Introduction to Learning Process

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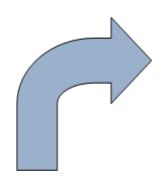
Definition: Learning is...

- A change in behavior as a result of experience or practice.
- The acquisition of knowledge.
- Knowledge gained through study.
- To gain knowledge of, or skill in, something through study, teaching, instruction or experience.
- The process of gaining knowledge.
- A process by which behavior is changed, shaped or controlled.
- The individual process of constructing understanding based on experience from a wide range of sources.

Some First Principles

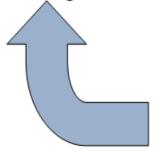
- Learning is something all humans do
 - Fetuses learn
 - Infants learn
 - O Children learn
 - Adults learn
- Learning is not uniquely human all living things learn
- Learning evolved as an adaptation for promoting survival

The Learning Process



<u>Feedback</u>

- External or internal
- Coach important here
- Asked to practice further,
 ∴cycle starts again.



Perceiving

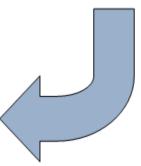
- Input (often called cues)
- Learner perceives or develops and idea of what has to be done



- Processing in the brain
- How do we put the info into a response



- Output
- Move or movement



What is Learning?

Learning is a process

Learning is a <u>product</u>



Process of Learning

- Learning involves the individual
 - Brain
 - Body
- Learning involves others
 - Pairs
 - Groups
 - Organizations
 - Communities
 - Society
- Learning takes place somewhere
 - In physical environment
 - With things and tools
- Learning occurs over time

Products of Learning

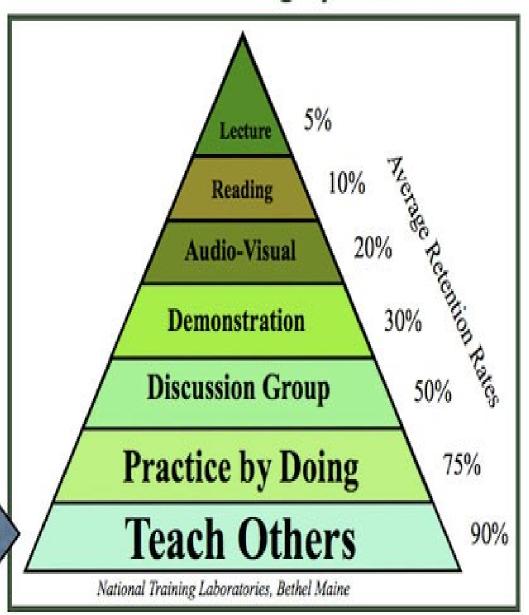
Learning is about <u>ideas and concepts</u>

Learning is about <u>behaviors and skills</u>

Learning is about <u>attitudes and values</u>

"The process of learning is a nonstop orgy of wonderment."

The Learning Pyramid



Five Principles of Learning

- Participation: involve trainees, learn by doing
- Repetition: repeat ideas & concepts to help people learn
- Relevance: learn better when material is meaningful and related
- Transference: to real world using simulations
- <u>Feedback</u>: ask for it and adjust training methods to audience.

Domains Of Learning

- Benjamin Bloom has suggested three domains of learning:
- Cognitive To recall, calculate, discuss, analyze, problem solve, etc.
- Psychomotor To dance, swim, ski, dive, drive a car, ride a bike, etc.
- Affective To like something or someone, love, appreciate, fear, hate, worship, etc.

Basic Learning Principles

- Learning depends upon three conditions:
 - The readiness to learn

- The ability to learn
- The learning environment



Definition: Theories are...

- What is a theory?
 - A theory provides a general explanation for observations made over time.
 - A theory explains and predicts behavior.
 - A theory can never be established beyond all doubt.
 - A theory may be modified.
 - Theories seldom have to be thrown out completely if thoroughly tested but sometimes a theory may be widely accepted for a long time and later disproved.

Broad domains of theories

- Behaviorism
- Cognitivism
- Social Learning Theory
- Social Constructivism
- Multiple Intelligences
- Brain-Based Learning



Behaviorism

Confined to observable and measurable behavior

- Classical Conditioning Pavlov
- Operant Conditioning Skinner

Behaviorism

Classical Conditioning - Pavlov

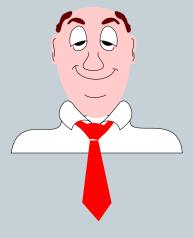
- A stimulus is presented
- in order to get a response:

 $S \longrightarrow R$

Behaviorism

Operant Conditioning - Skinner

The response is made first, then reinforcement follows.



Behaviorism in the Classroom

- Rewards and punishments
- Responsibility for student learning rests squarely with the teacher

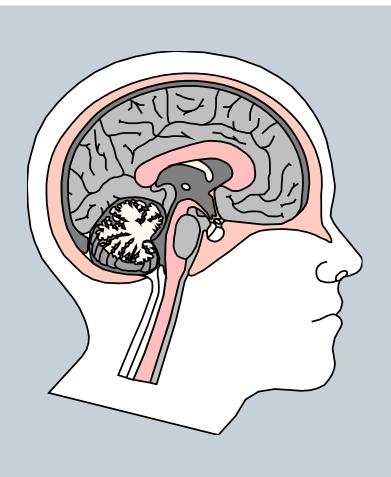
 Lecture-based, highly structured



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

Meaningful Verbal Learning -David Ausubel

Cognitivism in the Classroom

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



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

Social Learning Theory

Learning From Models -

Albert Bandura

- 1. Attend to pertinent clues
- 2. Code for memory (store a visual image)
- 3. Retain in memory
- 4. Accurately reproduce the observed activity
- 5. Possess sufficient motivation to apply new learning



SLT in the Classroom

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



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

Social Constructivism in the Classroom

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



Multiple Intelligences (MI)

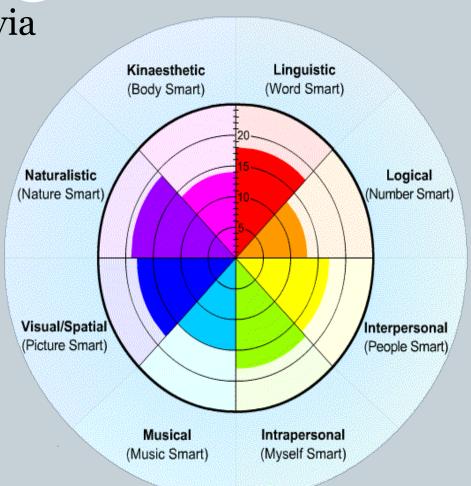
- Grew out of Constructivism, framed around metacognition
- H. Gardner (1983 to present)
- All people are born with eight intelligences:

1. Verbal-Linguistic	5. Musical
2. Visual-Spatial	6. Naturalist
3. Logical-Mathematical	7. Interpersonal
4. Kinesthetic	8. Intrapersonal

MI in the Classroom

 Delivery of instruction via multiple mediums

- Student-centered classroom
- Authentic Assessment
- Self-directed learning



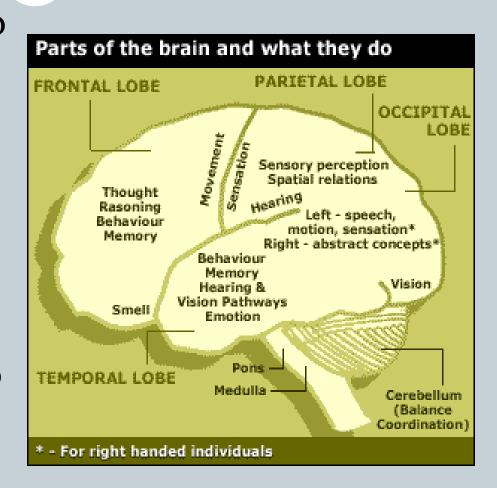
Brain-Based Learning (BBL)

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

1. Brain is a parallel processor	7. Focused attention & peripheral perception
2. Whole body learning	8. Conscious & unconscious processes
3. A search for meaning	9. Several types of memory
4. Patterning	10. Embedded learning sticks
5. Emotions are critical	11. Challenge & threat
6. Processing of parts and wholes	12. Every brain is unique

BBL in the Classroom

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



Classroom Learning Activities:

- Entry/Exit Tickets
- Free Writing/Minute Paper/Question of the Day Exercise
- Ice Breakers
- Think-Pair-Share
- Case Studies and Problem-Based Learning
- Case studies
- Problem-based learning
- Debate
- Interview or Role Play
- Interactive Demonstrations
- Jigsaw

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