

# 1.1 Concept of Learning

## (a) Definition of learning

### ▶ **Murphy:**

The term learning covers every modification in behavior to meet environmental requirements.

### ▶ **Gates:**

learning is modification of behavior through experiences.

▶ **Skinner:**

learning includes both acquisition and retention.

▶ **Crow & Crow:**

learning involves the acquisition of habit knowledge & attitudes.

# Meaning of formal Learning

- ▶ Formal learning is planned learning that derives from activities within **a structured learning setting.**
- ▶ Learning typically provided by education or training institutions. It is structured in terms of learning **objectives, content, method & assessment & leads to certification.**
- ▶ Formal learning takes place in educational institutions & often leads **to degrees or credit of some form.**

- ▶ Planned learning keeping in view some definite **aim**.
- ▶ Learning having a definite course to be covered **during a definite period**.
- ▶ Learning organized by some agency say the **government or the private enterprise**.
- ▶ Learning starting & ending at **a particular age**.
- ▶ Learning associated with a **degree or certificate**.

- ▶ Learning usually associated with some sort of mental strain on the teacher & the taught.

# Informal learning

- ▶ Informal education is based on conversation, exploring & enlarging experience which can take place in any setting.

**- Mark k.smith.**

- ▶ Informal learning can be defined as a particular way of learning which arises from the activities & interests of individuals & groups . After having identified & selected interest expressed by learners, informal activities.( discussion, talks or presentation, information, advice & guidance) are carried out in a flexible & informal way informal community locations.

# Characteristics of Informal learning

- ▶ Informal learning is never organized. there are no set formulas or guidelines.
- ▶ Informal learners are often highly motivated to learn.
- ▶ Informal learning is often spontaneous.
- ▶ There is no formal curriculum.
- ▶ The world is your classroom.
- ▶ Informal learning is difficult to quantify.

- ▶ Essential to Childs early development.
- ▶ Essential to an adults lifelong learning.



# Non -formal learning

- ▶ Non -formal learning is the only means that of filling the gap between the schooled & un schooled population.
- ▶ Open university, open learning , the correspondence courses & distant learning are the various example of such a system.

# characteristics

- ▶ Flexibility in various aspects of learning. (admission, place of education, curriculum, age, co-curricular activities, modes of teaching evaluation etc.)
- ▶ Covering life span of an individual.
- ▶ Guided by motivation of the individual for self growth , self renewal.

## (b) Learning Curve

- ▶ A learning Curve is a graphic representation of how learning takes place in a particular situation. The course of learning can be depicted & described graphically by drawing learning curves against horizontal & vertical scales (x axis & y axis) Learning curves are used to explain these changes in behavior against the number of attempts made.

# Steps of learning curve

## 1. **Initial lag:**

this is the period of no gain. The learner gets prepared for the task & motivation must be given to get out of this stage.

## 2. **Increasing gains:**

this is the positive aspect of learning curve where the gain increase with practice & also when the learner is interested in learning.

### 3. Decreasing gains:

this is the negative aspect. The gain seems to drop slowly. Learner have lost motivation.

### 4. Plateau:

it is like a flat portion on a mountain. This part can be decreased or even completely avoided.

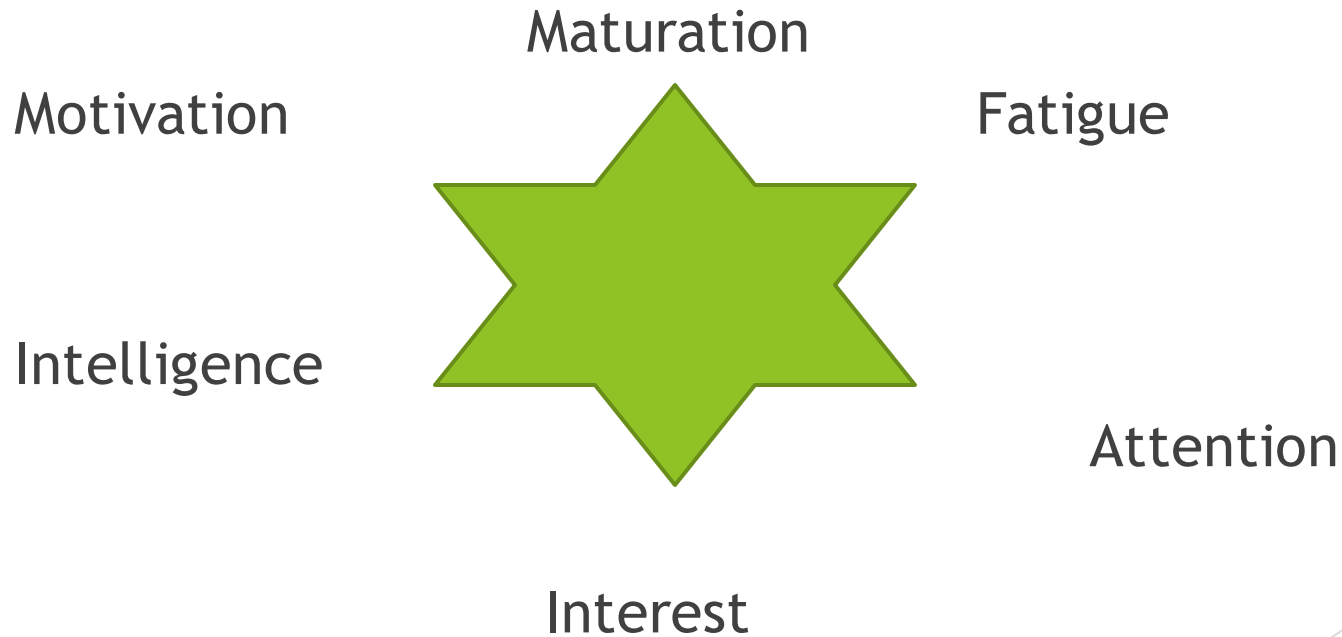
## 5. End spurt:

this shows revival of learning after the plateau stage.

## 6. Cessation of learning:

this is the theoretical limit of learning.

# (d) Factors affecting learning



## 1 Maturation:

learning effectiveness depends largely on the related maturity.

Ex. A six month old baby cannot learn how to control bowel movements because neither his brain nor his body is mature enough to do.

## 2. motivation:

motivation is the important factor of effective learning.

Ex. Teacher ask question to students, then students answer to question .when teacher motivates students it effects positively on students learning.



### **3. Intelligence:**

the speed & accuracy of learning are directly related with level of intelligence.

### **4. interest :**

some children show progress in drawing , music, sports, science, because of in their interest. Without interest not effective learning.

## 5. Attention:

if school located in crowded area like market, station, bus stand etc. there is too much noise. it is difficult for student to concentrate.

## 6. Fatigue :

it is the condition of lowered efficiency due to expenditure of energy. It may be tested by measuring the output of work.

# (e) Transfer of learning

## Sorenson:

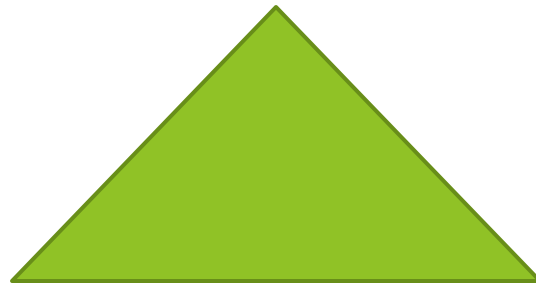
transfer refers to the transfer of knowledge, training & habits acquired in one situation to another situation.

## Bigge:

transfer of learning occurs when a persons learning in one situation influences his learning & performances in other situations.

# Types of transfer learning

positive transfer



Negative transfer

zero transfer

## ► Positive transfer:

when the learning or training carried out in one situation proves helpful to the learner in other situation.

Ex. Badminton- table tennis,  
hindi -punjabi , gujarati

## ► Negative transfer:

when learning or training in one situation hinders, interferes, or weakens the learning in another situation.

ex. Having learned to drive on the right hand side the tourists from Japan or USA may find it difficult to drive in India or UK where vehicles are to be driven on the left hand side.

one who is driving an auto start kinetic Honda scooter may find difficulty in driving Bajaj or Vespa scooter.

# Zero transfer

- ▶ Transfer is said to be zero when learning or training in one situation does not have any significant influence over the learning or training in another situation.
- ▶ Ex. Learning history may neither help nor hinder the learning of economics.
- ▶ Learning to play football may not help or hinder learning to play volley ball.

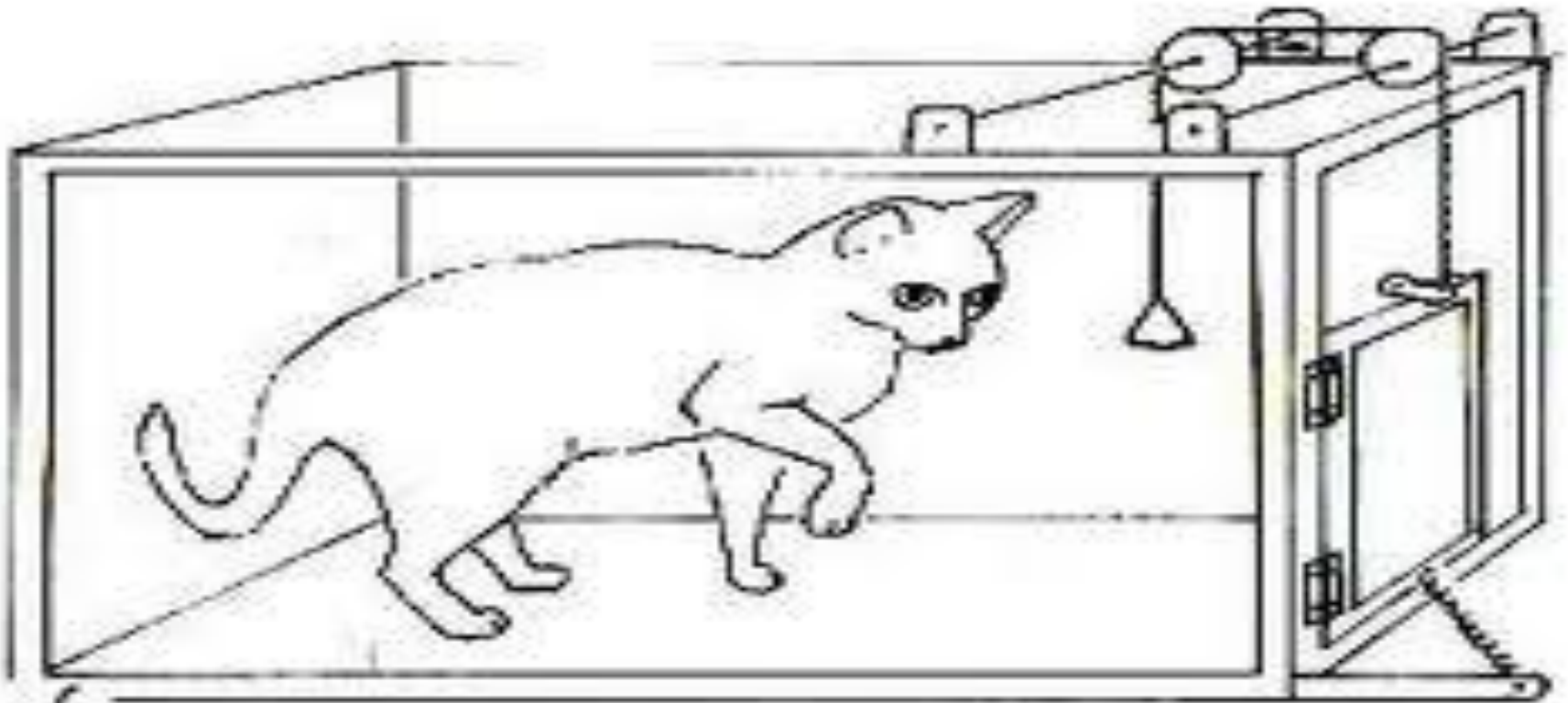
# (1.2) Traditional Theories of learning

## A) trial & error theory:---Thorndike

- Also known as stimulus response or band theory.
- According to Thorndike Learning is connection between stimulus(S) & response(R).
- learning takes place through random repetition.
- this theory based on experiments conducted on cats chickens, dogs, fish, monkeys & rats.



# Example



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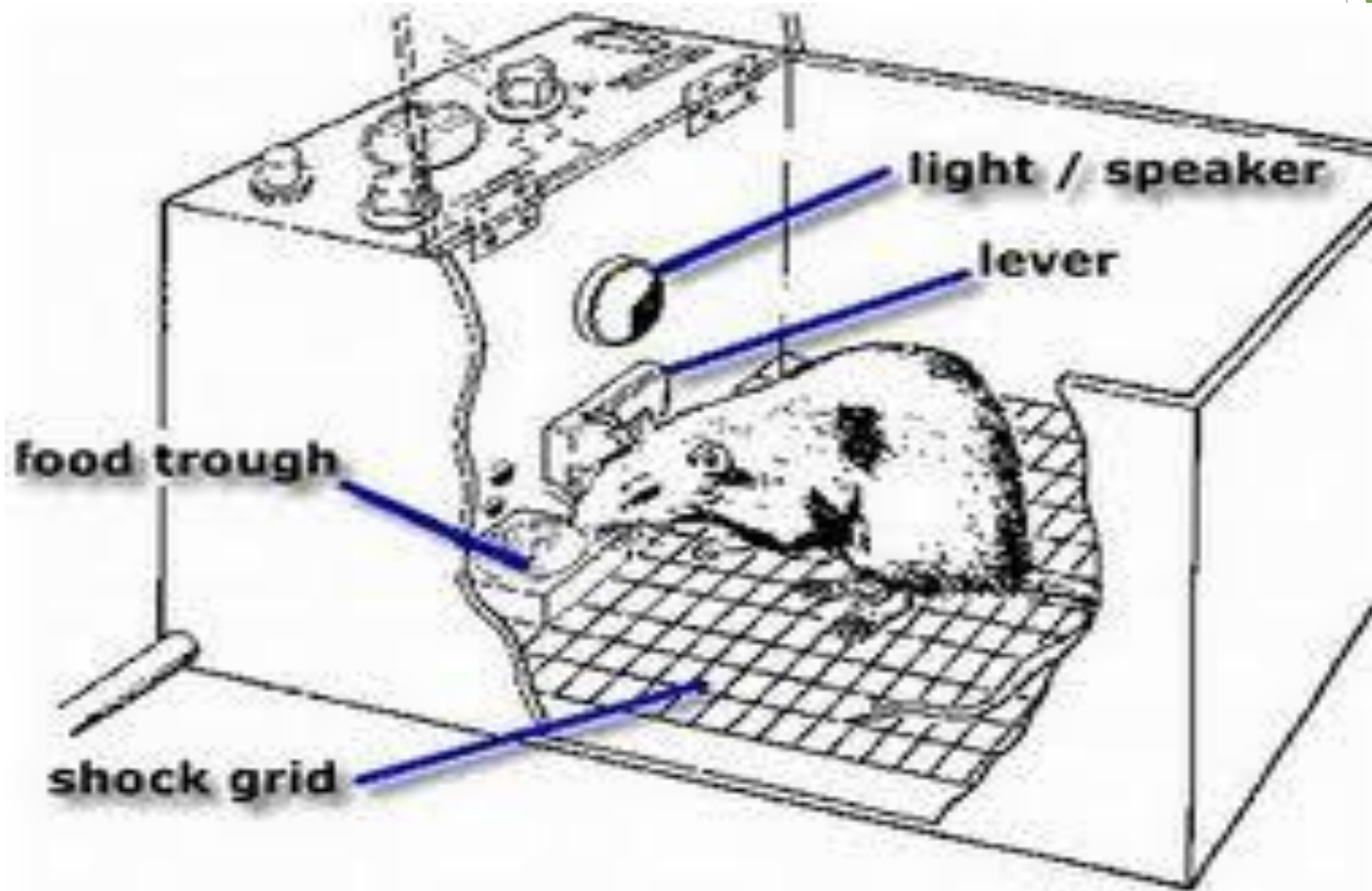
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# Experiment

- put hungry cat in puzzle box.
- only one door for exit which could be opened by correctly manipulating a latch.
- A fish was placed outside the box.
- smell of fish worked as a strong motive for hungry cat to come out of the box.
- Cat made every possible effort to come out (what efforts he might have taken?)
  - 1) Tries to squeeze through every opening.
  - 2) A claws & bites of the bars or wires.

- ▶ Number of random movements, in one random movement by ‘chance’ not purposely the latch was opened.
- ▶ The cat come out & got his ‘reward’, for another trial process was repeated.
- ▶ Cat was kept hungry etc.
- ▶ This time it took less time in coming out.
- ▶ so incorrect response were diminished out like biting, dashing etc.
- ▶ Cat learned the art of opening the door.

# Example



# Analysis of characteristics

- ▶ where there is drive (motive) stimulus there is learning.
- ▶ The organism makes a number of varied types of response.
- ▶ Some response lead to the goal known as satisfying response (what were the satisfying response?)  
e.g. pulling the strings etc.
- ▶ Some response do not lead to the goal known as annoying responses (afterwards eliminated)  
e.g. clawing, pawing, scratching, walking.

# Laws of learning

1. Law of readiness
2. Law of exercise
3. Law of effect

# Law of readiness

- ▶ Child's mental preparation for action & not to force the child to learn if he is not ready.
- ▶ When mental preparation (ready) then only satisfaction otherwise not satisfaction.

## Implication-

- ▶ Teacher should prepare student's mind to be ready to accept knowledge, skills, aptitudes etc.
- ▶ Provide opportunities for experiences.
- ▶ Aptitude test to find readiness/interest.

# Law of effect

- ▶ It is about importance of effect or consequences in strengthening & weakening of connections.
- ▶ Success brings satisfaction, strengthens.
- ▶ Failure brings dissatisfaction weakness.

## Implications-

- ▶ So the role of rewards & punishment in the process of learning is important.
- ▶ Teacher should be sympathetic but firm.
- ▶ pleasing environment should be created in classroom



- ▶ Material should be provided in interesting way
- ▶ Experience provided to students should be satisfying & meaningful.

# Law of exercise

- Role of practice in learning

2 sub laws

1. Law of use
2. Law of disuse

- ▶ With practice connection is strengthened
- ▶ When practice is discontinued connection is weakened
- ▶ You can lead a horse to the water but you cannot make it drink.
- ▶ Practice makes man perfect

## b) Classical conditioning theory - Pavlov's

- ▶ It is developed by Russian physiologist Ivan P. Pavlov in 1904
- ▶ It is defined as a process in which a neutral stimulus by pairing with a natural stimulus acquires all the characteristics of natural stimulus.
- ▶ It is called substitution learning because we substitute a neutral stimulus in place of natural stimulus.
- ▶ This is called as respondent conditioning because the subject has nothing to do himself & becomes conditioned & does the things.

# Experiment

- ▶ Pavlov kept a dog hungry for a few days & then placed it in a sound proof room which was fitted with certain mechanically controlled devices.
- ▶ Arrangement was made to give food to the dog through an automatic mechanism
- ▶ But every time before giving food a bell was rung.
- ▶ When the food was given & bell was rung it was marked that there was a automatic secretion of saliva from the mouth of the dog

- ▶ This activity was repeated several times.
- ▶ After several trials the dog was given no food but the bell was rung.
- ▶ It was found that even the absence of food (natural stimulus) the ringing of bell (artificial stimulus) caused the dog to secrete the saliva. (natural response).
- ▶ The above experiment thus brings to light four essential elements of the conditioning process.

1. Unconditional stimulus (UCS) (Dog's food) = Unconditional response (saliva) (UCR)
2. Conditional stimulus(CS) (Bell) + unconditional stimulus (food) = UCR (saliva)
3. Conditional stimulus(CS) (Bell) = Conditional response (saliva)

# Educational implications

1. The formation of positive attitudes, fears, love, prejudices or hatred towards an object or event can be developed through conditioning. Thus classical conditioning can be used to develop favorable or unfavorable attitude towards learning, teacher & school.
2. We should associate faults with punishment so that whenever a child feels like committing faults, he/she anticipates the punishment. Thus rewards & punishments may be given at the time of the act & not to be delayed.



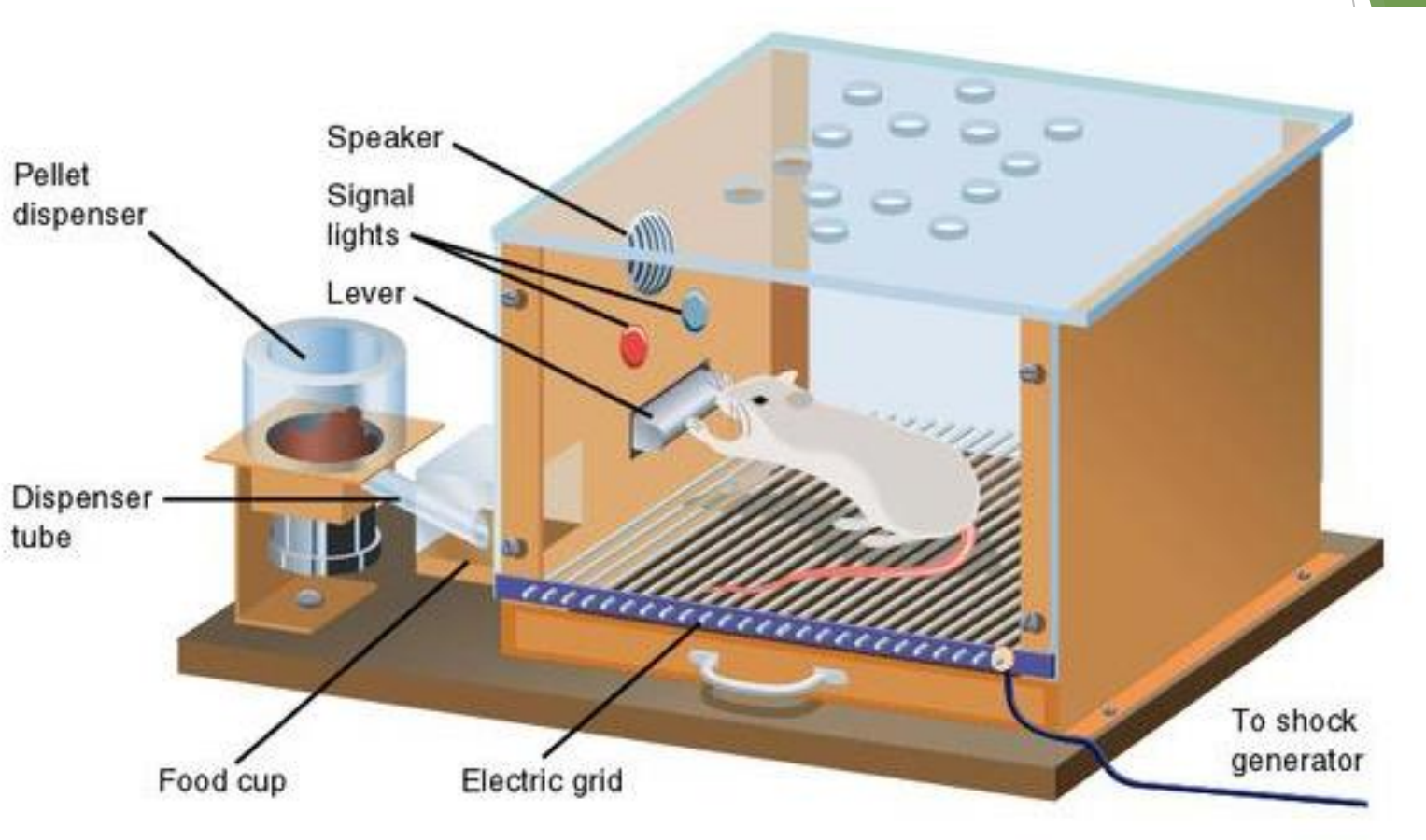
# (c) Operant or instrumental Conditioning theory - Skinner

- ▶ This theory proved importance of reinforcement in learning rather than connectiveness.
- ▶ Theory is called as Operant as it is based on certain operations or actions which person has to carry out.
- ▶ In classical theory of Pavlov, the dog has harnessed on tables & was passive . The dog reformed no operations.

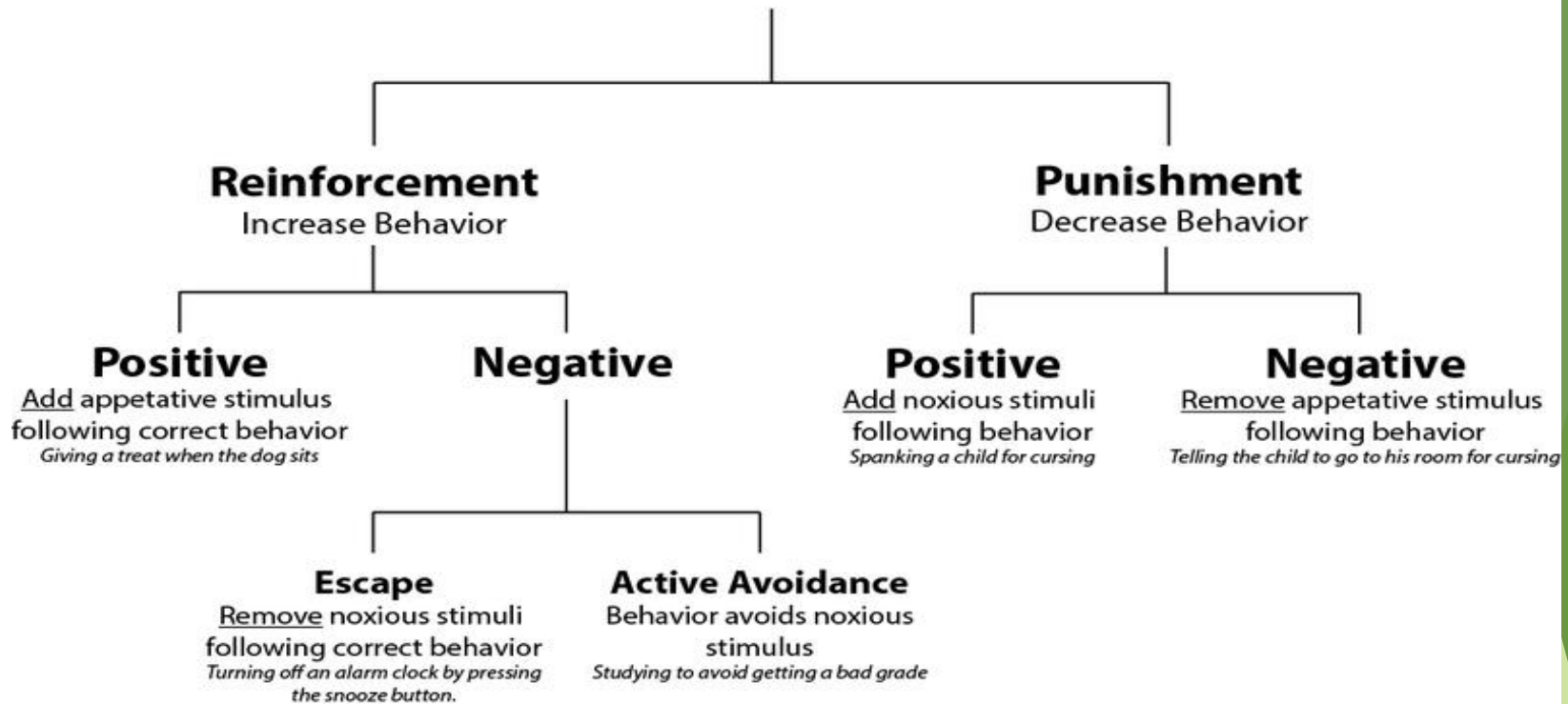
# Experiments

- ▶ Skinner conducted a series of experiments with animals.
- ▶ For conducting experiments with rats, he constructed a sound proof box which was equipped with a bar & food tray.
- ▶ He put hungry cat in the box
- ▶ It is so arranged that when the rat presses a lever, the feeder mechanism is activated a light or special sound is produced & a small pellet of food is released into the tray.

- ▶ All these activities were connected to recording system.
- ▶ Thus rat learned the task of pressing the bar more frequently when the food pellet reinforced the behavior.
- ▶ Here giving out the correct response is more important & succeeded in changing the traditional S-R formula to R-S formula.



# Operant Conditioning



**Positive** presence of a stimulus

**Negative** absence of a stimulus

**Reinforcement** increases behavior

**Punishment** decreases behavior

**Escape** removes a stimulus

**Avoidance** prevents a stimulus

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# Implications

- ▶ The theory provides basis for programmed instruction. It is a kind of learning experience in which a programme takes the place of the tutor for the students & leads him through a set of specified behaviors.
- ▶ The theory has drawn attention to the inadequacy & instability of reinforcement procedure adopted in our educational system. Thus the element of reinforcement can be strengthened in the teaching learning process.

- ▶ The principle of operant conditioning can be applied in behavior modification & ultimately desired behavior can be strengthened. Depending upon the manipulation of reward.
- ▶ O.C. emphasizes the importance of schedules in the process of reinforcement of behavior.
- ▶ O.C. suggested appropriate alternatives to punishment in form of rewarding appropriate behavior & ignoring in appropriate behavior for its gradual extinction.

- ▶ The root of mechanical learning in the form of teaching machines & computer assisted instruction have taken shape in place of usual classroom instruction due to O.C.



# (d)The Gestalts theory of Learning

Gestalt is a German word.

- Gestalt- Organized whole.
  - study of totality or whole.
- the theory has focus on the meaning of Learning of the aspects of situation within which a person & his psychological environment come together.
- The theory is concerned more about the experience of the subject in a situation.

- ▶ Max Wertheimer is the founder of Gestalt psychology.
- ▶ The other psychologists in this theory of insight are Kurt Lewin ,Kurt Goldstein,Wolfgang Kohler
- ▶ Kohler's experiment, on chimpanzee named sultan.
- ▶ His most famous book - *Mentality of Apes*

# Experiment of a kohler

## Problem-1

- Sultan was kept inside a cage with a stick.
- Outside kept a banana.
- Attracted by the banana ,sultan made many efforts with his hand to reach the banana.
- He was also playing with stick.
- Sudden sultan picked up the pole & using the pole pulled the banana.& ate it.

## Problem-2

- ▶ Sultan had two sticks like fishing pole.
- ▶ This time banana was beyond the reach of the individual poles.
- ▶ Sultan failed to reach banana with a single pole.
- ▶ After managed to put together the poles, & reached the banana.

# Problem-3

- ▶ Sultan inside the cage.
- ▶ a banana was hanging from the roof of the cage.
- ▶ Sultan tried to reach the banana by jumping but could not succeed.
- ▶ Suddenly he used the boxes one by one to as a platform for jumping.
- ▶ Placed the boxes under the hanging banana & received the banana.



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# Educational implications

- ▶ Learning is purposeful & goal oriented task.
- ▶ The motivation for his interest & curiosity to learn is important.
- ▶ The learning material should be properly graded & structured.
- ▶ The learning should be understanding & reasoning. Role learning or mechanical repetition should be avoided. Learner is to help to perceive the similarities in learning to transfer it to another situation.