

## Learning: Meaning, Nature, Types and Theories of Learning!

### Meaning and Nature:

Learning is a key process in human behaviour. All living is learning. If we compare the simple, crude ways in which a child feels and behaves, with the complex modes of adult behaviour, his skills, habits, thought, sentiments and the like- we will know what difference learning has made to the individual.

Learning is defined as “any relatively permanent change in behaviour that occurs as a result of practice and experience”. This definition has three important elements.

- a. *Learning is a change in behaviour—better or worse.*
- b. *It is a change that takes place through practice or experience, but changes due to growth or maturation are not learning.*
- c. *This change in behaviour must be relatively permanent, and it must last a fairly long time.*

### Theories of Learning:

#### 1. Trial and Error Learning Theory:

This theory was developed by an American psychologist **EL Thorndike (1874-1949)**. According to him learning is a gradual process where the individual will make many attempts to learn. The essence of this theory is-as the trials increase, the errors decrease.

According to this theory when an individual is placed in a new situation, he makes a number of random movements. Among them, those which are unsuccessful are eliminated and the successful ones are fixed.

Thorndike studies the character of trial and error learning in a number of experiments on cats-using a box which he called ‘puzzle box’. In one of the experiments a hungry cat was placed in the box and the door was closed which could be opened by pressing a Latch. A fish was placed outside the box in a plate.

The cat could see this fish. The cat was given 100 trials-ten in the morning and ten in each afternoon for five days. The cat was fed at the end of each experimental period and then was given nothing more to eat until after the next session. If, succeeded in opening the door in any trial by chance, he went to eat food (fish). A complete record was made of the cat’s behaviour during each trial.

In the beginning the cat made a number of random movements like biting, clawing, dashing, etc. gradually in subsequent trials the cat reduced the incorrect responses (errors), as it was in a position to manipulate the latch as soon as it was put in the box.



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This experiment revealed that the random movements were decreased gradually, that is-as the trials increased the errors decreased. As the trials increased the solution to open the door (pressing the latch) was discovered and at the end, the cat could open the door with zero error. The time taken in each trial was eventually reduced.

## **2. Operant Conditioning:**

This method of conditioning was developed by an American psychologist BF Skinner. This theory is also known as 'Instrumental conditioning' because the animals use certain operations or actions as instruments to find solution.

Skinner conducted his famous experiment by placing a hungry rat in a box called after his name 'Skinner box'. This box was containing a lever and a food tray in a corner of the box. It was so arranged, that the animal was free to move inside the box, but the pressing of the lever would get the animal a pellet of food in the tray as reinforcement.

Arrangement was also made to record the number of pressings of the lever by a mechanical device. It was found in the beginning that the rat pressed the lever occasionally and used to get food as reinforcement for each pressing.

Gradually, as the animal learnt the pressing of lever would give some food, it repeated the responses very rapidly. This rapid increase in pressing the lever is the indication of the animal conditioned to get food.

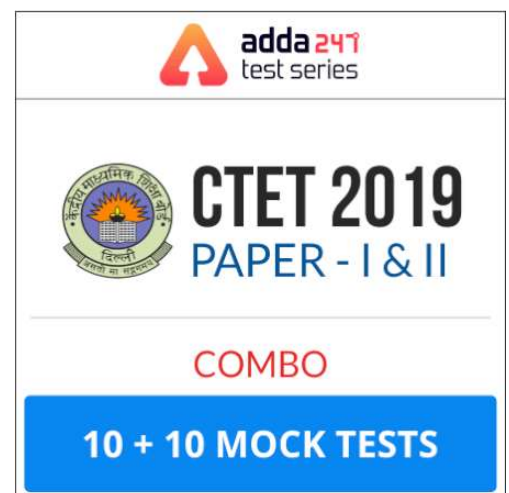
Reinforcement which is the most important aspect of this experiment is divided into two types: positive reinforcement is used in reward training. Negative reinforcement-like punishment is used to stop undesired responses or behaviours. Operant conditioning is useful in shaping undesirable behaviour and in modification of behaviour.

## **3. Learning by Insight:**

Learning by perceiving the relationship in the scene and understanding the situation is insightful learning. This theory was developed by a psychologist known as Wolfgang Kohler, who belonged to Gestalt school of psychology.

Kohler conducted his most famous experiments on chimpanzee-called Sultan. In the experiment, Sultan was put in a cage and a banana was placed at some distance outside the cage. Then the chimpanzee was given two sticks, so constructed that one stick could be fitted into another and make the stick longer.

The hungry Sultan first attempted with its hands to get the banana. Then he took one of the sticks and tried to pull the banana nearer, then tried with other stick, but failed to reach it. By this effort, the chimpanzee became tired and left the attempts to reach banana and started playing with sticks.



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While playing so, one of the sticks got fitted into the other and the stick became lengthier. Immediately Sultan became elated and pulled the banana with this long stick and ate it. This 'sudden flash of idea' to reach food with longer stick was called as 'Insight', by Kohler.

He concluded that the occurrence of insight to find solution to a problem is possible by perception of the whole situation.

It is here the method of insightful learning is very useful. Because it involves many higher mental processes such as thinking, reasoning, intelligence, etc.

#### **4. Experiential Learning (Carl Rogers):**

Rogers distinguished two types of learning: cognitive (meaningless) and experiential (significant). The former corresponds to academic knowledge such as learning vocabulary or multiplication tables and the latter refers to applied knowledge such as learning about engines in order to repair a car. The key to the distinction is that experiential learning addresses the needs and wants of the learner. Rogers lists these qualities of experiential learning: personal involvement, self-initiated, evaluated by learner, and pervasive effects on learner.

To Rogers, experiential learning is equivalent to personal change and growth. Rogers feels that all human beings have a natural propensity to learn; the role of the teacher is to facilitate such learning. This includes: (1) *setting a positive climate for learning*, (2) *clarifying the purposes of the learner(s)*, (3) *organizing and making available learning resources*, (4) *balancing intellectual and emotional components of learning*, and (5) *sharing feelings and thoughts with learners but not dominating*.

According to Rogers, learning is facilitated when: (1) *the student participates completely in the learning process and has control over its nature and direction*, (2) *it is primarily based upon direct confrontation with practical, social, personal or research problems*, and (3) *self-evaluation is the principal method of assessing progress or success*. Rogers also emphasizes the importance of learning to learn and an openness to change.

#### **5. Bloom's Revised Taxonomy of Cognitive Learning**

This was created in 1956 by a committee under the leadership of educational psychologist Dr Benjamin Bloom to promote higher forms of thinking in education, such as analysing and evaluating concepts, processes, procedures, and principles, rather than just remembering facts (rote learning). It is most often used when designing education, training, and learning processes.

The committee identified three domains of educational activities or learning.

- **Cognitive** This covers mental skills (knowledge).
- **Affective** This includes growth in feelings or emotional areas (attitude or self).
- **Psychomotor** These are manual or physical skills.

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The cognitive domain includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills. There are six major categories of cognitive processes, starting from the simplest to the most complex.

Level	Category	Examples	Key words used to describe activity / Action Verbs	Technologies used for learning
1. (Lowest)	<b>Remembering</b> Recall or retrieve previous learned information.	Recite a poem, quote prices from memory to a customer, recite safety rules	Defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces	Bookmarking, flash cards, rote learning based on repetition
2.	<b>Understanding</b> Comprehending the meaning of a sentence, translation, interpolation, interpretation of instructions and problems, stating a problem in one's own words	Rewrite the principles of learning, explain in one's own words the steps for performing a complex task, translate an equation into an excel spreadsheet	Comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, given an example, infers, interprets, paraphrases, predicts, rewrites, summarises, translates	Create an analogy, participating in cooperative learning, taking notes, storytelling, internet search
3.	<b>Applying</b> Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the workplace.	Use a manual to calculate an employee's leave time, apply laws of statistics to evaluate the reliability of a written test	Applies, changes, computers, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses	Collaborative learning, create a process, blog, practice
4.	<b>Analysing</b> Separate material or concepts into component parts so that its organisational structure may be understood, distinguish between facts and inferences	Repair a piece of equipment by using logical deduction, recognise logical fallacies in reasoning, gather information from a department	Analyses, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates	Dynamic group involvement, debating, questioning what happened, running a test

Level	Category	Examples	Key words used to describe activity / Action Verbs	Technologies used for learning
5.	<b>Evaluating</b> make judgements about the value of ideas or materials	Select the most effective solution, hire the most qualities candidate, explain and justify a new budget, judge the logical consistency of a solution	Appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarises, supports	Survey, blogging
6.	<b>Creating</b> Build a structure or pattern from diverse elements, put parts together to form a whole, with emphasis on creating a new meaning or structure	Write a company operations or process manual, design a machine to perform a specific task, integrate training from several sources to solve a problem, revise and process to improve the outcome	Categorises, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganises, revises, rewrites, summarises, tells, writes	Create a new model, write an essay, network with others

