Theories of Learning

By: Nesrin Sultan

Definitions:

1. "A persisting change in human performance or performance potential . . . (brought) about as a result of the learner's interaction with the environment" (Driscoll, 1994).

2. "The relatively permanent *change* in a person's knowledge or behavior due to experience" (Mayer, 1982).

3. "An enduring *change* in behavior, or in the capacity to behave in a given fashion, which results from practice or other forms of experience" (Shuell, 1986).

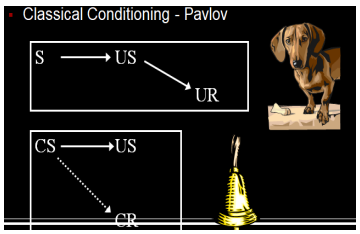
6 main theories of how people may learn:

a) Behaviorism
b) Cognitivism
c) Social Learning Theory
d) Social Constructivism
e) Multiple Intelligences
f) Brain-Based Learning

1. Behaviorism: confined to observable and measurable behavior

- Learning is defined by the outward expression of new behaviors
- Focuses solely on observable behaviors
- A biological basis for learning
- Learning is context-independent
- Classical & Operant Conditioning
  - Reflexes (Pavlov's Dogs)
  - Feedback/Reinforcement (Skinner's Pigeon Box)

- Classical Conditioning – Pavlov: a stimulus is present in order to get a response S R



- Operant Conditioning – Skinner: response is made first, reinforcement follows.

Example: Behaviorism in the classroom:

- Rewards and punishments.
- Responsibility for student learning rests squarely with the teacher.
- Lecture-based, highly structured.

Critiques of Behaviorism:

- Does not account for processes taking place in the mind that cannot be observed
- Advocates for passive student learning in a teacher-centric environment
- One size fits all
- Knowledge itself is given and absolute
- Programmed instruction & teacher-proofing

2. Cognitivism:

- Grew in response to Behaviorism
- Knowledge is stored cognitively as symbols
- Learning is the process of connecting symbols in a meaningful & memorable way
- Studies focused on the mental processes that facilitate symbol connection

Cognitive Learning Theory:

- Discovery Learning - Jerome Bruner:

-Bruner said anybody can learn anything at any age, provided it is stated in terms they can understand.

-Powerful concepts (not isolated facts):

a. Transfer to many different situations

b. Only possible through Discovery Learning

c. Confront the learner with problems and help them find solutions. Do not present sequenced materials.

- Meaningful Verbal Learning - David Ausubel:

  Advance Organizers: New material is presented in a systematic way, and is connected to existing cognitive structures in a meaningful way.

  When learners have difficulty with new material go back to the concrete anchors (Advance Organizers). Provide a Discovery approach, and they'll learn.

Example: Cognitivism in the Classroom:

- Inquiry-oriented projects
- Opportunities for the testing of hypotheses
- Curiosity encouraged
- Staged scaffolding

Critiques of Cognitivism:

- Like Behaviorism, knowledge itself is given and absolute
- Input – Process – Output model is mechanistic and deterministic
- Does not account enough for individuality
- Little emphasis on affective characteristics

3. Social Learning Theory (SLT)

- Grew out of Cognitivism
- A. Bandura (1973)
- Learning takes place through observation and sensorial experiences
- Imitation is the sincerest form of flattery
- SLT is the basis of the movement against violence in media & video games
- Learning From Models -Albert Bandura:
  i. Attend to pertinent clues

ii. Code for memory (store a visual image)
iii. Retain in memory
iv. Accurately reproduce the observed activity
v. Possess sufficient motivation to apply new learning

- Research indicates that the following factors influence the strength of learning from models:
    i. How much power the model seems to have
    ii. How capable the model seems to be
    iii. How nurturing (caring) the model seems to be
    iv. How similar the learner perceives self and model
    v. How many models the learner observes

- Four interrelated processes establish and strengthen identification with the model:
    i. Children want to be like the model
    ii. Children believe they are like the model
    iii. Children experience emotions like those the model is feeling.
    iv. Children act like the model.

  Through identification, children come to believe they have the same characteristics as the model. When they identify with a nurturing and competent model, children feel pleased and proud. When they identify with an inadequate model, children feel unhappy and insecure.

Example: SLT in the classroom:

- Collaborative learning and group work
- Modeling responses and expectations
- Opportunities to observe experts in action

Critiques of SLT:

- Does not take into account individuality, context, and experience as mediating factors
- Suggests students learn best as passive receivers of sensory stimuli, as opposed to being active learners
- Emotions and motivation not considered important or connected to learning
    - (Think of a laboratory environment, for instance. What's more effective in your estimation…watching a faculty member conduct the lab, or doing it yourself?)

4. Social Constructivism:

- Grew out of and in response to Cognitivism, framed around metacognition
- Knowledge is actively constructed
- Learning is…
    - A search for meaning by the learner
    - Contextualized
    - An inherently social activity
    - Dialogic and recursive
    - The responsibility of the learner
- Lev Vygotsky
    - Social Learning:

        Zone of Proximal Development

(Note that was added under the slide: Knowledge is actively constructed by individuals in light of and in relation to our past experiences, the context of learning, personal motivation, and our beliefs/attitudes/prior knowledge. Think of the lab…instead of just watching it being done, the student acts as the active agent conducting the lab, with expert support leading them to the edge of their knowledge and beyond.

Dialogic: central focus is on written & spoken dialogue

Recursive: new learning is built upon prior learning…scaffolding)

Example: Social Constructivism in the classroom:

- Journaling
- Experiential activities
- Personal focus
- Collaborative & cooperative learning

Critiques of Social Constructivism:

- Suggests that knowledge is neither given nor absolute
- Often seen as less rigorous than traditional approaches to instruction
- Does not fit well with traditional age grouping and rigid terms/semesters

(Suggests that knowledge is neither given nor absolute, but is rather an individual construct and does not fit well with traditional age grouping and rigid terms/semesters that do not provide a flexible timeframe for learning.)

5. Multiple Intelligences:

- Grew out of Constructivism, framed around metacognition
- H. Gardner (1983 to present)
- All people are born with eight intelligences:

I.	Verbal-linguistic	V.	Musical
II.	Visual-spatial	VI.	Naturalist
III.	Logical-Mathematical	VII.	Interpersonal
IV.	Kinesthetic	VIII.	Intrapersonal

- Enables students to leverage their strengths and purposefully target and develop their weaknesses.
- Metacognition – simply put is learning about learning, but more realistically, it's about knowing who you are as a learner, and developing the capacity to leverage your strengths to your advantage while purposefully addressing your weaknesses.

Example: MI in the classroom:

- Delivery of instruction via multiple mediums
- Student-centered classroom
- Authentic Assessment
- Self-directed learning

Critiques of MI:

- Lack of quantifiable evidence that MI exist
- Lack of evidence that use of MI as a curricular and methodological approach has any discernable impact on learning
- Suggestive of a departure from core curricula and standards

6. Brain-based learning:

- Grew out of Neuroscience & Constructivism
- D. Souza, N. Caine & G. Caine, E. Jensen (1980's to present)
- 12 governing principles:

- The brain is a parallel processor
- A search for meaning
- Emotions are critical
- Focused attention and peripheral perception
- Conscious and unconscious processes
- Several memory types
- Whole body learning
- Patterning
- Processing of parts and wholes
- Embedded Learning sticks
- Challenge and threat
- Every brain is unique

Example: BBL in the Classroom:

- Opportunities for group learning
- Regular environmental changes
- A multi-sensory environment
- Opportunities for self-expression and making personal connections to content
- Community-based learning

Critiques of BBL:

- Research conducted by neuroscientists, not teachers & educational researchers
- Lack of understanding of the brain itself makes "brain-based" learning questionable
- Individual principles have been scientifically questioned

(Individual principles have been scientifically questioned (left/right brain laterality))

Other Learning Theories:

- Andragogy (M. Knowles)
- Flow (M. Czikszentmihalyi)
- Situated Learning (J. Lave)
- Subsumption Theory (D. Ausubel)
- Conditions of Learning (R. Gagne)

Humanist:

- ✓ All students are intrinsically motivated to self-actualize or learn
- ✓ Learning is dependent upon meeting a hierarchy of needs (physiological, psychological and intellectual)
- ✓ Learning should be reinforced.

Past Paper Questions:

Which of the following is not a well-known form of intelligence?

a- mathematical

b- Recreational*

c- Musical

d- Kinesthetic

e- Interpersonal

Which of the following is not true about social learning theory?

a- used to explain mood disorders of adolescences* (not sure)

b- Learning through experience

c- Explains aggression as a learned behavior

d- Explain inter-group behavior and conflict