Information on Developmental Cognitive Disabilities

Terminology and Definitions

**Intellectual and Developmental Disability**
not "mental retardation"

Definition: "significant limitations both in intellectual functioning and in adaptive behavior . . . " (Hallahan, p. 104)

**Intellectual Functioning and IQ**

\[ IQ = 100 \times \frac{\text{mental age}}{\text{chronological age}} \] (p. 112)

**Classification of DCD** (p. 106)

- **Mild**: IQ of 50-70
- **Moderate**: IQ of 35-50
- **Severe**: IQ of 20-35
- **Profound**: IQ below 20

**Adaptive Behavior = Social Intelligence + Practical Intelligence** (p. 104)

- **Social Intelligence**: "understanding and interpreting people and social interactions" such as reading emotions (p. 104-105)

- **Practical Intelligence**: "the ability to solve everyday problems such as preparing meals,

Causes of DCD


**Perinatal** (during birth): Improper position of the infant in the uterus, a complete cutoff of oxygen, low birthweight, and transfer of certain STDs from mother to child.

**Postnatal** (after birth): Infections of meningitis and especially encephalitis, malnutrition, and exposure to toxins after birth can lead to DCD.

Common Genetic Syndromes

**Down Syndrome**: Genetic but not inherited form of DCD usually caused by a triplet set of the 21st chromosomes. Downs is the most common form of IDD at birth. The severity of the disability is usually moderate. However, with intensive special education, more children are placed in the mild ID range according to IQ scores (Hallahan, p. 108).

**Fragile X**: Occurs when an X chromosome in the 23rd pair is pinched at the bottom. Females are less affected by the syndrome because they have two X chromosomes. This is the most prevalent cause of DCD from inherited traits. Most are affected moderately by cognitive disability; however, it is possible for some people with Fragile X to be within the normal range of Intelligence (Hallahan, p. 109). Prader-Willi: Caused by an atypical chromosome, usually inherited from the father. In infancy, those affected have trouble eating. By approximately age 1, the opposite occurs—over consumption of food is a pervasive problem. The cognitive effect Prader-Willi has on people is relatively mild (70 average IQ score). It is possible to have an IQ score in the normal range (Hallahan, p. 110).

**Williams**: The lack of material on the 7th pair of chromosomes causes this condition. It is usually not passed down through families. Cognitive function is

Common Challenges for People with DCD

**Working Memory**: "the ability to keep information in the mind while simultaneously doing another cognitive task" (Hallahan, p. 113)

**Metacognition**: being aware of, implementing, and evaluating cognitive strategies (p. 113)

**Self-Regulation**: a component of metacognition, it is "the ability to regulate one's own behavior"

**Gullibility** (p. 113)

**Learned Helplessness** (p. 124)

Adult Living and Employment for People with DCD

**Community Residential Facilities (CRFs)** are becoming more typical for housing (Hallahan, p. 125).

Some advocate for supported living, which resembles more of a typical residence (Hallahan, p. 127).

Two main avenues of employment are supported workshops (no integration) and supported competitive employment (Hallahan, p. 128-129).

The Arc of Minnesota

Active in state and federal public policy.

Issues of public policy include:

- Voter ID amendment
- 2012 Health and Human Services bill
- Changing laws on use of prone restraint (a student is held to the ground on their stomach by two or more adults).
Exceptional Learners Chapter 5

* These might show up in an IEP

Functional Academics: “teaching academics in the context of daily living skills” (Hallahan, p. 116)

Systematic Instruction: “the use of instructional prompts, consequences for performance, and strategies for the transfer of stimulus control” (p. 117)

Constant Time Delay: request and prompt are given simultaneously (p. 117)

Progressive Time Delay (p. 117): the time between request and prompt gradually increases

Minnesota Department of Education
Promising Practices

- Minnesota-specific information
- Historical Perspectives on DCD
- Eligibility Criteria
- Information for Assessing IQ and Adaptive Behavior
- Worksheets for Identifying and Observing Students with DCD

*Find the full document online here:
http://education.state.mn.us/MDE/EdExe/SpecEdC
tass/DisabCateg/DevelopCogDisab/index.html

Reading Instruction
(Scruggs)

Vocational Instruction should not displace reading instruction

“Reading is the cornerstone of instruction for all students regardless of ability level” (par. 1)

Letter-Sound Correspondence

Phoneme Blending

Sight Words

Community-Based Instruction
- Adaptive Behavior
- emphasis on comprehension across contexts

*Read the full paper online at
http://www.cehs.wright.edu/~prenick/Winter_Spring_08_Edition/webpages/april_scruggs.htm

Writing Instruction
(Brandrik, p. 129-130)

- Important to provide clearly detailed instructions in visual or written form. Do not rely on oral instructions; recall that students with DCD have difficulty with working memory.

- Lessons that include "multiple intelligences"
  - all students contribute to the learning process

- Think-alouds and modeling

DO-IT: Washington University

Disabilities, Opportunities, Internetworking, and Technology.
www.washington.edu/doi/ Brochures/Academics/accom_ld.html

First used at Washington University for students in science, math, and engineering.

Premise is to provide equal access.

Strategies include:
- Keep instructions brief. Repeat verbatim.
- Use multiple methods to present material (auditory, visual, kinesthetic)
  - Convert printed text into electronic files.
  - Provide printed materials early.
  - Use multiple methods for assessment.
  - Make distance learning courses more accessible (avoid real-time chat) (Washington University, 2012)

Project IDEAL: Informing & Designing Education for All Learners

Practical teaching strategies include:
- Teach one concept at a time.
- Teach one step at a time (reinforcement of sequence).
- Teach in small groups or individually.
- Provide numerous opportunities to practice skills in different environments.
- Prelinguistic milieu teaching may help with literacy (linking interests and ability of the student).
- Use of tools that are age and subject appropriate.