

## Learning Outcome Taxonomies and Frameworks

### Benjamin Bloom's Taxonomy

- Cognitive
  - Remember
  - Understand
  - Apply
  - Analyze
  - Evaluate
  - Create
- Affective
- Psychomotor

### L. Dee Fink's Taxonomy of Significant Learning

- Foundational knowledge: Understanding and remembering information and ideas
- Application: Skills, thinking (critical, creative, practical), managing projects
- Integration: Connecting ideas, people, realms of life
- Human dimension: Learning about oneself and others
- Caring: Developing new feelings, interests, values
- Learning how to learn: Becoming a better student, inquiring about a subject, self-directed learning

### Art Costa and Bea Kallick's 16 Habits of Mind

- Persisting
- Thinking and communicating with clarity and precision
- Managing impulsivity
- Gathering data through all senses
- Listening with understanding and empathy
- Creating, imagining, innovating
- Thinking flexibly
- Responding with wonderment and awe
- Thinking about thinking (metacognition)
- Taking responsible risks
- Striving for accuracy
- Finding humor
- Questioning and posing problems
- Thinking interdependently
- Applying past knowledge to new situations
- Remaining open to continuous learning

### **Bob Marzano and Deb Pickering's Dimensions of Learning**

- Attitudes and perceptions (e.g., experience a sense of comfort and order, perceive tasks as valuable and interesting)
- Acquire and integrate knowledge
  - Declarative (construct meaning, organize, store)
  - Procedural (construct models, shape, internalize)
- Extend and refine knowledge (compare, classify, inductive and deductive reasoning, analyze errors, analyze perspectives)
- Use knowledge meaningfully (decision making, problem solving, invention, experimental inquiry, investigation, systems analysis)
- Habits of mind
  - Critical thinking (seek accuracy, seek clarity, maintain an open mind)
  - Creative thinking (persevere, generate new ways of viewing situations)
  - Self-regulated thinking (plan appropriately, identify and use necessary resources, respond appropriately to feedback)

### **Bob Marzano and John Kendall's Taxonomy of Educational Objectives**

- Knowledge
  - Information
    - Details (vocabulary terms, facts, time sequences)
    - Organizing ideas
    - Principles
  - Mental procedures
  - Psychomotor procedures
- Levels of processing
  - Retrieval
  - Comprehension (integrating, symbolizing)
  - Analysis (matching, classifying, analyzing errors, generalizing, specifying)
  - Knowledge utilization (decision-making, problem-solving, experimenting, investigating)
  - Metacognition (specifying goals, process monitoring, monitoring clarity, monitoring accuracy)
  - Self-system thinking (examining importance, efficacy, emotional response, and overall motivation)

### **Transferable, Generalizable Skills and Dispositions Valued by Today's Employers**

- Teamwork and collaboration, including listening
- Written and oral communication, especially articulating ideas clearly and effectively
- Real-world problem solving, especially complex problems, under pressure or "on the fly"
- Critical thinking and analysis, especially in evaluating information and conclusions
- Flexibility and adaptability to change, including the capacity to continue learning
- Creativity and innovation
- Intercultural knowledge and skills, especially working with people from diverse cultural backgrounds
- Ethical judgment
- Quantitative and computer skills, especially understanding numbers and statistics

Suskie, L. (2018). *Assessing Student Learning: A Common Sense Guide* (3<sup>rd</sup> ed.). San Francisco, CA: Jossey-Bass.