

LESSON 4

LEARNING

SUMMARY

A human baby is born with simple reflexes and when grown as an adult the individual becomes capable of performing many complex behaviours. This happens because of learning.

The process of learning is continuous and goes on throughout life. It empowers a person by making him/her what one is not and wants to become.

Learning

- It is defined as a relatively durable change in behaviour due to experience.
- if the change in behaviour is temporary, or due to instinct or maturation, it is not learning.
- The key feature of learning is experience. Any change in behaviour in the absence of practice or experience does not qualify as learning.
- learning is not directly observable. It is often inferred from changes in the external behaviour. It is apparent in terms of improvement in the performance.
- Learning helps us adapt to the surrounding environment.

How do we learn?

The two basic types of learning are - **classical conditioning** and **operant or instrumental**

conditioning. In addition, we have observational learning, verbal learning, concept learning, and skill learning.

(i) Classical Conditioning: Learning through Association

- It was discovered by a Russian scientist Ivan P. Pavlov. Also called Pavlovian conditioning.
- He was interested in studying stimulus-response relationship.
- His experiment was concerned with the salivary response of the dog.
- He realized that the salivary response had been learned by the dog.

Pavlov presented to the dog a series of trials in which a tone was paired with food. The steps of conditioning process are:

Procedure	Response
Before Conditioning	
Food (UCS) →	Salivation (UCR)
Bell (CS) →	►Orienting response
During conditioning (Acquisition phase)	
Food + Bell (UCS) (CS) →	Salivation (CR)
(Repeated pairing of the UCS and CS)	
After Conditioning	
Bell (CS) →	► Salivation (CR)
UCS - Unconditioned Stimulus; CS - Conditioned Stimulus; UCR - Unconditioned Response; CR - Conditioned Response	

Originally the sound of the buzzer (CS) elicits only an orienting response (alerting response) and elicits salivation when the food is consistently presented in close

association with the buzzes. Immediately after the buzzer is rung, the animal elicits salvation. This is called **acquisition**.

It has been found that if the buzzer (CS) is presented on each trial but the food (US) is not presented, **extinction** will take place.

The recovery of CR after extinction is called spontaneous **recovery**.

(ii) Operant Conditioning: Modification of Behaviour through Reinforcement

- It is a process through which organisms learn to repeat behaviours that produce positive outcomes or avoid or escape from the negative outcomes.
- B.F. Skinner is considered the most influential psychologist advocating the role of operant conditioning in learning.

Skinner's rat experiment

- He developed an experimental chamber (called Skinner Box) and placed a rat inside it. The chamber included a lever attached to the front wall.
- After some time, the rat accidentally presses the lever and a pellet of food drops automatically in the plate and the rat eats it.
- After some activity it again presses the lever and gets pellet (a reward).

- Gradually the random activity changes to more specific activity around the lever.
- Finally, the rat learns that pressing the lever results in dropping of the food, a satisfying outcome.
- The response (pressing the lever) is reinforced and the behaviour is acquired or learned.

Reinforcement and Observational Learning

The role of reinforcement is very crucial in operant conditioning. It is an operation or action that increases the rate of response.

Types of Reinforcement

Positive Reinforcement

1. Reward that increases the strength of a specific behaviour
2. Any stimulus that strengthens a response that precedes it

Negative Reinforcement

1. It involves application of an aversive stimulus
2. It is a "reinforcement" because it increases the rate of response

Based on negative reinforcement, there are two types of learning – **Escape learning** and **Avoidance learning**.

Schedules of Reinforcement

- In the case of **continuous reinforcement**, every correct response is reinforced. It is useful for establishing or strengthening new behaviours.
- Alternatively, the responses are **reinforced partially or intermittently** (sometimes only). It is more powerful in

maintaining the acquired behaviours.

Observational Learning

- It is the acquiring of new skills by observing the behaviour of others.
- It depends on the existence of appropriate model in one's environment.
- We learn various social roles through observational learning.

Some other types of Learning

Verbal learning - The process of learning language is called verbal learning.

Concept learning - This is about developing categories of objects and events. A concept involves a variety of objects clubbed together. Use of categories or class names helps us to communicate and perform different activities. The concepts may be natural or artificial, abstract and concrete.

Skill learning - An important area of learning involves acquiring various types of skills like riding a bicycle, writing etc. Once the skill is acquired one may over learn it. It may become automatic and one is able to perform it with ease and comfort.

Transfer of Learning

- **Transfer of Learning** refers to the process of using earlier learning in a new situation.

- It is **positive** if the first learning helps the second learning.
- It can be **negative** if the first learning interferes with the second learning.
- It can be **zero** if the first learning neither helps nor interferes with the second learning.

Do you know?

B.F. Skinner developed an experimental chamber (called Skinner Box) to study learning process in rats.

Ivan Pavlov was given Nobel Prize in 1904 in recognition of his work on the physiology of digestion.

Evaluate yourself

1. Suggest any four tips for better study habits.
2. Define the following concepts:
Extinction, operant conditioning, reinforcement
3. Write the difference between positive and negative reinforcement.

Extend Your Horizon

To learn more about different learning experiments in detail visit: <https://online.king.edu/news/psychology-experiments/>