Direct Instruction

- Direct Instruction
  - Also Called Teacher-Centered Instruction
  - Expository Teaching
  - Didactic Teaching
- Does Direct Teaching Have Bad PR?
  - “Few pedagogic devices . . . have been repudiated more unequivocally . . . than expository verbal instruction”
    - David Ausubel, Human Learning
- But Direct Instruction Can Be Efficient

Direct Instruction and Constructivism

- Prior Knowledge is Important
  - New knowledge must connect to LTM
- Is Direct Instruction Compatible with Constructivism?
  - Remember that psychological constructivism is a theory of learning rather than a theory of teaching.
- Evidence Against Minimally-Guided Instruction
Advance Organizers

- An Advance Organizer is a Framework
  - Such as: An Outline, Overview, Diagram, or Table of Contents
  - Can Promote Schema Activation
- Associated with Direct Instruction

Time and Learning

- Problem: Students Vary in How Much They Learn
- Why?: Students Learn at Different Rates
- Carroll’s Model
  - Why not let time vary, rather than achievement?
- What Kind of Time?
  - Academically engaged time
  - Or “time on task”

Mastery Learning

- Based on Carroll’s Model of Time and Learning
- Mastery Learning Proposed by Benjamin Bloom
  - Also of Bloom’s Taxonomy
- Assumes All Students Can Learn Content
- Instruction Followed by Mastery Tests
  - Students are not allowed to progress until they demonstrate mastery (e.g., 90%)
  - Many students require extra time or extra help, including tutoring
- Generally Positive Effects
- Does Mastery Learning Close Gaps?
  - Some evidence for this
  - Why? Because more students had entry skills
Discovery Learning

- Learner-Centered
- Uses Inductive Reasoning
  - One form of inference
  - Inference is "going beyond the information given" (Bruner)
  - Induction is reasoning from specific instance to general principle
- Is Discovery Learning Efficient?
  - Not always

Socratic Dialogue

- Socrates
  - The most "ignorant" man in Athens . . . but at least he knew that he was ignorant.
- Socratic Dialogue as a Teaching Method
  - Questions posed by teacher
  - Questions answered by student
  - Purpose: To spark thinking
- What Was Socrates’ Goal?
  - Student admits ignorance
  - Now, he and Socrates both know that they are ignorant
  - Then real learning proceeds
  - Does learning require humility?

Inquiry

- Inquiry as a Guiding Goal of Education
  - Similar to discovery learning (but larger in scope)
  - Related to constructivism
  - Why? Students are active during learning
- Science Education, Especially
  - National Science Education Standards
- Broad Meaning of Inquiry
  - Not only lab experiences
  - Also, writing, reading, discussions
  - Expands what is meant by "scientific method"
Reciprocal Teaching

- Promotes Reading Comprehension
- Initially Led by Teacher
- Students Assume Teaching Roles
  - Turn taking
  - Assignment of Roles
- Promoting Learning Through Text Comprehension
- Used at a Wide Range of Grade Levels
  - Elementary through University

Aptitude-Treatment Interactions

- ATIs
- A Valid Intuition
  - Different students require different experiences
- What is an Aptitude?
  - Cognitive trait
  - Or personality trait
  - Or any trait relevant to instruction
- What is a Treatment?
- ATIs Are About Matching Treatment to Aptitude for Optimal Learning
  - Like organism to ecological niche

More About ATIs

- Aptitude is About Fit
  - Similar to adaptation in biology, or fitness for particular niches
  - No single best aptitude
  - No single best treatment
- The Most General ATI
  - Intelligence and Degree of Structure
- Higher-Level Interactions
  - Can ATIs become too complicated?
Cognitive Styles

- Styles versus Abilities
- Value-Differentiated Rather Than Value-Directional
  - More is not necessarily better
- Examples of Styles
  - Field Independence
  - Impulsivity vs. Reflectivity
- Are Styles Important?