A (Very) Brief History of Learning Theory

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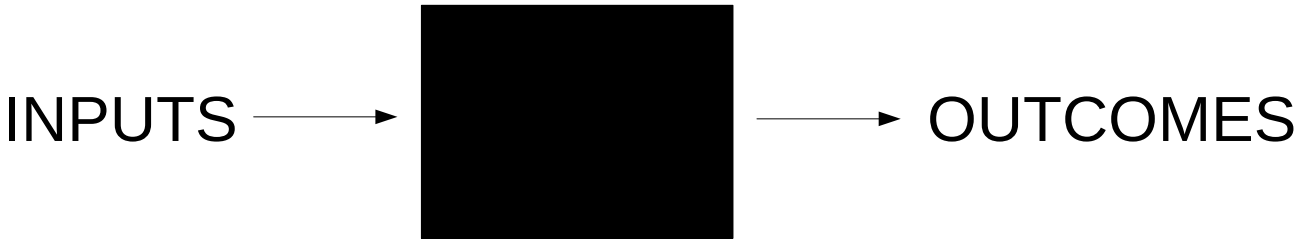
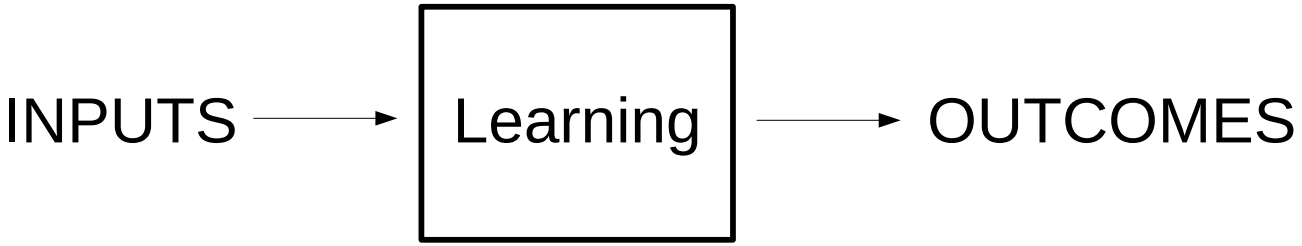
Learning as a Black Box





So what’s happening inside the box?

A Superficial Review

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

Behaviorism

- 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)

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

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

Cognitivism cont.

- Jean Piaget
  - Genetic Epistemology
    - Assimilation and Accommodation
- Jerome Bruner
  - Discovery Learning
    - Learner as independent problem-solver

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

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
  - Bobo Doll Experiment

SLT in the Classroom

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

Critiques of Social Learning Theory

- 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

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

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

Multiple Intelligences (MI)

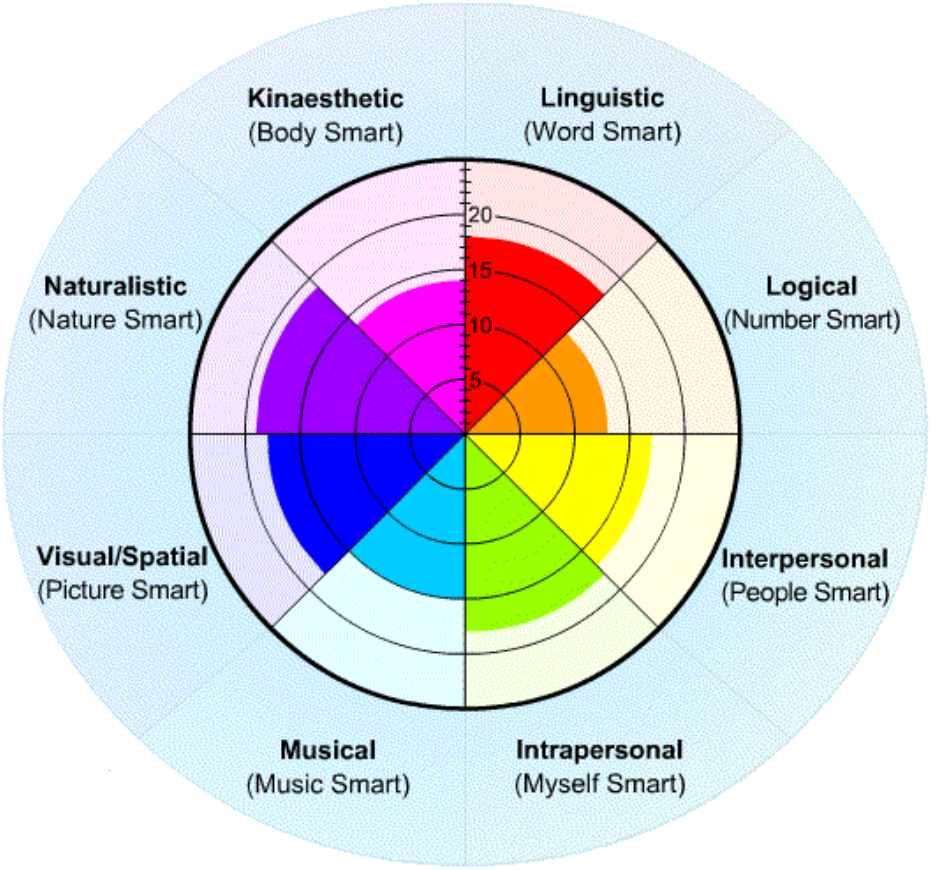
- Grew out of Constructivism, framed around metacognition
- H. Gardner (1983 to present)
- All people are born with eight intelligences:

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

- Enables students to leverage their strengths and purposefully target and develop their weaknesses

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
- Development process is a time-sink
- Suggestive of a departure from core curricula and standards

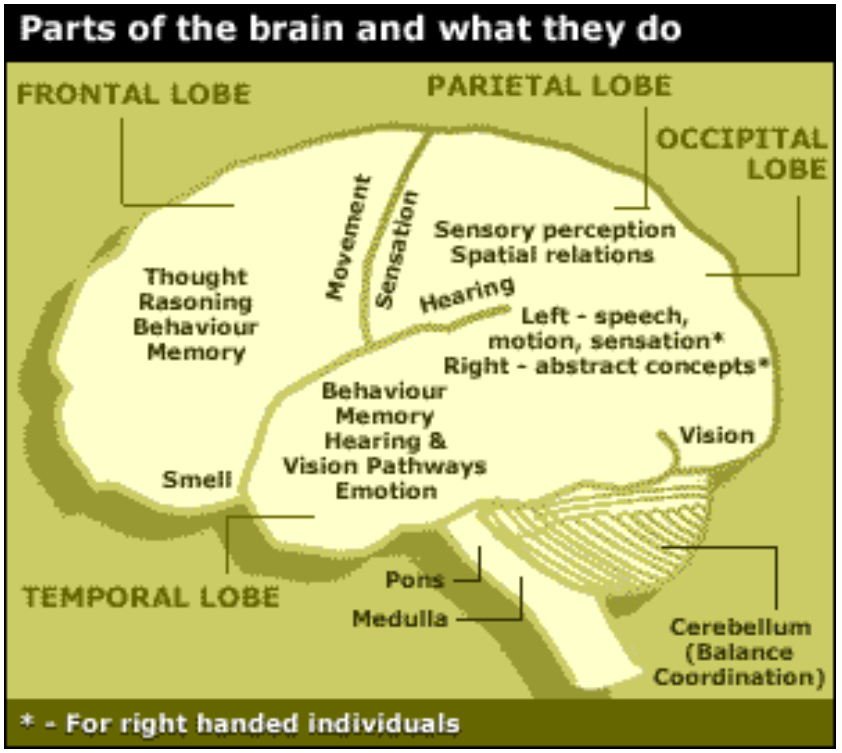
Brain-Based Learning (BBL)

- 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 self-expression and making personal connections to content
- Community-based learning



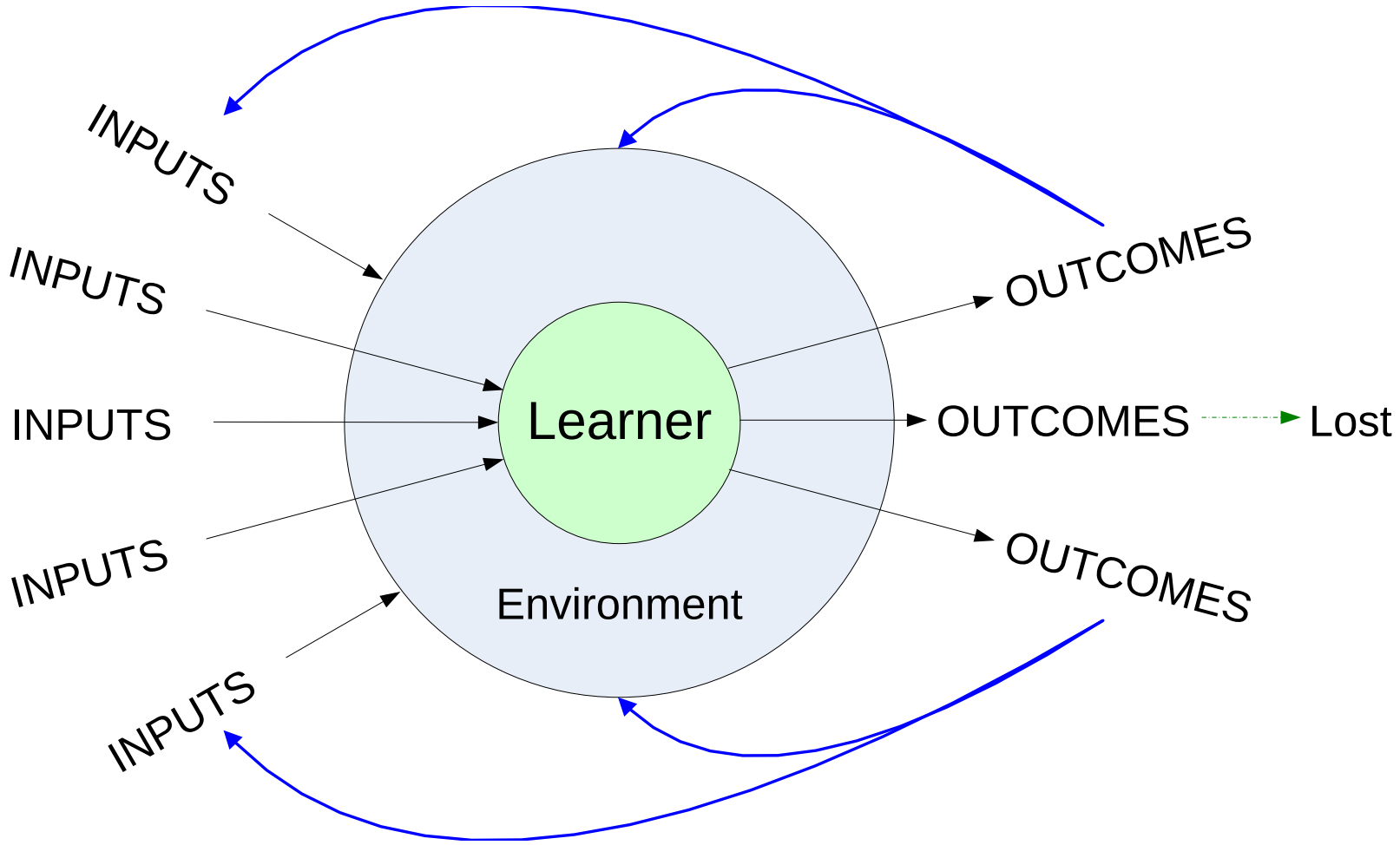
Critiques of BBL

- 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

Other Learning Theories of Note

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

Learning as a Not-So-Black Box



"You can't build a hut, you don't know how to find edible roots and you know nothing about predicting the weather. In other words, you do *terribly* on our I.Q. test."