

Abstract

This case study presentation poster offers a unique challenge for early childhood and school programs to consider future functional needs of children with multiple disabilities. Photographs of an individual with cerebral palsy during the stages of early childhood, elementary school age, adolescence, and young adulthood provide a longitudinal perspective illustrating the importance of his hand skills for occupational performance in all areas of occupation throughout his lifespan in determining degree of inclusion, level of independence, and quality of life. The assessment and intervention model uses a family-centered approach to combine components of developmental theory with realistic functional needs in planning therapy programs to support health and participation in life through engagement in occupation. During each age transition, occupational activities reflecting his goals, values, and beliefs are integrated seamlessly into current environmental contexts of home, school, and community.

Early Childhood



Elementary School



Adolescence

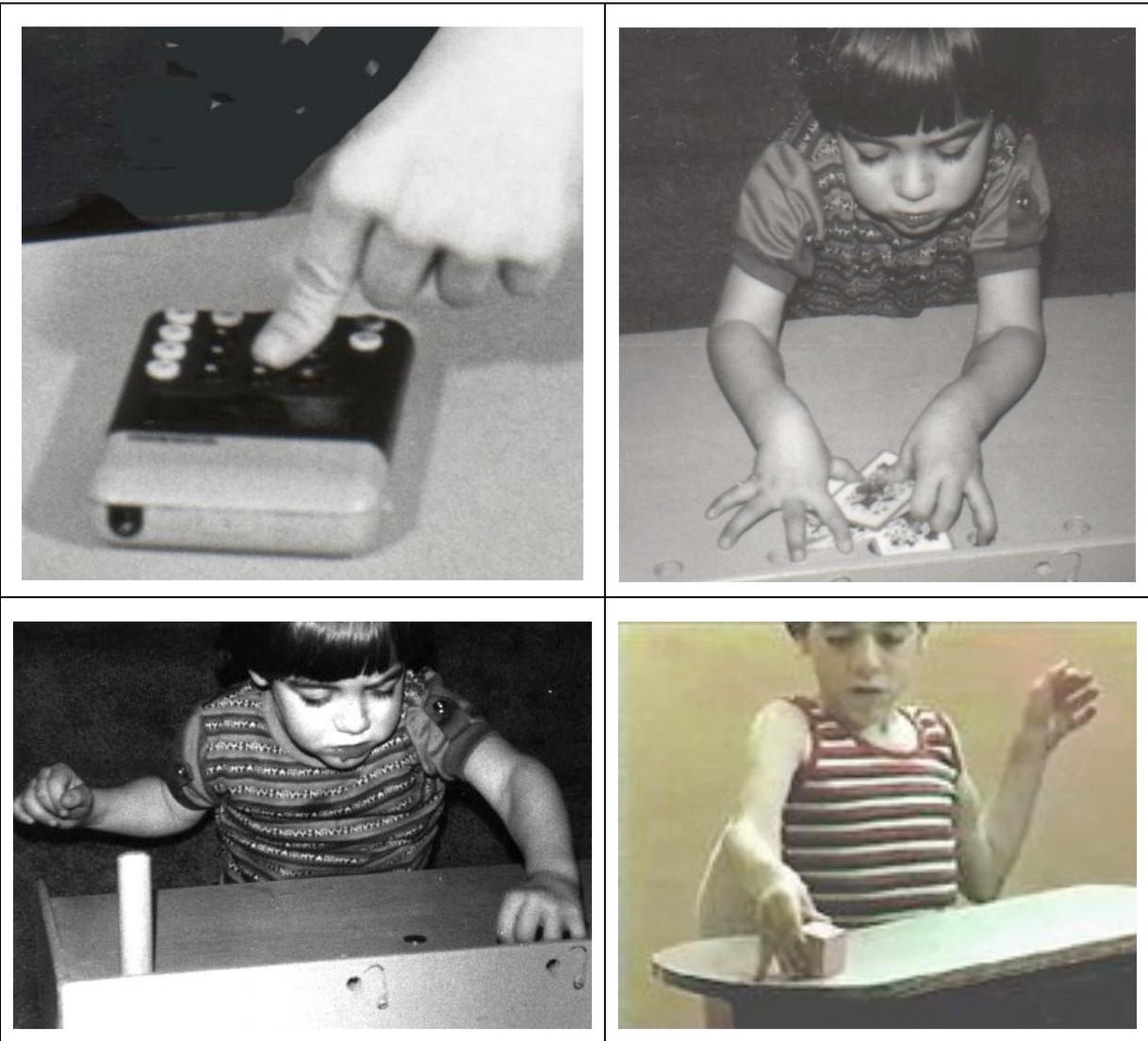


Young Adulthood



Evaluation of Hand Function: Occupational Profile and Analysis of Occupational Performance

Patrick was first seen at the age of 3 years, with a diagnosis of cerebral palsy, athetoid quadriplegia, with spasticity. Observation indicated that his difficulties with hand skills were related to insufficient head control and shoulder stability, affecting his ability to sit securely without support. Without proximal stability, distal mobility was compromised. Compensatory patterns of shoulder elevation and retraction, as well as associated movements (overflow), interfered with achievement of symmetry and selective, graded midrange control of arm, wrist, hand, and finger movements needed for areas of occupational performance important to him and his family, such as using a calculator, playing cards, handling coins, and adapting grasp to different sizes and shapes.



Evaluation: Analysis of Occupational Performance

<p>Activities of Daily Living (ADLs): Eating</p> 	<p>Play Participation: Playing the piano</p> 	<p>Play Exploration: Mud play</p> 
<p>Instrumental Activities of Daily Living (IADLs) Home Management: Watering flowers</p> 	<p>Social Participation Peers: Basketball</p> 	<p>Activities of Daily Living (ADLs): Dressing</p> 

The Erhardt Developmental Prehension Assessment measures both involuntary (positional and reflexive) and voluntary components of hand function (approach, grasp, manipulation, and release), from birth to 15 months, the maturity of prehension and an approximate norm to assess any age. Since many atypical patterns are compensations for inadequate postural stability due to important missing developmental components, intervention can provide those components and teach appropriate points of stability for efficient mobility of arms, hands, and fingers.

**Intervention Plan and Implementation:
Examples to Facilitate Bilaterality
(Using Arms/hands Together) in Different Postures**

Elementary Age: Play
(Rolling pin game in **prone**)
Symmetrical bilateral approach



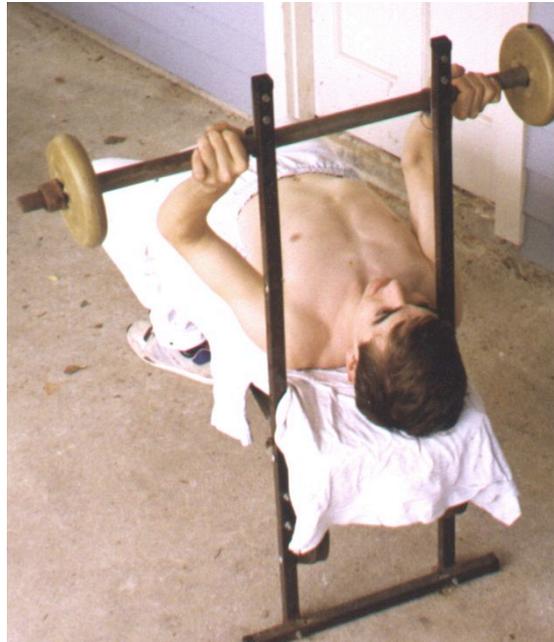
Elementary Age: Education
(Pre-writing in **sitting**)
Opposite hand stabilizes



Adolescence: Home Management
(Gardening on **hands and knees**)
Symmetrical weight-bearing

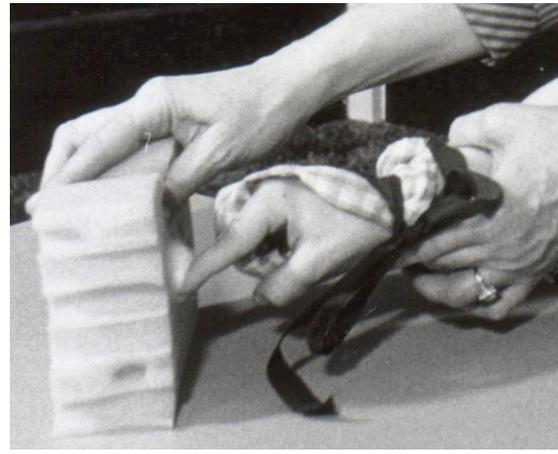


Adolescence: Leisure
(Weight-lifting in **supine**)
Symmetrical bilateral arm use



Examples to Facilitate Pincer Grasp

Elementary Age: Pincher mitt to facilitate index finger isolation



Adolescence: Pincher mitt and clay to practice pincer grasp for the manipulation of medications (IADLs: Health Management)



Adolescence: Gloves to isolate thumbs for pottery wheel (Leisure)



Intervention Review and Outcomes

This poster illustrates how occupational activities reflecting an individual's goals, values, and beliefs can be integrated throughout the lifespan into environmental contexts of home, school, and community. The family-centered approach began in childhood with a home-based program of supervised weekly sessions. Then the therapist's role changed to that of consultant to the school system as well as the family. After four years, the family moved away, but the consultant role continued for the next 27 years, during adolescence and young adulthood, through intermittent visits and connections maintained with telephone calls, letters, and email.

His work history was particularly interesting. After graduating from high school, he was hired by a rehabilitation agency. One of his primary tasks was to scan medical documents, which involved computer use and paper handling. His current job evolved when his family purchased a farm, and he required specific hand skills to drive farm vehicles, care for animals, and assist his uncle with his salvage business.

The subject was always an active, voluntary participant in activities that were directed toward his own goals. The meaning of each activity was unique, influenced by his age, life experiences, roles, interests, and situational contexts within family and community, and used therapeutically to facilitate his ability to function in daily occupations.

First, his interests and current occupational roles were considered. Then, each selected activity was analyzed to identify skills needed to perform task components in specific contexts. The therapists' challenge was to synthesize this information before and during the intervention process, so that activities could be adapted, graded, and modified according to his dynamic responses. Successful performance was accomplished by changing the process (sequence, duration, or procedures), materials and tools (size, shape, weight, or texture), positioning (patient, therapist, adaptive equipment), and other environmental factors.

The ultimate goal was to empower this young man and his family to learn appropriate strategies for enhancing the quality of life by ensuring that meaningful occupation was always the central focus of the therapeutic partnership. His dignity was always respected as he guided his own process of adaptation, benefited from the organizing and integrating effects of occupation, and realized his potential capabilities through mastery of tasks he and his family considered important.

**Examples of Outcomes in Occupational Performance:
Bilaterality Needed for Community Mobility (IADLs)**

Early Childhood: Play (Participation)
Battery-operated car in the
neighborhood



Adolescence: IADL (Shopping)
Powered scooter in a nearby
shopping mall



Adolescence: IADLs
(Home Management)
Garden tractor in home back yard



Young Adulthood: Work
(Job Performance)
Tractor on the family farm

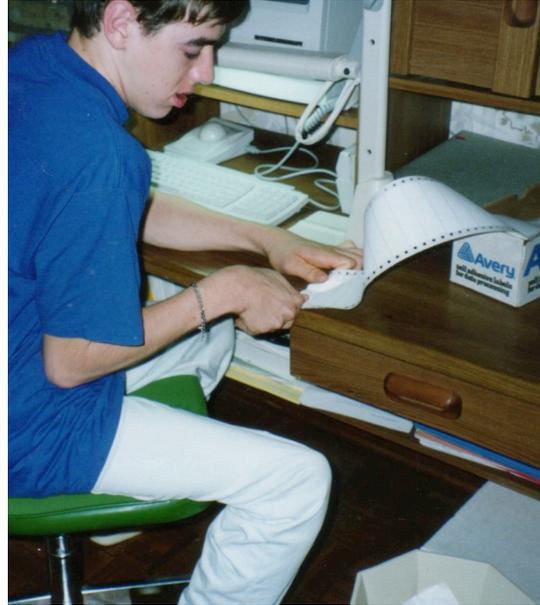


**Examples of Outcomes in Occupational Performance:
Digit Dissociation and Pincer Grasp Needed for
ADLs, Education, and Work**

Elementary School: Activities of
Daily Living (ADLs)
Grasping and eating finger food



Adolescence: Education
(Pre-vocational)
Manipulating labels



Adolescence: Education
(Formal educational participation)
Typing on keyboard



Young Adulthood: Work
(Job performance)
Sorting hardware from salvage

