause-effect relationships could not be found.

### Objectives

To study what people with profound cognitive disabilities could achieve from training in a joystick-operated powered wheelchair.

### Methods

Classical grounded theory with concomitant data collection and analysis led the inclusion of 109 participants: 45 children and adults with profound cognitive disabilities and 64 with milder degrees of cognitive disabilities. Also, 17 infants with typical development took part in the studies. Data sources were video-recordings, observation protocols and formal interviews. The constant comparisons of data focused on behavior, activity and interaction facilitating or hindering progress of achievements.

### Results

All participants grew more aware of tool use and of how to influence on their environment. Six from the 45 participants with profound cognitive disabilities learned how to use the joystick to drive goal-directed. Their unexpected achievement was facilitated by training more than 30 sessions, over a period longer than two year, by educated trainers in a variation of locations. An instrument for assessment of actual phase in the process of learning joystick-use was developed together with training strategies. Moreover, a grounded theory of de-plateauing emerged explaining achievements exceeding preconceived expectations.

### Conclusion

Training in joystick-operated powered wheelchair can be used to stimulate growing consciousness in people with profound cognitive disabilities. The intervention was named Driving to Learn™ as the primary goal was to facilitate growing consciousness of tool use and development of agency and ability to influence on environment.

### Contribution to the practice / evidence base of occupational therapy

The intervention can be used in clinical practice and is appropriate for people with profound cognitive disabilities. Driving to Learn™ was presented in a dissertation 2007.