

The Library Instructional Design (LID) Series



Facilitated by:
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[Musical overview by bvbsTeach](#)

(Photo courtesy of Rhine A. Leonard)

Welcome!

Agenda

Workshop		Date/Location
1	Learning Theories	June 14, 2012 10:00-11:30 AM Marston Science Library 107
2	Instructional Design (ID) Models	August 2012 TBD
3	Designing Instruction for Adult Learners	October 2012 TBD
4	Assessment & Evaluation	December 2012 TBD
5	Converting Existing Instructor-Led Courses to e-learning	February 2013 TBD
6	Utilizing Our Course Management System (CMS)/Learning Management System (LMS)	April 2013 TBD

Goal

The Goal of the LID Workshop Series is to provide

- Skills training in:
 - planning
 - designing
 - Implementing
 - evaluating learner-centered instruction
- Sharing best practices in instructional design
- Showcasing learning products/activities developed by library instructors



Rationale



What's In It For Me (WIIFM)?

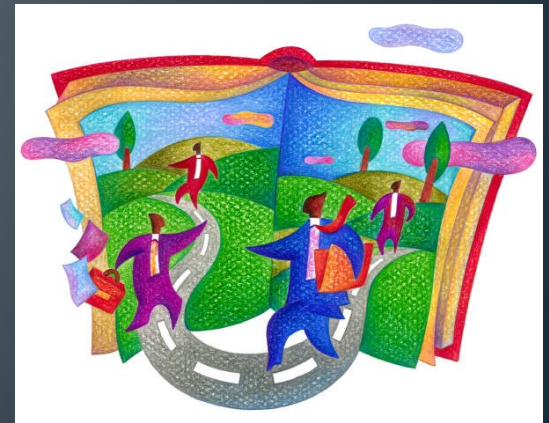
- Why are these skills important to instructors, trainers, learning facilitators?

What to Expect

- What's In The LID Series

Workshops include

- Lectures
- Discussions
- Activities
- Reflective thinking learning opportunities
- Practical application tools
- Assessments
- Demonstrations
- Showcases
- Modeling



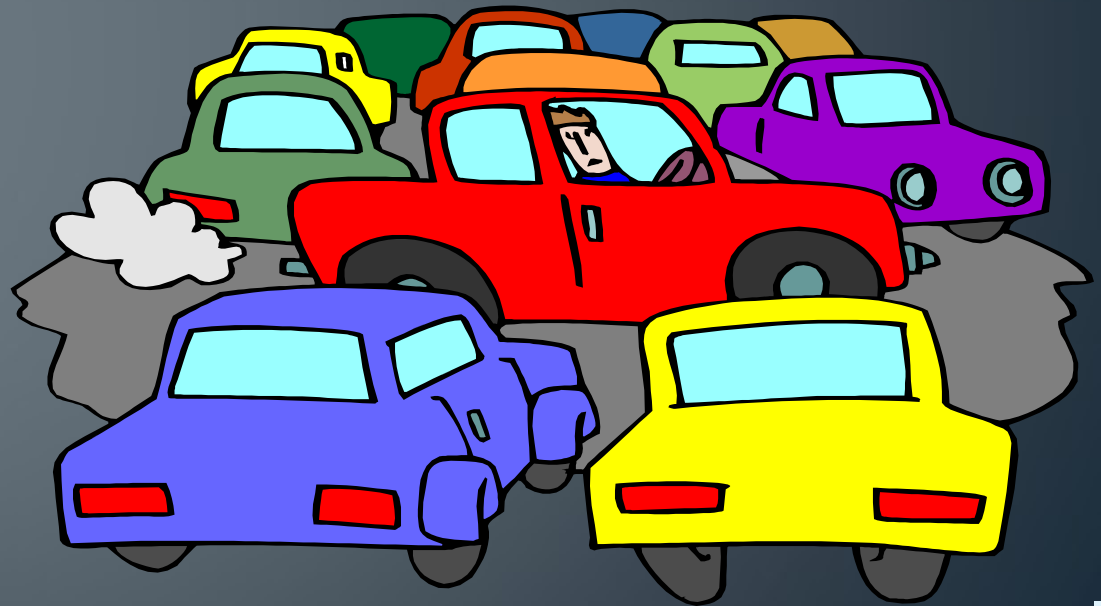
Housekeeping Items

Your workshop – make it your own

Bathrooms

We are all learners here

“Parking Lot”



Activity



Introduction to Learning Theories



(Photo courtesy of Rhine A. Leonard)

Objectives

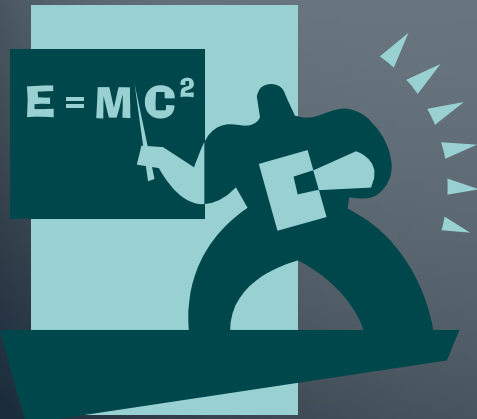
At the end of this session you will be able to:

- Define the term learning theories
- Describe basic types of learning theories
- Discuss how learning theory can inform your instruction



Learning Theories

- Learning Theories are psychological theories developed from empirical research that attempt to explain how learning occurs.
- Much of the early work with learning theories (i.e. Skinner, Bruner, Piaget) was done with children, however the relevance of the theories extends to other groups of learners.

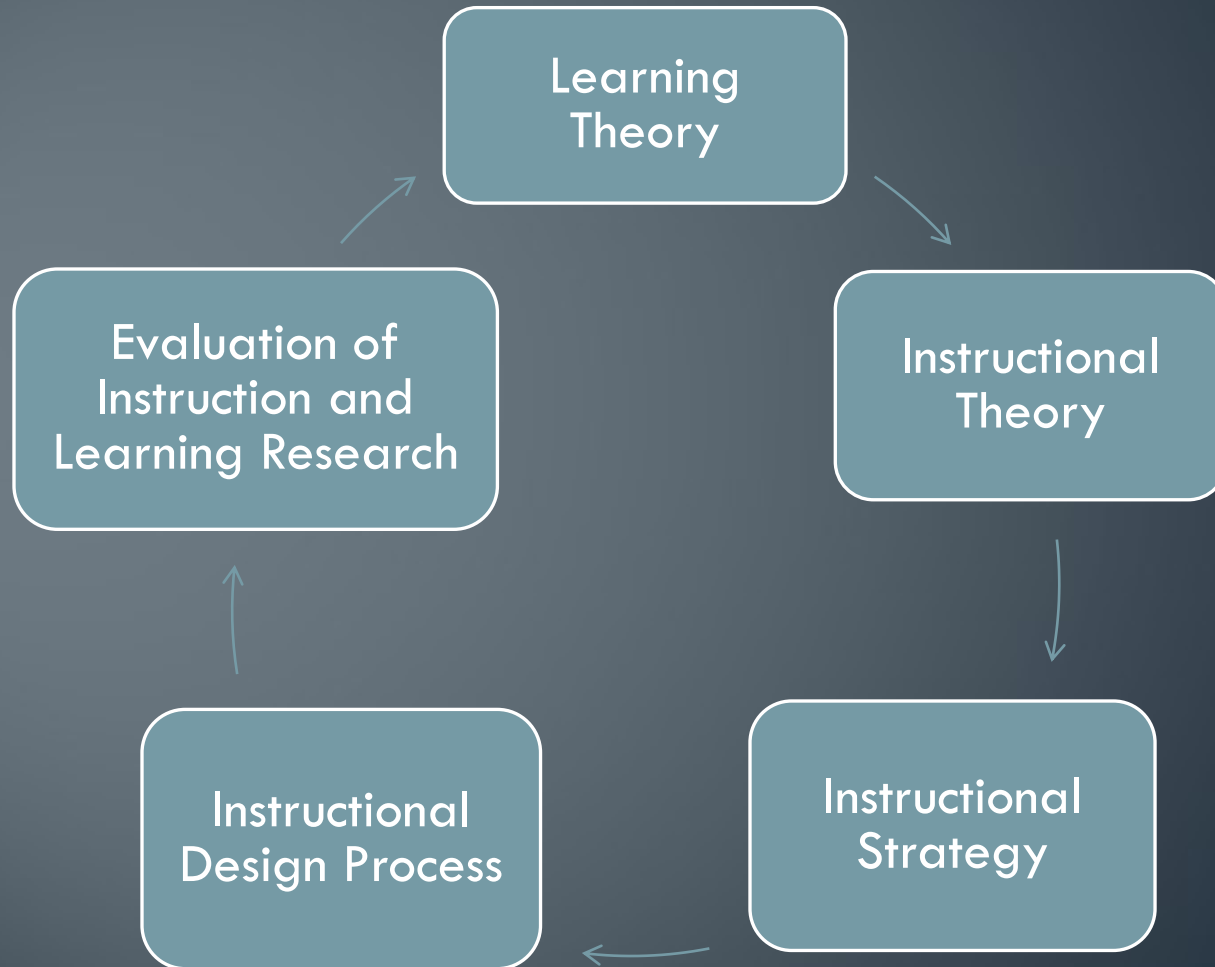


Why Bother?

- Theories that explain how we learn should influence how we provide instruction.
- Instruction should be designed and delivered with learning theories in mind to maximize learning and retention.



Learning Theories to Instruction



Epistemology

- An individual's beliefs about knowledge and knowing, e.g.,
 - How knowledge is constructed (how knowing occurs)
 - Where knowledge resides
 - How knowledge is evaluated
- Influences choices instructors make about learning and assessment methods

Epistemology Inventory Activity

- What are your beliefs about learning?

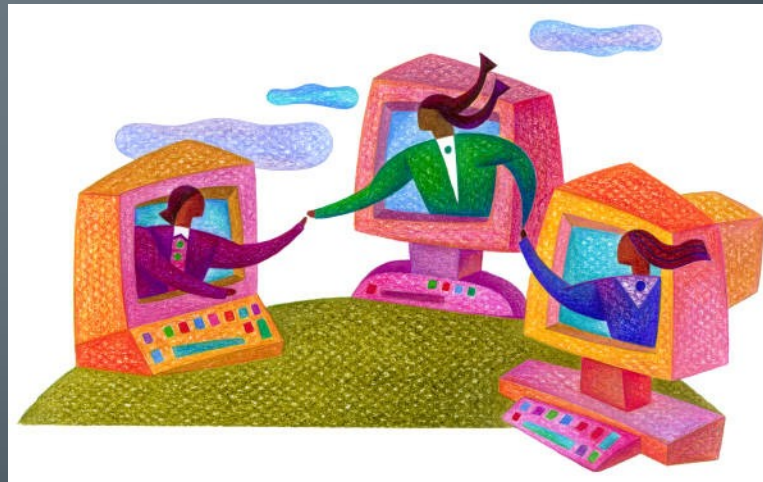


Theoretical Paradigms

- Behaviorism -
- Cognitivism -
- Constructivism -

Other Groups of Learning Theories

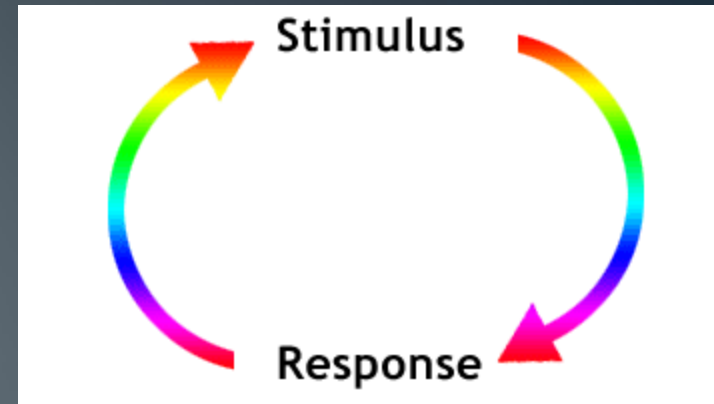
- Andragogy
- Social Learning Theories



Behaviorism

Overview

- Behaviorism concentrates on the study of observable behaviors
- Learning is seen as a response to stimuli
- The mind is viewed as a “black box”



Behaviorism

Theorists

- Pavlov (early 1900's, translated into English in 1927)
- Watson (1914)
- Skinner (1938)

Behaviorist Theories

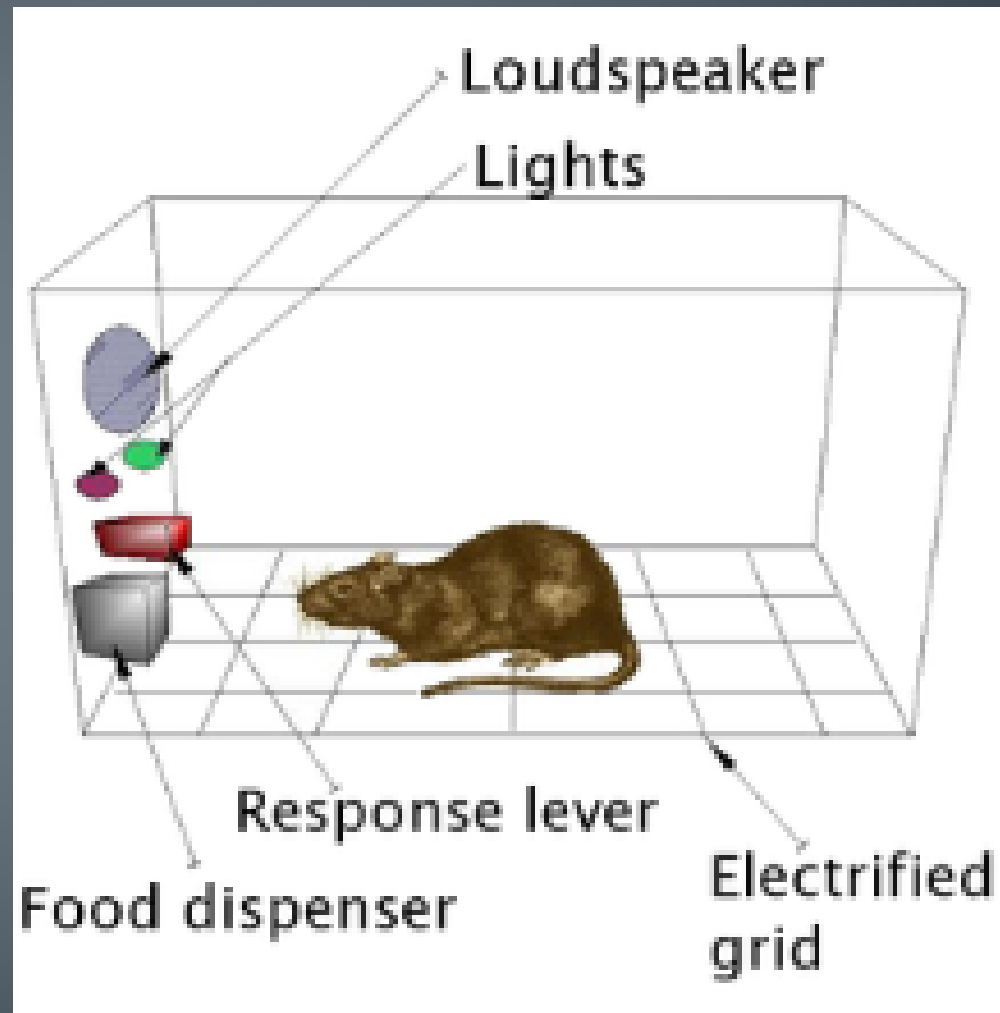
Classical Conditioning

- Pavlov and dogs
- Watson and “Little Albert”

Operant Conditioning (Skinner) –

- Skinner studied voluntary rather than involuntary behavior
- Variable interval and variable ratio produce more steady and persistent rates of response

Behaviorist Theories



Classical Vs. Operant Conditioning

- Classical Conditioning – neutral stimulus becomes associated with a reflex. The bell (a neutral stimulus) becomes associated with the reflex (salivation).
- Operant Conditioning – The learner “operates” on the environment and is rewarded for the behavior (operation). Over time there is a connection between the operation and the reward.

Behaviorism

Application

- Instruction based solely upon a behaviorist view of learning is generally passive.
- The learner is considered an “empty vessel” or “tabula rasa” and it is the instructor’s role to impart knowledge.
- “Sage on the stage” approach

Example of operant conditioning

http://www.youtube.com/watch?v=qy_mIEnnIF4

Cognitivism

Overview

- Response to behaviorist theories
- Cognitive theories include theories of memory (short and long term) and processing
- Theories I'll cover:
 - Information Processing
 - Cognitive Load
 - Dual Coding

Cognitivist Theories

- Information Processing (Miller, 1956)
 - Posits that short term memory holds only 5-9 chunks (units)
 - Chunking helps increase the storage capacity of working memory

Activity



Cognitivist Theories

Cognitive Load Theory (Sweller, 1988)

- Differences between novices and experts
- Learning requires a change in the schematic structures of long term memory
- Schema: generalized description for understanding knowledge.
- For schema acquisition to occur, **instruction should be designed to reduce working memory load.**

Cognitivist Theories

Dual Coding Theory (Paivio, 1986)

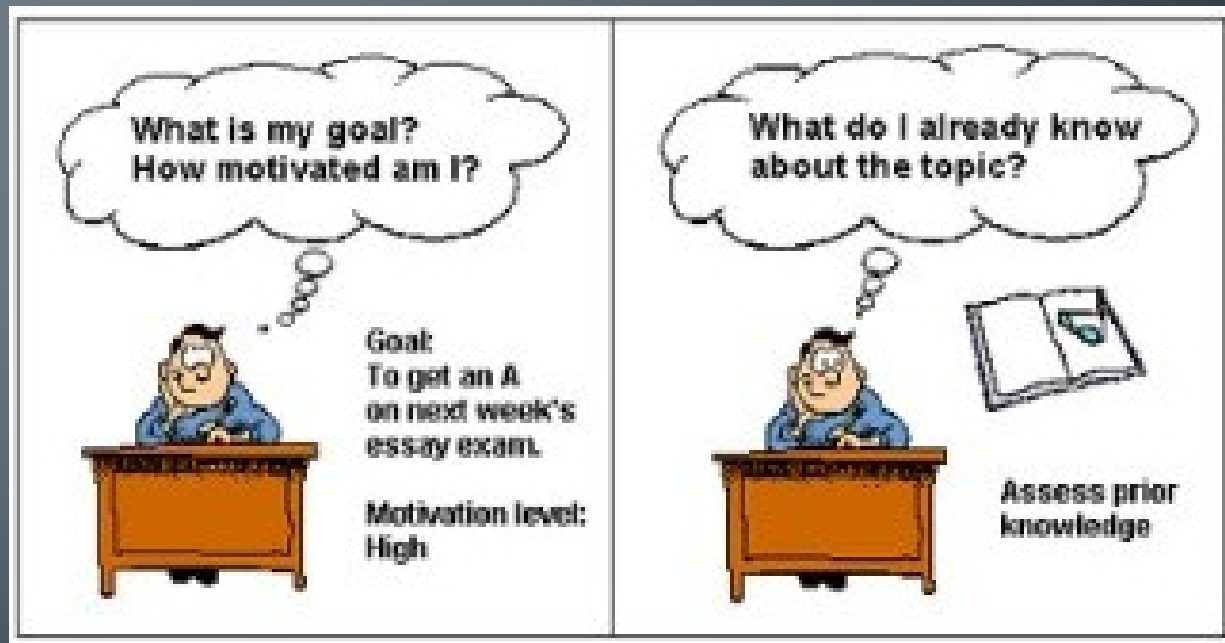
- Assumes that there are two cognitive subsystems: verbal and non-verbal
- Instruction that requires both subsystems (verbal and non-verbal) will maximize cognition and recall.



Cognitivist Theory

Application

- Cognitive strategies (e.g. metacognition)
- Message design



Activity



Review

SCHEMA

Constructivism

Dual Coding Theory

Memory

Behaviorism

Chunking

Constructivist Theory

- There are several theories that could be considered constructivist (Bruner, 1966)
- Learning is an active process where learners construct new ideas or concepts based upon their current and/or past knowledge.
- In construction knowledge, the learner:
 - selects and transforms information
 - constructs hypotheses
 - makes decisions using a cognitive structure

Constructivist Theory

Application

- Instruction based solely upon a constructivist view of learning is generally active.
- “Guide on the Side” approach
- The instructor should try to encourage self discovery of principles
- The instructor’s task is to translate information to be learned

Andragogy

Overview

- Andragogy refers to a theory of adult learning.
- Andragogy makes four main assumptions about adult learning.

Adults:

- need to know why they need to learn something
- need to learn experientially
- approach learning as problem-solving
- learn best when the topic is applicable to something of immediate value

Social Learning Theory

Overview

- Theories that describe the impact of society and social interactions on learning.
- There are several “social learning theories” and others that include social elements
- Theorists
 - Vygotsky, 1962
 - Bandura, 1977

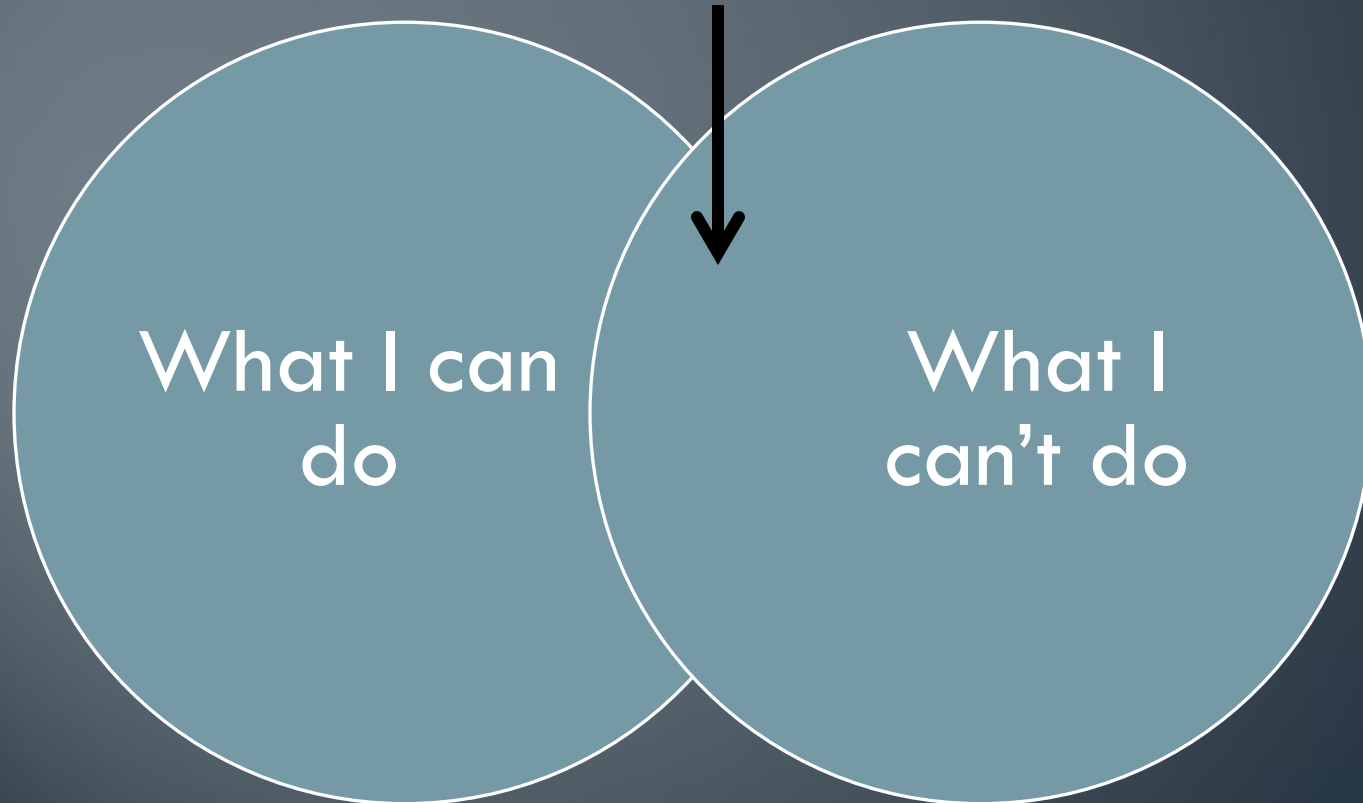
Social Learning Theories

Social Development Theory (Vygotsky, 1962)

- Social interaction plays a significant role in cognitive development.
- Zone of Proximal Development (ZPD)

Zone of Proximal Development

What I can do
with help = ZPD



Social Learning Theories

- Social Learning Theory (Bandura)
- Much of behavior is learned observationally through modeling.
- Modeling is observing the behavior of others to use as a guide for action.



Social Learning Theory

Application

- The highest level of observational learning is achieved by organizing and rehearsing the modeled behavior symbolically and then acting.
- Coding modeled behavior into words, labels, or images improves retention better than observation alone.

A few more theories...

Situated Learning (Lave, 1991; Brown, Collins & Dugid, 1989)

- Lave suggests that learning is a function of the activity, context, and culture in which it occurs.

Cognitive Apprenticeship (Collins, Brown, & Newman, 1989; Brown, Collins, & Dugid, 1989)

- Cognitive apprenticeship: "supports learning in a domain by students to acquire, develop, and use cognitive tools in authentic domain activity".

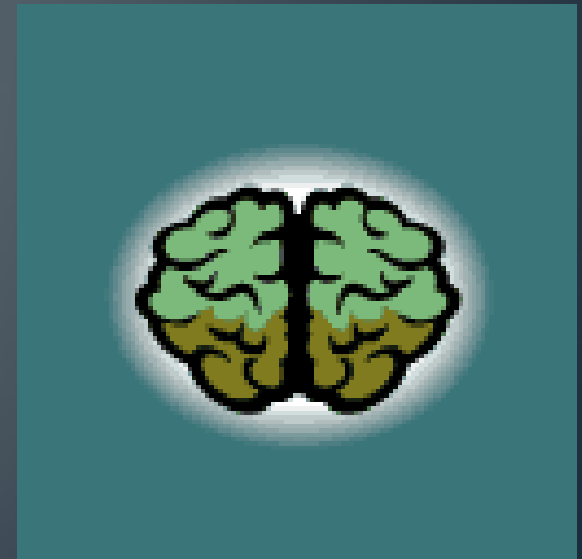
So....Which Theory to Use?

- Behavioral principles are most helpful as you are analyzing tasks into measurable objectives. Key decisions include:
 - How to administer feedback on performance
 - Whether and when to provide external incentives (points, grades, privileges)
 - The amount of learner over pacing and reinforcement to be allowed



Which Theory to Use?

- Cognitive principles are most helpful as you decide how to decide lesson content based on learners' prior knowledge and levels of development for reasoning, memory, and information processing.



Which Theory to Use?

- Constructive and social learning principles provide frameworks for enhancing student learning through allowing them to construct their own knowledge and providing opportunities to observe and interact with others.



How Do We Get from Learning Theories to Instruction?

So what do these learning theories mean for instruction?

- Learning theories directly inform instructional theories.
- Instructional theories define the core teaching strategies to be incorporated in the lesson or teaching unit.
- Help you ensure that the desired learning occurs.

Activity



Summary

- Learning theories provide explanations about the underlying mechanisms involved with learning.
- Knowledge of the learning theories drives instructional theories and instructional strategies.
- You don't have to be a theoretical purist, most instruction combines elements of various theories.

Resources

- TIPS (Theories into Practice) Database

<http://www.instructionaldesign.org/theories/index.html>

- Emerging Perspectives on Learning, Teaching, and Technology

http://projects.coe.uga.edu/epltt/index.php?title=Main_Page

- EduTech Wiki

http://edutechwiki.unige.ch/en/Main_Page

- Learning-Theories Knowledge Base

<http://www.learning-theories.com/activity-theory.html>



More Resources

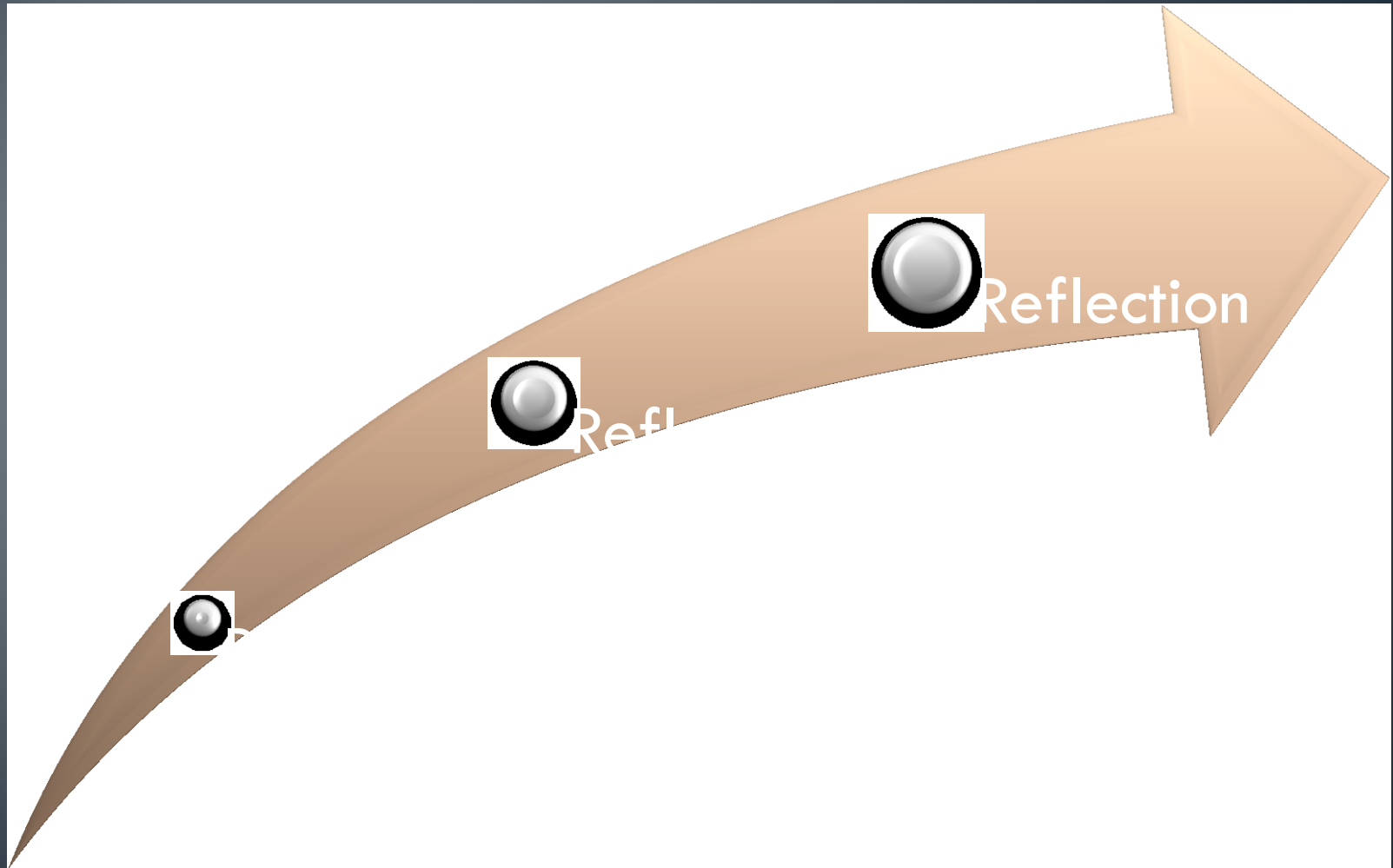


- *Telling Ain't Training*, 2002, Society for Training & Development, Harold D. Stolovitch, and Erica J. Keeps. Reprinted 2004. Eighth Printing.

Moving Forward...

We'll hear more about instructional theories in the next sessions that introduce instructional design models and overview the instructional design process.

Ticket Out Activity



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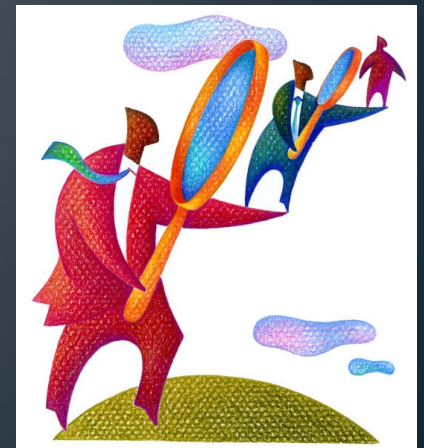
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Evaluation

Next steps...workshop evaluation



THANK
YOU