Knowledge, skills, and abilities

Recap
- General theories of learning, motivation
- History and current directions of OB

Goals
- Review basic “knowledge” concepts
- Begin reviewing key individual skills and abilities
Identifying relevant characteristics

- Job analysis
  - Identify tasks associated with a job
  - Identify Knowledge, Skills, Abilities, & Other characteristics (KSAOs) needed for successful performance
- O*net job database

Knowledge

Paul left his book sitting in the library, and someone stole it.

- Name (gender)
- Book
- Theft
- Library
- Circumstances surrounding “thefts”
Knowledge
- Definition: An individual’s personal stock of information, skills, experiences, and memories.
  - Dynamic
  - Interactive

Categories of knowledge
- Explicit
  - Conscious access, awareness of knowing
- Implicit (tacit)
  - Unconscious access, lack of awareness of knowing

Categories of knowledge
- Declarative
  - Specific facts and events (i.e., “what”)
- Procedural
  - Familiarity with process and routines (“how”)
- Conditional (strategic)
  - When to apply or use other knowledge (“when”)
Organization of knowledge

- Training
- Hard work
- Spreading activation
- Job performance
- Performance appraisal
- Promotion
- Ability

Cognitive network

Schema

- “Bundle” of knowledge, generic concepts about specific situations
  - Heuristic – a cognitive shortcut
  - Simplified internal (cognitive) model of reality
    - Helps identify, classify stimuli
    - Encode, retrieve information
    - Make decisions
      - Good – help us make decisions on incomplete, partial, or bad information
      - Bad – can lead to stereotypical thinking, bias

What is this?
1. Flight and swim
2. Purple
3. Yellow bill
4. Webbed feet
Expert and novices
- Experts have “richer” schemas – better at recognizing key features and patterns
- Experts have more content knowledge, but it’s organized differently

Source: Bradford, Brown, & Cocking, 1999; Chi et al., 1981

Expert knowledge is more conditional
Schemas

- Scripts: Type of schema; ordered sequence of events associated with familiar activity
  - Examples: taking test, going to restaurant, negotiation in organizations

Schema

- Current research
  - Identifying content of particular mental models and schema (e.g., fighter pilots, ATCs, doctors)
  - Developing training, decision aids (e.g., expert systems) based on expert models
  - Shared mental models (team and group research)

Skills and abilities

- Skills: Task-related proficiencies

- Skills vs abilities
  - One distinction: Trainable vs. more innate
  - Sometimes used interchangeably
Model of human skills and abilities

- Fleishman’s (1972) taxonomy
  - Cognitive ability
  - Psychomotor
  - Physical
  - Perceptual

Psychomotor

- Coordination of movement and senses
  - Fleishman – 11 separate factors
  - Current models (e.g., Ree and colleagues, 2000) – one general “psychomotor” ability factor

Physical skills/abilities

- Fleishman’s taxonomy (11 factors)
- Hogan (1991) – 3 general factors
  - Muscular strength
  - Cardiovascular endurance
  - Movement quality
Perceptual abilities
- Fleishman – 12 perceptual abilities
  - Night vision, depth perception, quality of hearing

Social/emotional skills
- Social intelligence – E. L. Thorndike
- Emotional Intelligence (EI/EQ)
  - Ability model – EI as an intellectual ability
  - Trait model – EI as personality trait
  - ‘Mixed’ model – elements of both

Emotional intelligence
- Ability model – Salovey & Mayer (1990; 1997)
  - Ability to perceive/appraise emotions in self and others
  - Ability to facilitate thought processes with emotion
  - Ability to understand and analyze emotions
  - Ability to regulate or manage emotions
Emotional intelligence

- Trait model – Petrides & Furnham (2000)
  - Described as “emotional self-efficacy”
  - Self-perceptions of (for example)
    - Adaptability
    - Emotional perception, expression
    - Impulse control
    - Empathy
    - Stress coping

Criticisms of EI

- Construct validity issues
  - Ability or personality trait?
  - Incremental validity (utility) over existing individual differences (e.g., cognitive ability, traditional personality factors)?
- Measurement issues
  - Appropriateness of self-report measures to an “ability”

Next week

- Review first test, talk about presentations
- Start talking about models of personality and cognitive ability