Critical Thinking

• Another Major Category of Cognition
• What is Critical Thinking?
  – The evaluation of ideas for their quality, especially in judging whether they make sense
• A Critical Thinker Might Ask.
  – Is the reasoning clear?
  – Does one idea follow from another?
  – Are the ideas backed by evidence?

Concept Learning

• Concrete and Abstract Concepts
• Learning Concepts By Their Features
  – Defining features (rule formation)
    • A bird has [feathers]. . . A bird does [lay eggs]. . .
  – Typical features (prototype)
    • A [typically] bird flies, sings, perches in trees
• Learning Concepts By Examples and Nonexamples
  – Borderline cases can hep (Pluto, dolphins)
  – Superordinate and subordinate concepts
  – Basic concepts (mammal, DOG, spaniel)
Inferential Reasoning
• Inference is Going from the Known to the Unknown
• The Main Types of Inferential Reasoning
  – Inductive reasoning
    • From specific instance to general principle
    • Scientific discoveries often involve induction
  – Deductive reasoning
    • From general principle to specific instance
    • Scientific applications often involve deduction

Transfer
• Transfer is the Application of Knowledge Learned in One Setting to a Different Setting
  – Buying paint
• Types of Transfer
  – Positive and negative transfer
  – Near and far transfer

Learning Strategies
• Simple Rehearsal is One Way to Learn
  – Repetition, total time matters
• Enhancing Learning from Text
  – Distinguish the most important ideas:
    Underline/highlight
  – Find structure: Draw a diagram; Outline
  – Elaborate: Write comments
• Mnemonics
  – Keyword mnemonic (Involves imagery)
    • (Haydn/Classical: “hiding” in a “class”)
  – Acronyms (ROY G BIV) (EGBDF)
More Learning Strategies

- **Concept Mapping**
  - Nodes and links

- **Self Talk**
  - What is interesting and important?
  - What seems questionable or incorrect?
  - Do I understand?

Types of Research

- Correlational
- Qualitative
- Experimental

Time Management

- **Massed vs. Distributed Practice**
  - A “law” of learning
  - For a set amount of study time, how is it best arranged?
    - Spread it out rather than bunch it together

- **Goal Setting**
  - Proximal goals
    - Rather than distal
  - Specific goals
    - Rather than general