



# Meta-Theory of Learning and Performance

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# **A Unified Theory???**

**There are many approaches which might be used to express the relationships among research findings for all forms of human learning. Undoubtedly, the most elegant way would be in terms of theory. A general theory of human learning ... is clearly an ideal solution. No such system is available (Underwood, 1964, p. 48).**

# A Unified Theory???

**What we do have is a mosaic of theories, models, sets of principles, and explanations that, combined, compose the knowledge base of adult learning (Merriam, 2001, p. 3).**



# Purpose and Agenda

- Present overview of major learning theories
- Identify some of the implications of these theories
- Present a systems model of learning and performance
- Identify research and implications

# **A Framework for Learning Theories**

## **Mind-Centered**

**(all learning comes from manipulations within the mind of the organism )**



## **Environment-Centered**

**(all learning comes from stimulation outside the organism)**

# Behaviorism

**Learning results from behavioral responses to external stimuli.**

- **Break information into small, simple steps**
- **Have learners make observable responses**
- **Have learners make responses multiple times (frequency)**
- **Reward responses (reinforcement)**
- **Use identical elements to transfer training**

# Cognitive Theory

**Learners are active processors of information.**

**They manipulate symbolic information.**

- **Encoding specificity leads to transfer**
- **Perceived similarity, not actual similarity**
- **Provide variety of examples to enhance transfer, leading to general rules**

# **Social Learning Theory**

**Learning can occur by observing behavior**

- without actually performing the task**
- without receiving reinforcement**

**■ Provide behavioral models**

**■ Use reinforcement to observe learning**

**■ Changes in knowledge or attitudes not needed**

# **Social Perspective Theories**

**Social and organizational context shape individual learning, knowledge, and thought.**

- Give learners opportunities to interact with peers**
- Enable learners to work with those having more experience or more skill**

# Androgogy / Self-Directed

Learning will only occur if relevant to learner.

- Include individual tasks
- Use group processes
- Incorporate critical reflection to promote discovery, self-knowledge, & self-direction

# **Situated Cognition / Constructivism**

**Learning is facilitated through  
construction of mental models**

- Give learners ill-defined problems**
- Use realistic situations or real-life tasks**
- Encourage learners to express their mental models to each other**
- Support learners by “coaching”**
- Decrease such coaching over time (“fading”)**

# Meta-Theory Overview

Social, Organizational, Personal Context



Background Knowledge

*Input*



New Knowledge



*Transfer*



Observable Behavior or Action

# **Meta-Theory of Learning**

**Social & Organizational Context**



**Training Context**



**Coaching and Fading**

**Background Knowledge & Information**

# Meta-Theory Continued

*Input Phase*

**Background Knowledge**

**Passive  
Recipients**

**Observers**

**Active  
Processors**

**Small steps**

**Models**

**Symbols**

**New Knowledge**

# **Meta-Theory Continued**

*Transfer Phase*

**Frequency**

**Reinforcement – Reward**

**Identical elements – Encoding specificity**

**Multiple examples**

**Strategy construction**

**Ill-defined problems**

**Realistic situations**

**Observable Behavior or Action**

# Meta-Theory Continued

Social, Organizational, Personal Context



Background Knowledge

*Input*



New Knowledge



*Transfer*



Observable Behavior or Action

# Theoretical Implications

- Learning occurs in social environment
- Environment affects coaching and fading
- Background knowledge affects learning
- Learning occurs with multiple methods
- New knowledge and transfer affect social environment and add to background knowledge

# Research Questions

- Are alternative training methods equally effective?
- Or, are certain approaches more effective for specific kinds of trainees, certain types of information, and specific situations?
- If the latter, which approaches are most effective for which trainees, information types, and situations?

# Research Questions

- **What are the relationships among the social and organizational context, the training environment, the level of coaching and fading, and the extent to which new knowledge is developed?**
- **What elements yield the greatest transfer?**
- **To what extent does timing of these elements have an effect?**

# Questions

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