Developmental Cognitive Disabilities

(Chapter 5 - Intellectual and Developmental Disabilities)
Terminology and Definitions

**Intellectual and Developmental Disability** not "mental retardation" (Hallahan, p. 103)

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

**Self-Determinism**: "the ability to act autonomously, be self-regulated, act in a psychologically empowered manner, and act in a self-realized manner" (p. 122)

**Person-Centered Planning**: A model that allows individuals with DCD to make their own choices while professionals assist them in meeting their personal goals (p. 124)

**Common Challenges for People with DCD** (p. 113)

**Working Memory**: "the ability to keep information in the mind while simultaneously doing another cognitive task"

**Metacognition**: being aware of, implementing, and evaluating cognitive strategies

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

**Gullibility**

**Learned Helplessness** (p. 124)
IQ

IQ = 100 x (mental age / chronological age)  
(Hallahan, 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

IQ can be improved! (p. 105)

Adaptive Behavior

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, using transportation systems, making change, [and] using the internet" (p. 105)
Causes of DCD/IDD

- Approximately half of all cases of DCD have no identifiable cause.
- Causes of DCD can be broken down into prenatal, perinatal, and postnatal categories (Hallahan, p.107).
- Prenatal causes include chromosomal disorders, inborn errors of metabolism (accumulation of phenylalanine), structural formation of the head and brain, and environmental factors (108).
- Problems at birth that contribute to DCD include improper position of the infant in the uterus, a complete cutoff of oxygen, low birthweight, and transfer of certain STDs from mother to child.
- Infections of meningitis and especially encephalitis, malnutrition, and exposure to toxins after birth can lead to DCD.
- Abuse, neglect, and understimulation (minimal interaction and resources) are psychological causes of IDD (Hallahan, p.111).
Common Genetic Syndromes

- **Down Syndrome**: Genetic but not inherited form of DCD usually caused by a triplet set of the 21st chromosomes. Down’s 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).
  - **Strengths**: Visual-Spatial & Visual-short term memory.
  - **Weaknesses**: Expressive language & grammar, and deciphering facial emotions (Hallahan, p.116).

- **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).
  - **Strengths**: Expressive language, adaptive behavior, and long-term memory.
  - **Weaknesses**: Reading, social anxiety, and short-term memory (Hallahan, p.116).
Common Genetic Syndromes

- **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—overconsumption 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).
- Strengths: Visual processing, good with jigsaw puzzles.
- Weaknesses: OCD tendency, obesity, auditory comprehension (Hallahan, p.116).

- **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 mildly to moderately affected (Hallahan, p.110).
- People with Williams Syndrome are very trusting, caring, and perceptive to the feelings of others.
- Strengths: Storytelling, music
- Weaknesses: Fine-motor skills, being too friendly (easily taken advantage of) (Hallahan, p.115-116).
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 sheltered workshops (no integration) and supported competitive employment (Hallahan, p.128-129).
The Arc of Minnesota

- [www.thearcofminnesota.org](http://www.thearcofminnesota.org)
- 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

*Click [here](#) to find the full document online*
Teaching Students with DCD

**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 [here](#)*

**Writing Instruction** (Brandvik, 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 difficult with working memory.
- Lessons that include "**multiple intelligences**"
  - all students contribute to the learning process
- **Think-alouds** and modeling
DO-IT: Washington University

- 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)
Memory recall, task and skill generalization, problem solving, and setting goals are possible areas of difficulty (Project IDEAL, 2008).

- Students with DCD learn independent living skills best in the environment in which they will utilize these skills the most.

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.
Other Sources (Provided by IDEAL)

- Best Buddies.  [www.bestbuddies.org](http://www.bestbuddies.org)
- Elwyn.  [www.elwyn.org](http://www.elwyn.org)
- National Association for Down Syndrome.  [www.nads.org](http://www.nads.org)
- The Arc of the United States.  [www.thearc.org](http://www.thearc.org)
- The Voice of the Retarded.  [www.vor.net](http://www.vor.net)
References

http://www.thearcofminnesota.org


http://www.washington.edu/doit/Brochures/Academics/accom_ld.html


Project IDEAL (2008). *Intellectual Disabilities*
http://www.projectidealonline.org/intellectualDisabilities.php

http://www.cehs.wright.edu/~prenick/Winter_Spring_08_Edition/webpages/april_scruggs.htm