Letting Behaviorism Help Shape Your Teaching

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What is Behaviorism?

behaviourism behaviorism be·hav·ior·ism bəˈhāvyəˌrizəm

Noun PSYCHOLOGY

- the theory that human and animal behavior can be explained in terms of conditioning, without appeal to thoughts or feelings, and that psychological disorders are best treated by altering behavior patterns

  https://www.google.com/search?q=Dictionary#dobs=behaviorism
- a school of psychology that takes the objective evidence of behavior (such as measured responses to stimuli) as the only concern of its research and the only basis of its theory without reference to conscious experience

  https://www.merriam-webster.com/dictionary/behaviorism

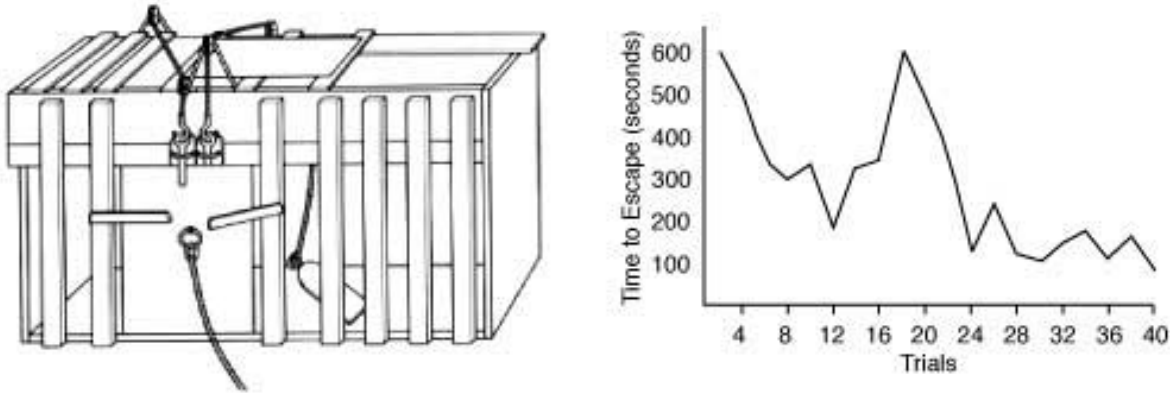
Famous Behaviorists

- Ivan Pavlov 1849-1936
  Russian Scientist
- Edward L. Thorndike 1874-1949
  American Psychologist
- John B. Watson 1879-1958
  American Psychologist
- B.F. (Burrhus Frederic) Skinner 1904-1990
  American Psychologist

Pavlov

- Classical Conditioning
- Studying Digestion in Mammals
- Food (Unconditioned Stimulus -- US) produces Saliva (Unconditioned Response -- UR)
- Bell/Lab Coats (Neutral Stimulus --NS)
- Present Bell/Lab Coats with Food and dogs learn to associate
- Bell/Lab Coats become Conditioned Stimuli (CS) and Saliva becomes Conditioned Response (CR)

Thorndike



Adapted from Domjan, 1993 (modified from Thorndike, 1898 [left] and Imada & Imada, 1983 [right])

- Operant Conditioning
- Learn by consequences of behavior
- Law of Effect
  behavior → reward → repeat
  behavior → punishment → don't repeat
- Cats in Puzzle Box

Watson

- Against Freudian notions that our unconscious mind was behind most of our behavior
- Classical Conditioning with Humans
- Little Albert

  Rats&Cats (NS)→ No Fear(UR)

  Rats&Cats associated with Loud Noise (US)→Fear (UR)

  Rats&Cats (CS)→Fear (CR)

Skinner

- Operant conditioning. A behavior is followed by a consequence, and the nature of the consequence modifies the subject's tendency to repeat the behavior
- Studied rats in cage "Skinner Box"

  Push lever → gets food

  Push lever→ gets shock
- Law of Effect (like Thorndike)

  behavior → reward → repeat

  behavior → punishment → don't repeat

Can we make our students salivate?

Do we wear a lab coat or ring a bell? No.

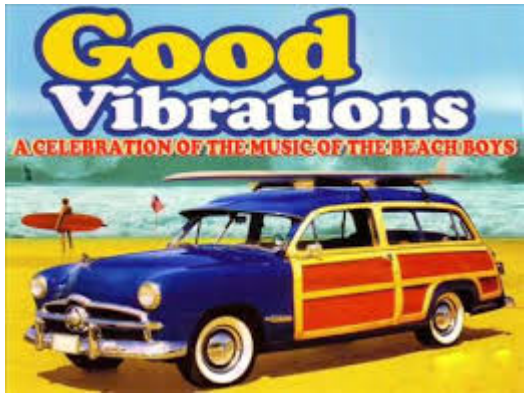
But what can we do?

- When entering the classroom, have a catchphrase that you use each time that lets the students know it's time to start. Examples:
  - "Time for math!"
  - "Good morning ladies, gentlemen boys and girls."
  - "Who's ready to think?"

Can we make our students salivate?

- When asking a question that requires thinking and a response, have a common opener or closer that you tie-in with the question. Examples:
  - “I’ve got something to ask you.”
  - “This question is going to require some thought.”
  - “Think about that for a bit and get back to me.”
  - “Let’s mull that over.”

Can we make positive associations?



- Make positive associations with you math experiences and your life. Examples:
  - "Getting my degree in math was the best thing that happened to me."
  - "Teaching math at the community college is a dream job."
  - "I like math because there is a right answer."
  - "When I complete a hard math problem, I feel good about myself."

Reward Examples

- “The class participated so well today I will enter a 5 out of 5 quiz score in the grade book.”
- “That’s an excellent answer. You will be excused from the quiz with a 100%.”
- “Thanks to your participation, we will be able to get out of class a little early today.”
- “That’s an excellent question. I will put one just like it on the test.”

Punishment Examples

- “I think we are going to need to have a quiz tomorrow because there wasn’t enough meaningful participation today.”
- “Looks like I’m going to have to make that test a little harder.”
- “You were late for class, looks like you earned eraser duty.”
- “Where is everyone today? Let’s have an attendance quiz.” (also a reward!)

References

https://www.simplypsychology.org/pavlov.html

https://study.com/academy/lesson/john-watson-and-behaviorism-theory-lesson-quiz.html

https://www.simplypsychology.org/edward-thorndike.html

https://www.learning-theories.com/operant-conditioning-skinner.html