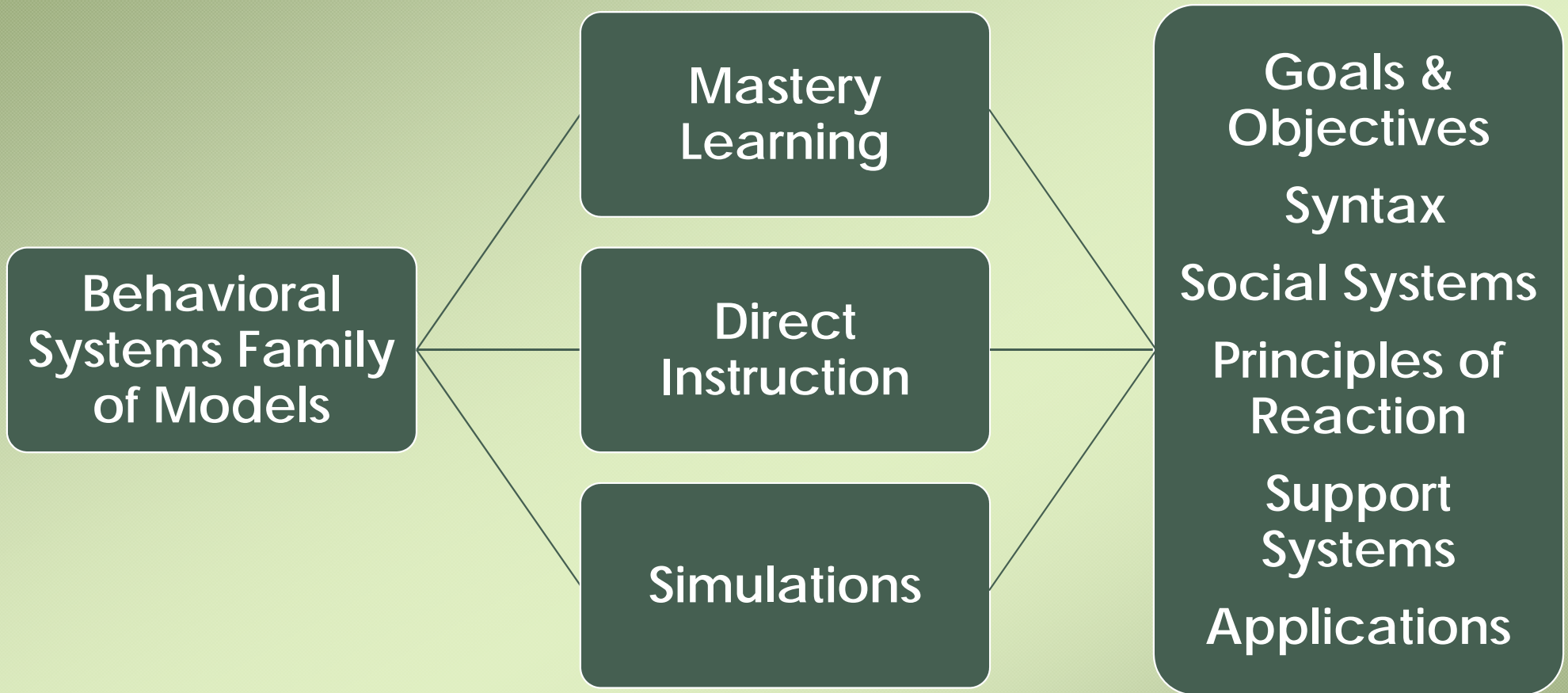




# Behavioral Systems Family of Models

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CI 703  
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**Behavioral  
Systems Family  
of Models**

**Mastery  
Learning**

**Direct  
Instruction**

**Simulations**

**Goals &  
Objectives  
Syntax  
Social Systems  
Principles of  
Reaction  
Support  
Systems  
Applications**

“ Behavior theory concentrates on observable behavior and takes an optimistic view. Given the right conditions and enough time, we can succeed in learning (and unlearning)”

(Joyce, Weil, & Calhoun, 2009, p. 351 )





# Behavioral Systems Family of Models: Principles

- Behavior is an Observable, Identifiable Phenomenon
- Maladaptive Behaviors are Acquired
- Behavioral Goals are Specific, Discrete, and Individual
- Behavioral Theory Focuses on the Here-and-Now

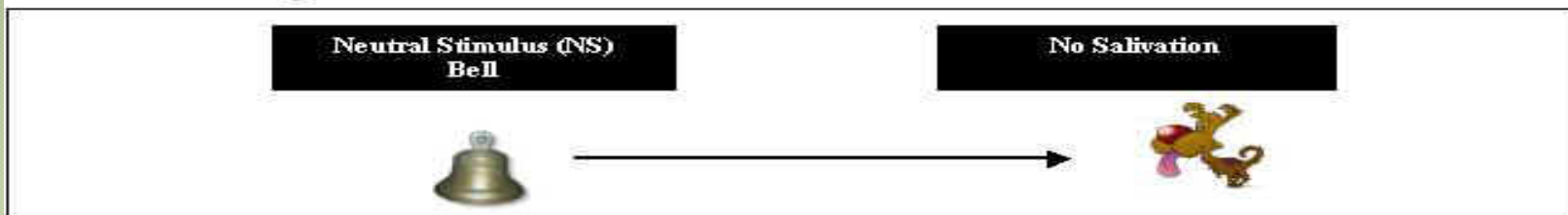
# Behavioral Systems Family of Models: Tips for Teaching

- Use positive rules with positive reinforcers
- Praise on-task students rather than reprimanding off-task students
- Allow students to teach themselves when possible because it allows students to control their own learning schedule.
- Teach students relaxation techniques and allow them to regulate their own behavior
- When students are anxious or fidgety, do not provide negative reinforcement.
- Allowing students to score their own work and correct their own papers provides motivation.



# Behavioral Theory: Classical Conditioning Example

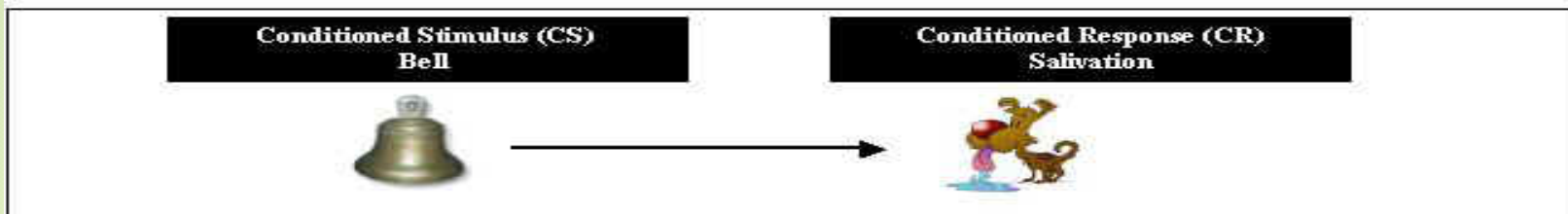
## Before Conditioning



## During Conditioning



## After Conditioning



# Behavioral Theory: Pop Culture Example



Part 1:  
Positive Reinforcement



Part 2:  
Negative Reinforcement



# Theorists and Their Contributions

- Classical conditioning – Pavlov (1927)
- Reward Theory - Thorndike (1911/1913)
- Pavlovian Principles - Watson and Raynor (1921)
- Science and Human Behavior - BF Skinner (1953)
- Behavioral principles in form of contingency management and programmed learning materials used in school settings (Late 1950s)
- Behavior Theory involves procedures emanating from both operant conditioning and counter-conditioning principles (Today).

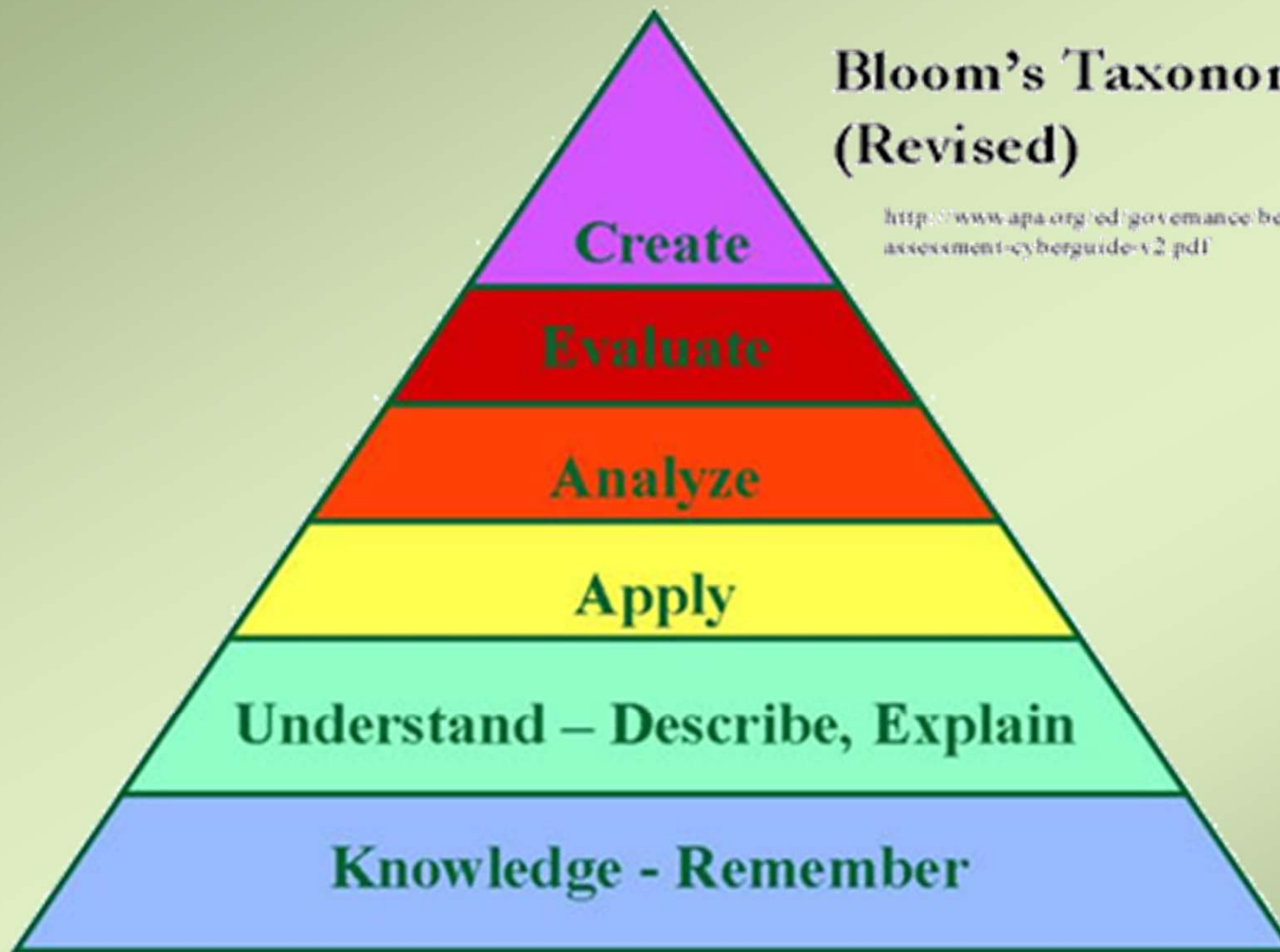


# Theorists and Their Contributions

- **Mastery Learner**- John Carroll (1971) and Benjamin Bloom (1971)
- **Direct Instruction** – Based on studies of effective teachers –theoretical origins in behavioral psychologists (address the interaction between student and instructor)
- **Simulations** – Developed from Cybernetic Group of Behavior Theorists

## Bloom's Taxonomy (Revised)

<http://www.apa.org/ed/governance/hea/assessment-cyberguide-v2.pdf>



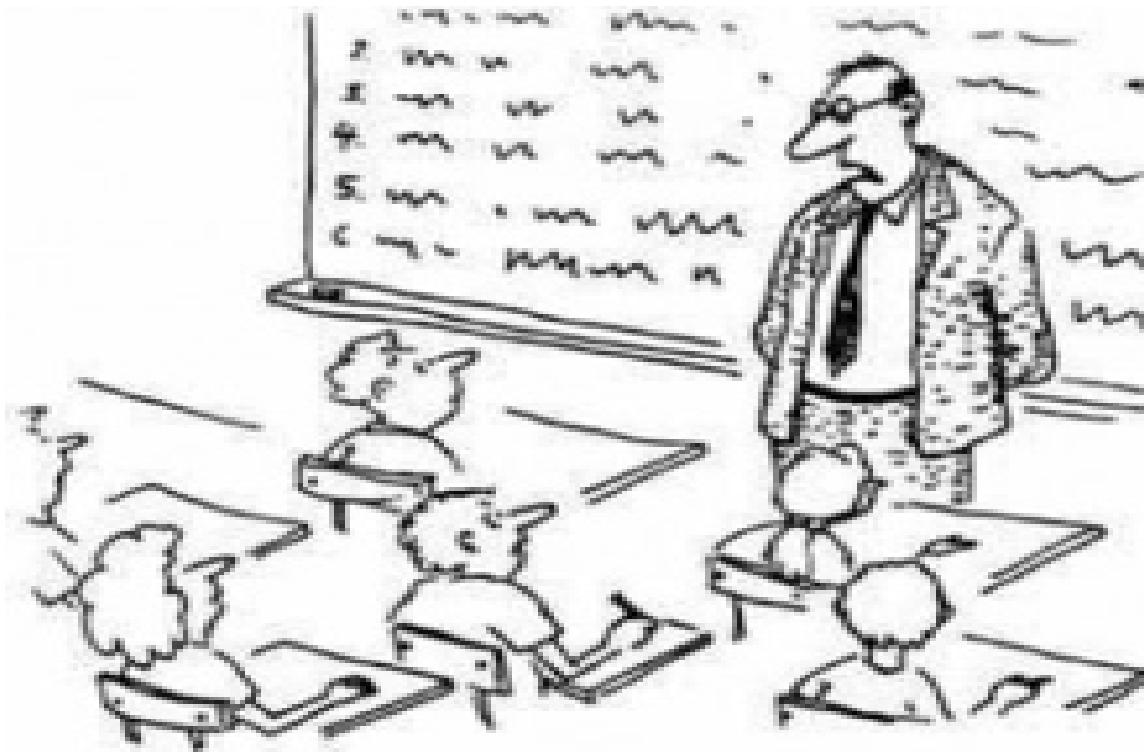
Based on an APA adaptation of Anderson, L.W. & Krathwohl, D.R. (Eds.) (2001)



# Mastering the Management of Instruction *(Benjamin Bloom)*

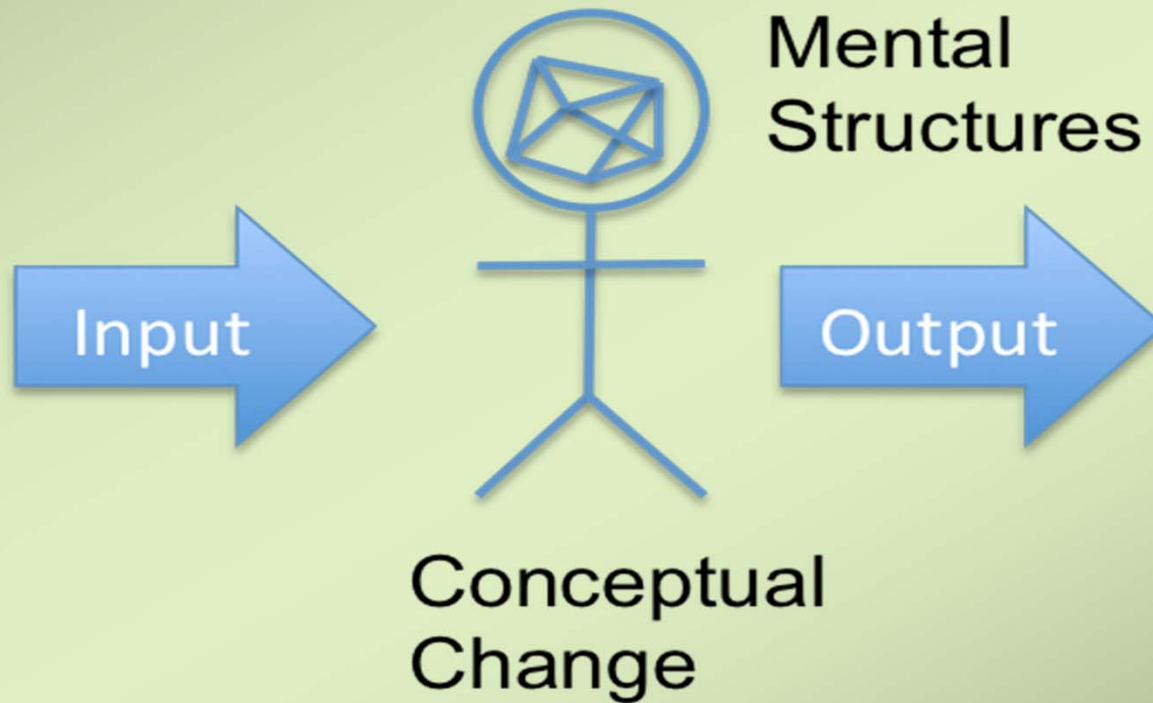
- Determine sets of major objectives that represent the purpose of the course
- Major objectives are divided into smaller learning units with their own objectives
- Learning materials are identified and instructional strategy selected
- Conduct formative evaluation and identify the problems each student is having. Knowledge of progress is given to students as reinforcement
- Data from tests are used to provide supplementary instruction to students to help overcome problems





*"I expect you all to be independent, innovative, critical thinkers who will do exactly as I say!"*

# Cognitivism/Classic Constructivism

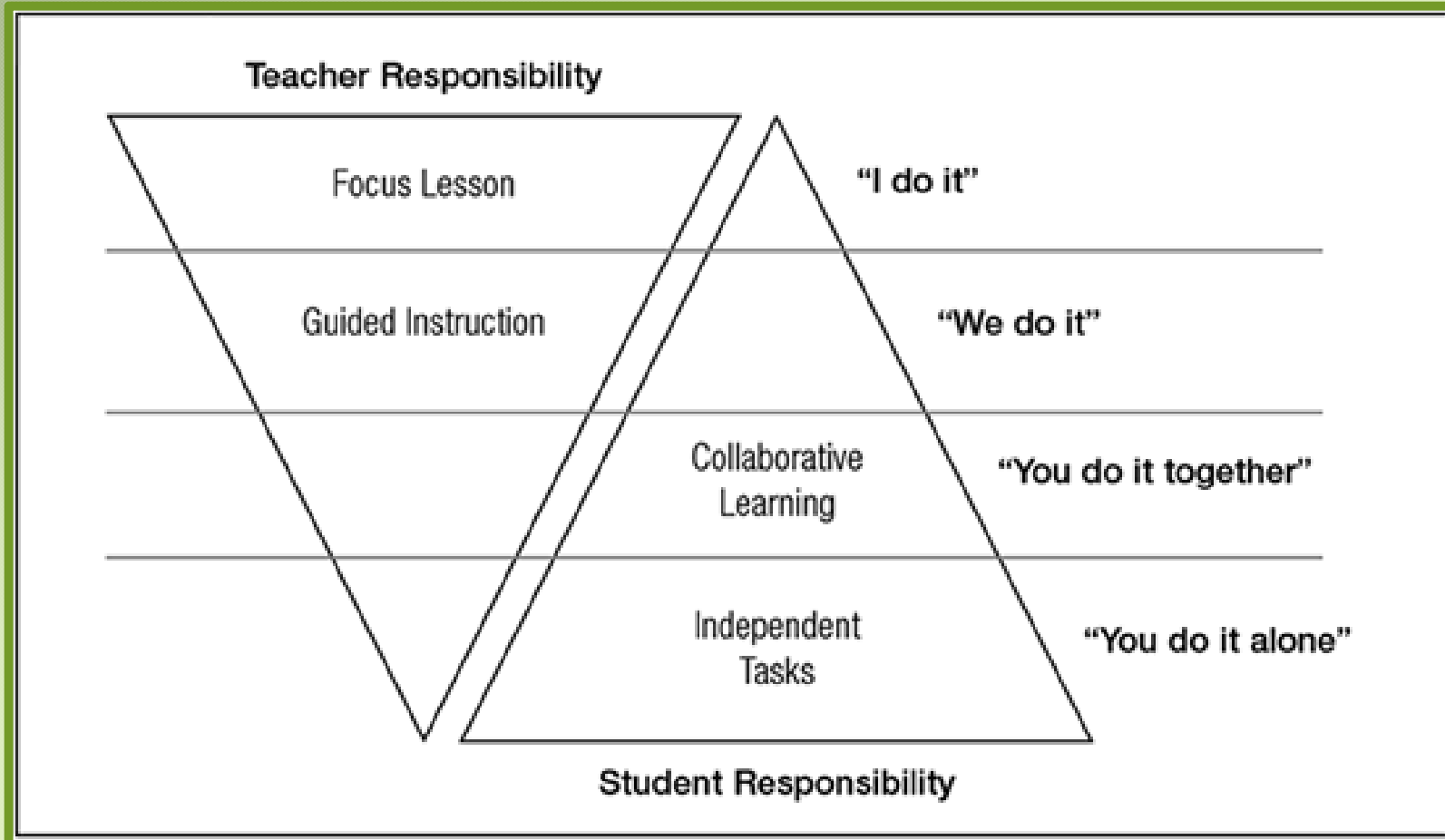


# Common Concepts to All Models

- Constructivism
- Metacognition
- Scaffolding
- Zone of Proximal Development
- Roles of Expert Performance



# Behavioral Systems Family of Models: Direct Instruction



# Behavioral Systems Family of Models: Direct Instruction

- Academic focus
- High degree of teacher direction and control
- High expectations for pupil progress
- A system for managing time
- Atmosphere of relatively neutral affect

## Goals:

- Maximization of student learning time
- Development of independence in seeking educational goals

# Direct Instruction: Academic Focus

- Academic activity is emphasized
- Use of non-academic materials is discouraged
- Non-academic interaction between student and teacher is discouraged



# Direct Instruction: Teacher Direction and Control

- Teacher selects and directs learning tasks
- Teacher maintains central role during instruction
- Teacher minimizes non-academic student talk
- Teacher demands academic excellence
- Teacher demands behavior conducive to academic progress
- Teacher expects expect more quantity and quality of work
- Teacher does not provide negative feedback

# Direct Instruction: Syntax

- Orientation
- Presentation
- Structured Practice
- Guided Practice
- Independent Practice



# Direct Instruction: Social System

- Highly structured

## Direct Instruction: Principles of Reaction

- Governed by the need to provide knowledge of results
- Help students pace themselves
- Offer reinforcement



# Direct Instruction: Application

- The strategy is direct
- Most commonly used in the study of basic information and skills in the core curriculum areas
- The program emphasizes small-group, face to face instruction by a teacher using carefully sequenced, daily lessons in reading, arithmetic and language
- Through positive feedback, it can enhance self-esteem

# Direct Instruction: Video Example



*Action Learning Systems, Inc.*

(Click on Graphic)



# Direct Instruction: Strengths and Weaknesses

## Strengths

- Excellent for remedial and at-risk learners (move to mastery)
- Very structured
- Addresses students' general comprehension and analytic skills
- Taught in sequence until students reach "automaticity"

## Weaknesses

- Should not be used all the time
- Teacher's initial explanation
- Feedback
- In-class coaches

Scripted lesson plans (strength/weakness)



# Behavioral Systems Family of Models: Simulations

- Students play the roles of persons engaged in real life pursuits
- Elements of real life are simplified and presented in a form that can be contained inside the classroom
- Students learn from the consequences of their actions
- Attempts to approximate realistic conditions so that learned concepts and solutions are transferable to the real world
- Simulations can occur with (simulators) or without technology

# Simulations: Syntax

- Orientation
- Participant training
- The simulation
- Debriefing



## Simulations: Social System

- Rigorous: The teacher selects the simulation activity and directs the students through carefully delineated activities
- Non-threatening and cooperative

## Simulations: Support Systems

Many sources are available

- *Social Science Education Consortium Data Book*
- *Social Education*



# Simulations: Principles of Reaction

## Teacher

- Explaining
- Refereeing
- Coaching
- Discussion

## Student

- Player/Actor
- Decision-maker

# Simulations: Application

Simulations stimulate learning about:

- Competition
- Cooperation
- Empathy
- Social Systems
- Concepts
- Skills
- Efficiency
- Paying the penalty
- Role of chance
- Ability to think critically and make decisions



# Simulation: Strengths and Weaknesses

## Strengths

- Allows learners to practice in a safe, protected environment
- Learners can self-reflect
- Instant feedback
- Reproduction of important scenarios

## Weaknesses

- Vary in their relation to the real, lived experience
- Validity
- Not applicable to every subject/content
- Opportunity and access



# Simulation Activity: Connecting to MU Wi-Fi (See Handout)



# Simulation Activity

## Downloading the Application for iPad





10-Minute Break



# Behavioral Systems Family of Models: Mastery Learning

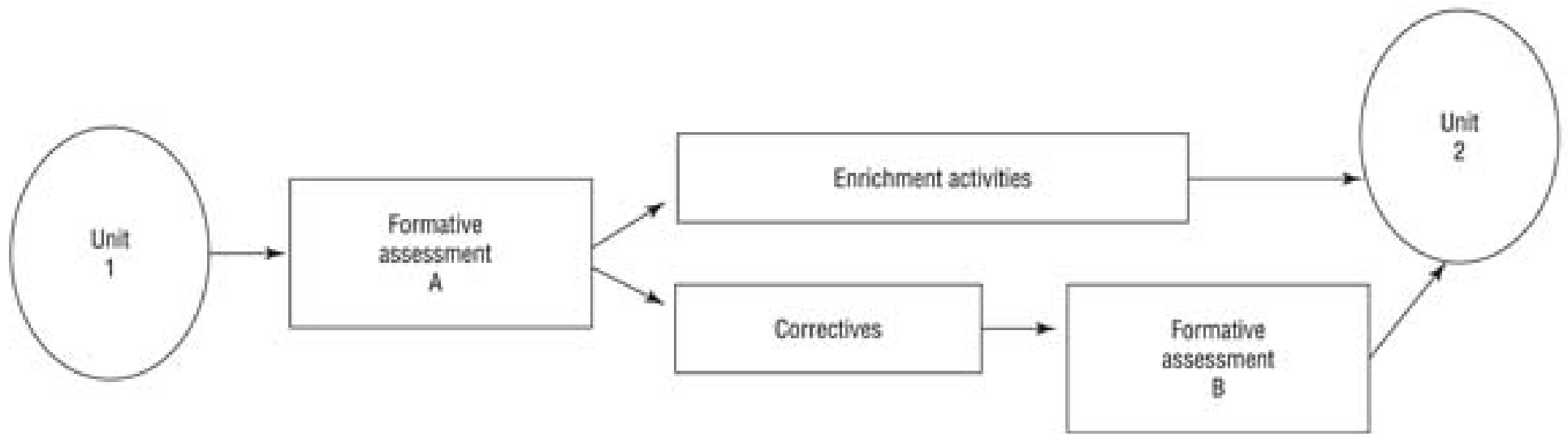
“If we can allow them time to learn **one thing at a time**, and then another, and another, until they can get their feet under them, we can break the cycle of failure.”

--Berj Harootunian to Bruce Joyce, March 1993

(Joyce, Weil, & Calhoun, 2009, p. 357 )



# Mastery Learning Instructional Process



# Individually Prescribed Instruction (IPI)

IPI students work independently on materials prescribed daily (or every few days) for them, depending on their demonstrated level of competence, learning style, and particular learning needs.

- Enables each pupil to work at his or her own pace
- Allows student to develop an evident degree of mastery
- Allows student to develop self-initiation and self-direction of learning
- Fosters the development of problem solving through processes
- Encourages self-evaluation and motivation for learning



# Language Laboratory



- Combines the properties of systems analysis, task analysis, and cybernetic principles in the educational setting
- Learners use electrical equipment to hear, record, and play back spoken material
  - Students hear their own voices more clearly through earphones
  - Directly compares their speech with that of a model
  - Provides themselves with immediate feedback
  - Isolates items for study
  - Permits pacing for specific drill
  - Permits more finely tuned sequenced instructional content with varying levels of complexity

# Mastery Learning: Strengths and Weaknesses

## Strengths

- Ample opportunities to feel successful
- Intended more for organizing and presenting material
- Works well in all settings (individual, small group, or whole class)
- Non-competitive grading and group cooperation is encouraged

## Weaknesses

- Not equally applicable for all subjects
- Works best in subjects with sequential “building blocks”
- Time



# Review Listening Guide



# Assessment of Objectives



Poll Everywhere

Question 1

Question 2

Question 3

Question 4

Question 5

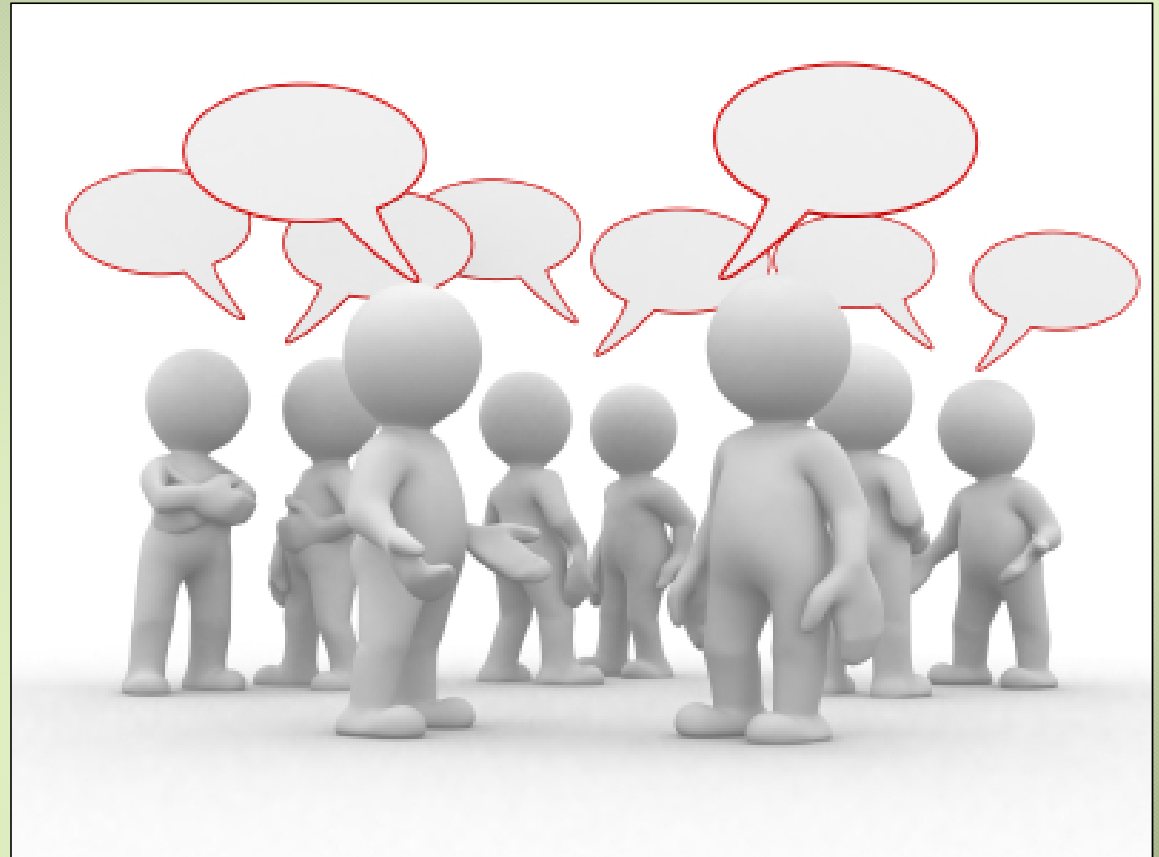
Question 6

Question 7

Question 8



# Poll Question Review



# Workshop Summary





# Personal Applications



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[http://www.youtube.com/watch?v=qy\\_mlEnnIF4](http://www.youtube.com/watch?v=qy_mlEnnIF4) (Big Bang Theory Video, Part 1)

<http://www.youtube.com/watch?v=EWyZHSZf3TM> (Big Bang Theory Video, Part 2)

<http://www.thirteen.org/edonline/concept2class/constructivism/> (Constructivism)

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[http://www.pearsoncustom.com/ufl\\_ctsm/ppts/direct\\_instruct](http://www.pearsoncustom.com/ufl_ctsm/ppts/direct_instruct) (Scaffolding)



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# Thank You

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