

Psychology of learning

1.1 The psychology of learning is a theoretical science.

Learning is a process that depends on experience and leads to long-term changes in behavior potential. Behavior potential designates the possible behavior of an individual, not actual behavior. The main assumption behind all learning psychology is that the effects of the environment, conditioning, reinforcement, etc. provide psychologists with the best information from which to understand human behavior.

As opposed to *short term* changes in behavior potential (caused e.g. by fatigue) learning implies *long term* changes. As opposed to long term changes caused by *aging and development*, learning implies changes related directly to *experience*.

Learning theories try to better understand how the learning process works. Major research traditions are behaviorism, cognitivism and self-regulated learning. Media psychology is a newer addition among the learning theories because there is so much technology now included in the various types of learning experiences. Neurosciences have provided important insights into learning, too, even when using much simpler organisms than humans (aplysia). Distance learning, eLearning, online learning, blended learning, and media psychology are emerging dimensions of the field.

History

Socrates

Socrates (469-399 B.C.) introduced a method of learning that is now referred to as piloting. Piloting refers to arriving at answers through one's own power of reasoning. This was used when Socrates was teaching geometry to a young slave boy who knew math but nothing of geometry. He would ask this boy to solve a problem like finding the area of a square. When the boy would get the answer incorrect he would repeatedly question his reasoning by contradicting his logic. The notion that knowledge comes from within was inspired by Socrates and his experiments.

Ebbinghaus

In 1885, Hermann Ebbinghaus (1850—1909) continued the study of learning. Specifically he studied memory in its "pure" form. "Pure" meaning free from

meaningful associations. With himself as his own experimental subject he exercised this form of memory with the use of meaningless syllables and repetition. Ebbinghaus laid the way to another form of learning; becoming increasingly able to recall something as a result of practice and repetition.^[1] He was known for the discovery of the learning curve and the forgetting curve.

Edward Thorndike

In 1898, Edward Thorndike (1874–1949), through his various real experiments and thought experiments developed his theory of the "Law of Effect". The Law of Effect is a notion that not only humans, but all animals will continue to attempt to find a solution to a problem, and once found will continuously use the same solution in order to solve the same problem. The action that is done, causes a positive effect (solving the problem).

Pavlov and Watson

Ivan Petrovitch Pavlov (1849–1936) was a Russian psychologist in the early 1900s who also contributed to research on learning. Knowing that a dog salivates when food is present, he constructed a series of experiments that proved his thesis that he could make a dog salivate by just the presentation of the sound of a bell. The process he used is now called classical conditioning.

John Broadus Watson (1878–1958) also used this method of learning to cause a young child, not previously afraid of furry animals, to become frightened of them. Although the number of different stimuli is limitless, the reactions that can be caused are limited to the natural reflexes we possess.

Skinner

Burrhus F. Skinner (1904-1990) was the founder of operant conditioning which uses punishment and reinforcement as learning tools. This learning method is not as limited as the previous learning form. Operant conditioning is only limited by what can be used as reinforcement or punishment.

1.2 The basics

Are you preparing for a big test in your psychology of learning class? Or are you just interested in a review of learning and behavioral psychology topics? This

learning study guide offers a brief overview of some of major topics including behaviorism, classical conditioning and operant conditioning. Explore the links below to get a grasp on some of the basics of learning psychology.

1. Introduction

- **What is Learning?**

Learning is a relatively permanent change in behavior that is the result of experience. During the first half of the twentieth century, the school of thought known as behaviorism rose to dominate psychology and sought to explain the learning process. The three major types of learning described by behavioral psychology are classical conditioning, operant conditioning and observational learning.

- **What is Behaviorism?**

Behaviorism was the school of thought in psychology that sought to measure only observable behaviors. Founded by John B. Watson and outlined in his seminal 1913 paper *Psychology as the Behaviorist View It*, the behaviorist standpoint held that psychology was an experimental and objective science and that internal mental processes should not be considered because they could not be directly observed and measured. Learn more in this brief overview of behaviorism.

2. Classical Conditioning

Classical conditioning is a learning process in which an association is made between a previously neutral stimulus and a stimulus that naturally evokes a response. For example, in Pavlov's classic experiment, the smell of food was the naturally occurring stimulus that was paired with the previously neutral ringing of the bell. Once an association had been made between the two, the sound of the bell alone could lead to a response.

3. Operant Conditioning

Operant conditioning is a learning process in which the probability of response occurring is increased or decreased due to reinforcement or punishment. First studied by Edward Thorndike and later by B.F. Skinner, the underlying idea behind operant conditioning is that the *consequences* of our actions shape voluntary behavior.

4. Observational Learning

Observational learning is a process in which learning occurs through observing and imitating others. As demonstrated in Albert Bandura's classic "Bobo Doll" experiments, people will imitate the actions of others without direct reinforcement. Four important elements are essential for effective observational learning: attention, motor skills, motivation and memory.

5. Important People

The following are some of the major figures associated with learning and the behavioral school of psychology.

- **Edward Thorndike**
- **Ivan Pavlov**
- **John Watson**
- **B.F. Skinner**
- **Albert Bandura**

6. Key Learning Terms

- **Classical Conditioning**
- **Unconditioned Stimulus**
- **Conditioned Stimulus**
- **Unconditioned Response**
- **Conditioned Response**
- **Fixed-interval Schedule**
- **Fixed-ratio Schedule**

- **Variable-interval Schedule**
- **Variable-ratio Schedule**
- **Behaviorism**

The Power of Associations

You've probably heard of Pavlov's dogs at some point, but many people don't fully understand exactly what this famous research illustrates. Classical conditioning is one of the best-known concepts of behavioral learning theory. Learn more about this process in this [introduction to classical conditioning](#).

Classical Conditioning Basics

Now that you understand how classical conditioning works, it is also important to understand some of the basic phenomena that also occur during this process. Learn more about such things include [acquisition](#), extinction and discrimination in this overview of [principles of classical conditioning](#).

The Consequences of Behavior

Operant conditioning is one of the fundamental concepts in behavioral psychology. This type of learning involves using reinforcement and punishment to either increase or decrease behaviors. Learn more about the effects of rewards and punishments on behavior in this overview of [operant conditioning](#).

How Timing Impacts Learning

The types of reinforcement use are important, but timing also plays a critical role in how quickly new behaviors are acquired and how strong these new responses are. Learn more about how the timing of reinforcement impacts speed and strength of responses in this article on [schedules of reinforcement](#).

Classical Versus Operant Conditioning

Now that we've explored classical conditioning and operant conditioning, do you think you could immediately identify which is which. In a classroom setting, chances are good

that your instructor will provide some examples of learning and expect you to identify which type of conditioning is used. Read the following article to learn more about the major [differences between the classical and operant conditioning](#).

Learning Through Observation

Psychologist Albert Bandura proposed social learning theory, which emphasizes the importance of observational learning. As you can imagine, a great deal of learning takes place simply through watching the people around us. Learn more about this theory including basic concepts and how the process works in this overview of [social learning theory](#).

Memory Basics

Memory is a complex process that involves acquiring, storing and recalling information. Learn more about what memory is, how it works and how it is organized in this basic [overview of memory](#).

Using Memory

In order to use the information that has been encoded into memory, it first has to be retrieved. There are many factors that can influence how memories are retrieved such as the type of information being used and the retrieval cues that are present. Discover the basics of memory retrieval as well as possible problems with this process in this overview of [how memories are retrieved](#).

When Memory Fails

Forgetting is a surprisingly common event. It can happen for a number of reasons including a failure to retrieve the information from long-term memory. Learn more about why this happens and discover some of the research into how and [why memory fails](#).

Why We Forget

Why do we forget information we have learned in the past? There are four basic explanations for why forgetting occurs: retrieval failure, interference, failure to store and motivated forgetting. Learn more about these reasons why we forget.

Boosting Memory

No matter how great your memory is, there are probably a few things you can do to make it even better. Cognitive psychologists have discovered a number of techniques to help improve memory. Learn more about some of these strategies and how you can apply these tips for improving your memory.