

LEARNING AND TEACHING

UNIT I CONCEPT of Learning

Learning is a key process & is necessary for all educational process. It pervades everything we do and think learning plays an important role in the languages we speak, our customs & beliefs. It involves ways of doing things in an individual attempt to overcome obstacles or to adjust to new situations. It is a progressive change in behavior as individual reacts to a situation in an effort to adopt his behavior effectively to the demands made upon him. Thus learning is change in behavior.

Definitions of Learning:

Crow & Crow: ‘Learning is acquisition of knowledge, habits and attitudes. It involves new ways of doing things in order to overcome obstacles or to adjust to new situations. It enables the person to satisfy interests to attain goals.’

Henry Smith: ‘Learning is the acquisition of new behavior or the strengthening or weakening of old behavior as a result of experience.’

Wood worth defines learning as-

“Any activity can be called learning as far as it develops the individual (in any aspect, good or bad) & makes his behavior & experiences different from what would otherwise have been”.

Thus,

- Learning may be defined as any relatively permanent change in behavior.
- Learning may be defined as the acquisition of knowledge attitudes, skills & ways of thinking.
- Learning is the permanent change in behavior for better or worse which results / occurs as a result of practice & experience.

Above definitions have 3 important elements:

1. Learning is a change in behavior for better or worse.

2. It is a change that takes place through practice & experience.
3. Before it can be called learning, the change must be relatively permanent i.e. it must last for a long time. Exactly how long cannot be specified, but we usually think of learning lasting for days, months, years in contrast to temporary, behavioral effects.

Thus learning is a complex process. It is a process by which all organisms, as a result of its interaction in a situation acquires a new mode of behavior which tends to persist and affect his behavior in the future. Thus learning takes place when an organism reacts to a situation. It consists of certain changes in behavior or adjustments and this type of behavior is utilized to some degree in other situations.

CHARACTERISTICS OF LEARNING

1. Learning is a process which is continuous & it never stops at any phase. It is a lifelong process hence learning starts from birth & ends only with the death of an individual. Hence we can say that learning proceeds from womb to tomb. E.g. when a child takes birth he first learns to cry for food, and at each phase of life at every step the child learns to walk, run, talk, write alphabets etc.
2. Learning is the process which leads to mental growth of an individual. The growth takes place along with the learning.
3. Basically when learning takes place the individual learns to adjust&adopt with the environment.
4. Learning is purposeful. Though learning takes place at every place & at every moment all the learning are not useful. Hence those learning which are useful & meaningful are learnt.
5. Learning is active process. Learning by doing is the best part of learning e.g. it becomes easy for the science students to learn the concepts in science when they perform practical.

6. Learning takes place individually & as well as socially e.g. When a seminar or workshop is conducted, then all the members of the group learn to share their thoughts, each one learns something new from the other individual.
7. Last but not the least learning brings about the change in the behavior in individual e.g. a child is always taught values & manners, & due to this teachings, a child learns to respect their elders & teachers, learns to speak politely etc, which bring about the change in his behavior as the child grows.

Steps in the Learning Process

Learning is a process and knowing the various aspects of learning helps the teacher in ensuring & making the learning effective.

1. **Need:** Learning takes place as a result of response to some stimulation. Unless the individual has some unsatisfactory need or derive which causes him to act in an attempt to satisfy the need, no learning will take place. When the need of the learner is strong, the learner sets definite goals for achievement of his needs & this makes learning more concrete.

E.g. A student, who wants to score a good grade, starts working right from the beginning.

Need should be made by the teacher by creating interest. The teacher should also help the child in setting attainable goals for himself.

2. **Readiness:** Every child is not ready to learn at a particular time. The child needs physical & mental maturity in order to learn. There should be mental & physical willingness to learn. We tend to pay less attention to this type of maturity. Many a time, we impose learning situations on a child before he is ready.

E.g. Public speaking cannot be taught to I std. child.

3. **Situation:** Learning depends on the situation provided at school & at home. In school, the learning environment should be conducive or

congenial. The teacher's attitude should be encouraging & the teacher should use suitable teaching methods & techniques. The type of situation provided by the teacher contributes towards the speed & quality of learning. E.g. Special methods can be provided depending upon the age of the child. In K.G. classes, training is generally given by the play way method.

- 4. Interaction:** The child with his needs & goals learns to interact in a learning situation. Interaction is a process of responding to a situation and getting a feedback from it. Interaction may be in the form of observations, emotional reactions, verbal reactions or physical reactions. Teacher should find ways & means to involve the students in the learning activity / process.
- 5. Exploration of the situation:** Exploration is the way the learner explores / interprets the stimuli in the environment. The correct responses cannot be determined at once. They require to be thought over; i.e. the whole situation needs to be explored. After trial & error, the learner comes to the right solution.
- 6. Perception:** Perception is to give some meaning to what you are seeing. Sensing + Meaning = Perception. Each one perceives the environment differently. As a teacher, one wants the class to perceive uniformly, so the teacher should use visual aids, diagrams, etc. Because of the individual differences among the students, each student perceives whatever is taught, differently, so teacher should cater to the need of every individual.
- 7. Response:** Response is the actual outcome of the learner. It is the outcome of interaction, exploration & perception of the situation. He may give a trial by direct attack to overcome the barrier in his way.
- 8. Reinforcement:** If the response is successful in action, in satisfying the need, that response is reinforced and on subsequent occasions the individual will tend to repeat it.

9. Integration: Learning implies the selection & organization of correct responses. The last step of the learning process consists in integrating the successful responses of the individual's previous learning, so that it becomes part of a new functional whole.

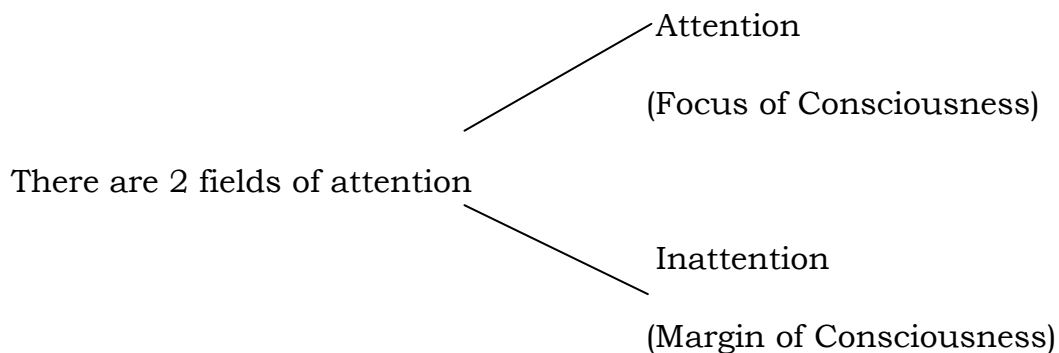
Factors Affecting Learning

ATTENTION

Attention is the major aspect involved in all the mental activities. We must attend before we know, feel or act. It is a characteristic of conscious life. It is the concentration of consciousness upon one object rather than another.

Definition of Attention- J.S. Ross: 'Attention is a process of getting an object of thought clearly before the mind.'

Dum Ville: 'It is the concentration of conscience upon one object rather than upon another. It is essential element in all creative activities.'



When we focus our attention on any object, other things lie in the margin of consciousness.

For e.g. When we are sitting in a train and reading a book, we are so engrossed in reading that the movements of the wheels of the train, the noise of the people around us or the sounds of the hawkers etc. does not disturb us because they lie in the margin of consciousness while reading was in the focus of consciousness.

Objects are continually passing from the margin to the focus and vice versa. What was clear at one moment is dim the next and what was but dimly noticed, becomes distinct. The marginal experiences are at any moment ready to enter into consciousness. For e.g. we can put aside the book which we were reading & listen to the sound of the wheels of the moving train if we want to. Thus, the mind selects out those elements which are to form the focus. So attention is selective.

Because of this selectivity, a person can get himself absorbed in a task. The so-called absent minded professor is not really absent minded, but on the other hand he is so engrossed with some problem of interest, that all other details of life are forgotten.

The psychological problem is to find out why we are likely to attend to something more than others and what kind of things are likely to catch & hold attention. There are many stimuli competing with each other and we must know what factors control our attentions.

Factors that control Attention

I. Objective / External Factors: Are those conditions affecting attention which is concerned with the environment.

- 1. Intensity:** A strong stimulus is more likely to be noticed than a weak one, like a loud noise to a whisper or a bright light to a dull lamp.
- 2. Size:** A large object will draw attention more readily than a small one. Writing should be of appropriate size on the black board. A big advertisement or a tall building easily attracts our attention.
- 3. Repetition:** Very often in the classroom, the teacher repeats the content or makes the child repeat by doing drill work. This helps in attracting attention.

For e.g. the alarm bell of a clock would go unnoticed if it strikes only once.

- 4. Change:** To attract attention, change should not be a gradual one but a sudden one. A speaker modulates his voice to attract the attention of his audience.
- 5. Movement:** A moving object readily catches attention a child's attention is always attracted by a moving toy rather than by a steady toy. In a classroom, showing a film or T.V. helps in captivating the attention of the students.
- 6. Contrast:** Anything that is different from its surroundings is likely to stand out and catch the eye. E.g. Use of colored chalks for writing / underlining on the black board.
- 7. Novelty:** Anything that is new, novel as well as strange attracts attention. The teacher should make use of Novel ideas, sides, films & videos. Incorporation of new technology & new methods of teaching helps to capture attention.
- 8. Variety:** Variety means using various methodologies to retain student's attention.
- 9. Mysteriousness:** It is evident that when an element of mystery enters normal or common place behavior, attention is directed towards it at once.

II. Subjective / Internal Factors:

Those conditions of attention which are within the individual are called subjective factors. They are:

1. Motives – like hunger, thirst, sex, anger etc
2. Interest
3. Mindset / Attitude
4. Moods

Interest is the most important factor because we attend to those objects in which we are interested. Without interest, teacher fails to arouse attention & sustain it.

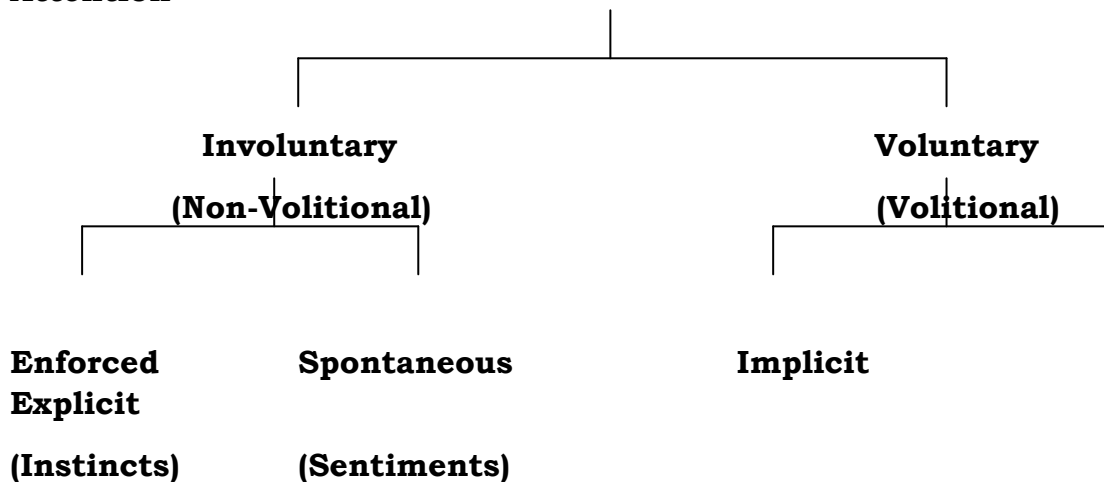
∴ Interest & Attention are 2 sides of the same coin.

Mc Dougall defines interest as “Latent Attention” and attention as “Interest in Action”.

Types of Attention:

Attention can be divided into groups namely Non- Voluntary or Non-Volitional & Voluntary or Volitional.

Attention



- ✓ When we attend naturally, easily spontaneously & without effort attention is said to be involuntary or non volitional e.g. when there is a loud sound we hear it without effort. This stimulus forces itself upon us & we pay attention. The quality of intensity & attracts attention. This type of attention is determined by instinct & therefore it is called enforced, involuntary or non-volitional attention.
- ✓ Attention which has been aroused by the sentiments is described as spontaneous non-volitional attention. This is due to the frequency of sentiment or interest. In spontaneous attention we attend easily to the stimuli, without any effort.

The teacher must build up in his children sentiments of love for the subject of study. To do this in the beginning the teacher will have to turn to the instincts like self assertion, constructiveness, acquisition (to possess) & later turn to the spontaneous type of attention though instinct & hobbies.

Voluntary or Volitional Attention:

There are many attentions in which we attend to an object only after making an effort. This type of attention is sustained, active & forced and can be divided into two types **Implicit & Explicit**. Certain attention is imitated by a single act of will which can be sustained for a long time like swearing of an oath. This type of attention is called implicit volitional attention. Implicit is by a single act of will. We have the next type of explicitly volitional attention which requires many repeated acts of will & this is known as explicit volitional or voluntary attention. E.g. child playing, coming late to the class when teachers.

E.g. A child needs to be reminded again and again about his examinations, so that he can make up his mind and attend to his duties.

In classroom teaching, attention in the beginning is volitional, but by linking the subject matter to instinct or sentiment, attention becomes spontaneous and thus non-volitional.

An infant has to pay volitional attentions in actions like walking or pulling on a dress, but once these habits are formed, attention becomes non-volitional.

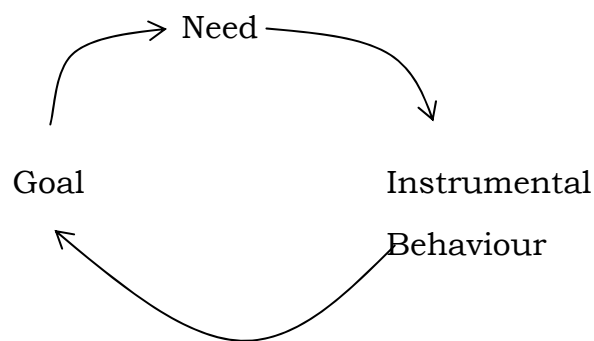
Educational Implication

1. As the span of attention of the student is very short, hence teacher should start from very simple concepts and then proceed to the very difficult / complex concepts.
2. Matter should be presented in the form of meaningful pattern or a group since mind has a tendency to apprehend complex wholes.
3. Fluctuations of attention can be minimized by the proper use of stimulus for e.g. Modulation of voice, use of teaching aids etc.
4. The teaching aids should be used at the proper time and not displayed in advance to avoid division of attention.

5. It should not be expected that students write in good handwriting as well as maintain speed since the latter will suffer at the behest of the former.
6. Note of summary should be given only after explanation is over, so as to avoid division of attention between of listening to the teacher and writing. This will not affect the concept formation.

MOTIVATION

It comes from the Latin word 'movers' which means 'to move' or to 'initiate'. Thus motivation can be represented by a cycle consisting of (i) a need or a drive which (ii) arouses instrumental behavior & in turn (iii) results in achieving a goal.



According to Goods:- “Motivation is the process of arousing, sustaining & regulating activity”

Crow & Crow:- “Motivation is considered with the arousal of interest in learning & to a great extent is basic to learning”.

Locke:- proposed that “will” always initiates action in man which is determined by some pressing uneasiness (Desire).

“Motivation is the outcome of motives”.

Gates & others:- “Motives are conditions either physiological or psychological within the organism that disposes it to act in certain ways”.

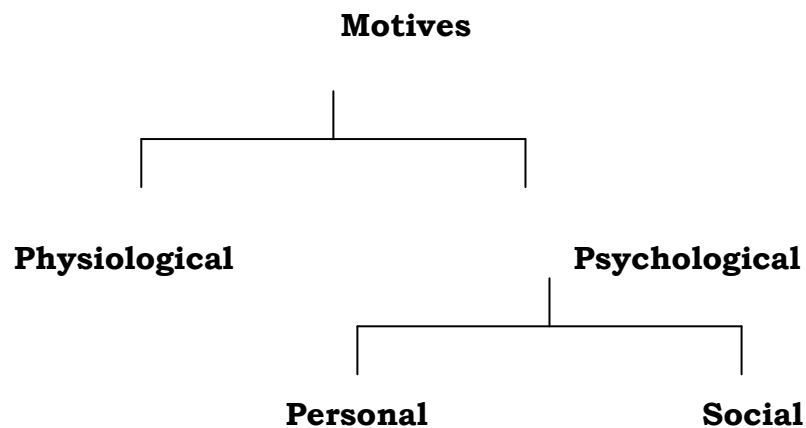
Maslow:- Motivation is constant, never ending, fluctuating & complex & is an almost universal characteristic of particularly every organism state of affairs”.

Thus Motivation is an intrinsic phenomenon in which one is activated / energized, interest is aroused or a behavioral change occurs in a direction towards the achievement of goal.

Need indicates ‘a want’ or condition of lack or deficiency in organism.

Drive is ‘an urge’ or some tension produced.

Motives are factors or circumstances that induce a person to act in certain way.



I. Physiological Motives: - Are those motives that are essential for the survival of the organism. These are also known as innate motives an individual possesses them from birth. There are also primary drives (basic) which are unlearned & common to every animal & necessary to sustain life e.g. Hunger drive, thirst drive, sex drive.

i. Hunger Drive:- Arises due to deprivation of food there is an imbalance of the glucose levels in the blood which forms the bases of

carbohydrates i.e. glucose level decreases & thus there is a basic derive to satisfy that need.

ii. Thirst Drive: - Arises due to need of water. The level of salt (sodium chloride) in the blood falls below a certain point, giving rise to thirst drive so that we may drink water in order to maintain biochemical balances within the body.

iii. Sex Drive: - This is important for survival of the species while hunger & thirst drive are for the survival of the individual himself.

The sex drive results due to the hormones in both males (testosterone hormones) & females, (estrogen hormones), in differing quantities of every species.

II. Psychological Motives: - There are acquired motives & sometimes they are modifications of physiological motives.

They are further categorized into 2 groups: Personal & Social motives.

i. Personal Motives: - Are motives seeking their origin in the individual himself e.g. every individual has interests, attitudes, etc. Some of the personal motives fear & aggression are dealt here:-

a. Fear: is a complex motive & aims at avoiding or exemplifying the source of fear is important motivation in dealing with the hazards in our environment. Fear in turn is associated with pain for e.g. one who is bitten by a dog, learns to be afraid of it and avoids it whenever he sees any dog close to him.

b. Aggression: Results from non fulfillment of other motives which produce frustration. This frustration sometimes gets converted into aggression. It is a means of coping with environmental attractions. Children when punished severely for their aggressive behavior, behave aggressively even with their dolls.

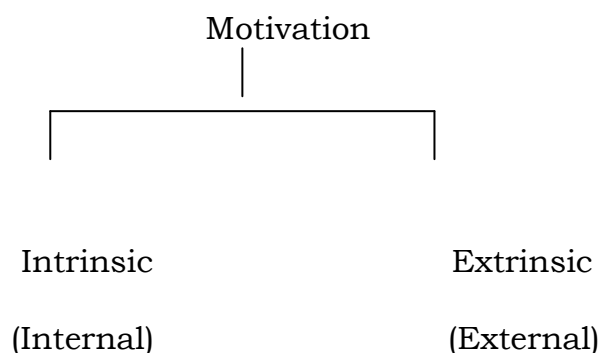
ii. Social Motives: - Man is a social being & his wishes, desires; ideas are the outcome of the society in which an individual acquires them through

mutual interaction. These motives are availed in each & every member of the society. Two of the prominent social motives are.

- a. Achievement:** - Here the desire to perform with excellence is prominent while achievement motivation has social aspects; it is also termed as ego integrative motive. It is abbreviated as need for achievement (n-Ach) & is deeply rooted in our culture. Individuals high in n-Ach function best in competitive situations & are fast learners, self confident, the responsible, relatively resistant to outside social pursuers.
- b. Affiliation:** It is actually an important sentiment related with the feeling that an individual is a part of a group. Fear & anxiety are closely related to the affiliation motive. Affiliated behavior takes various forms from extremes, depending through ordinary companionship & friendship, to the loyalty & devotion of happily married couples. For example, children who are raised in close- knit families, show a stronger affiliation motive than those coming from more loosely knit families. Neglected children or destitute, on the other hand, may lack intensity of the affiliation motive.

Pleasure of working leads to motivation

Types of Motivation



Intrinsic Motivation / Internal Motivation

It is self motivation i.e. when an individual recognize an activity as self rewarding & derives satisfaction from the activity. The motives come from within the person & external pressure is unnecessary.

Play is a good example of interestedly motivated behavior. One need not force / bribe a child to play. They play because they want to.

Intrinsic motivation is the urge to learn for the sake of learning. When a child considers activity such as reading to be source of pleasure, he is motivated intrinsically to read.

Extrinsic Motivation / External Motivation

In extrinsic Motivation, the reward lies outside the activity & also outside of the person. When a child studies for the sake of a good remark or rank or a reward / scholarship, he is motivated extrinsically. He pursues the activity not for its own sake but for the sake of some external reward.

E.g. when the child does not show any interest in an activity, teachers should make use of extrinsic motivation such as rewards, honors etc. But incentives we rewards prizes are not a substitute for interest.

Intrinsic motivation is from within & hence better & persistent, so teacher should try & motivate intrinsically.

Motivation in the class – Classroom Techniques

Provision for motivation in the school will depend on a no of factors. There are certain conditions which may prove useful in creating motivation.

1. **Maturation & Motivation:** It is not wise to stimulate a child for activities before he is physically, socially & mentally mature. We expect our children at 3 ½ years of age to be able to read & write the alphabets. A little deviation on the part of a child from the standard or class would

render problem to the child's growth & therefore should be avoided. To make the children learn something beyond their level of may bring feelings of frustration & failure which later inhibit the mental growth & reduces the rate of learning. On the contrary, properly planned curriculum & teaching according to the age and the mental level of the children will in meaningful to them. They get interested & therefore get involved in such learning because they see some purpose or goal in their work & ways to achieve them.

2. **Effective Repetition - Hedonistic Principle:** Repetition has been used as a method of learning by teachers. In ancient India when books were not available, scholars memorized whole books. Mechanical repetition does not lead to good learning. But if done with understanding, effectively & meaningfully, then one gets satisfaction from such actions & voluntary repetition is possible. The hedonistic principle of pleasure leads to repetition & to satisfaction. The law of effect therefore comes into operation. The bond between the stimulus & response strengthens giving rise of pleasure i.e. connections which are made in the brain gets strengthened due to frequent repetition and this in turn leads to effective learning. The pupil tends to repeat & willingly works further due to which feels a sense of satisfaction. ∴ Satisfaction in any activity provides further motivation to perform par excellence in that particular act.
3. **Active Participation:** Students tend to do better when there is active participation. The school should therefore plan activities like cultural activities so that pupils get interested & motivated.
4. **Emulation:** There is a lot of competition nowadays in education. Pupils tend to imitate & this tendency can be utilized to motivate the students. E.g. good pupils can motivate others to become equally good & competition may be either within individuals or in group.
5. **Group Work:** We are trying to build a society on the spirit of collectiveness. It is the duty the teacher to stimulate the spirit of selfless work for the good of the group as an individual. Such activities bring out noble qualities which leads the society in the healthy environment. E.g.

social service, team work, in fighting shyness & also allowing pupils to organize & manage their own activities like exhibitions, excursions, etc.

6. **Evaluation & feedback:** Proper evaluation of work is necessary for effective motivation. The present system of exams in spite of its drawbacks motivates pupils to work. Sound internal assessment provides motivation to learn. Information regarding the pupil's progress should be given from time to time. It is the awareness of ones successes leads pupils to work for further. Testing has to be given from time to time.
7. **Teacher- pupil relationship:** There should be a good relationship between the teacher and the pupil in order to motivate the pupils to work. Pupils should have individual contact with teachers outside the classroom. The teachers should also accept his pupils and this leads to better understanding & motivation.
8. **Value of learning:** The teacher should highlight the value of learning among his pupils. They should realize that 'knowledge is power' and can be helpful in life and will make them successful. The importance of learning should be related to the future life of the pupils.
9. **Success & Failure:**Both these concepts / aspects play an important role for building or developing the personality of an individual. It is said that thee should be always on equal share of success and failure. A learner or any individual should have a greater level of success so that he is highly motivated. The teacher should try to help the learner to know his potentials capabilities and goals to be set which can be achieved an individual has to experience success in one area or another.
10. **Rewards & punishment:** The prospects of getting rewards like prizes, degrees serve as a definite motive for work. These are positive in character as they realize talents & qualities and tend to develop them further a pupil may to get a first rank is class. Rewards are more effective than punishment. In the past, physical punishments was order of the day the class generally had a masters one to teach & one to maintain discipline punishment may be in form of caning and humiliation. Punishments are of a negative character and based on the

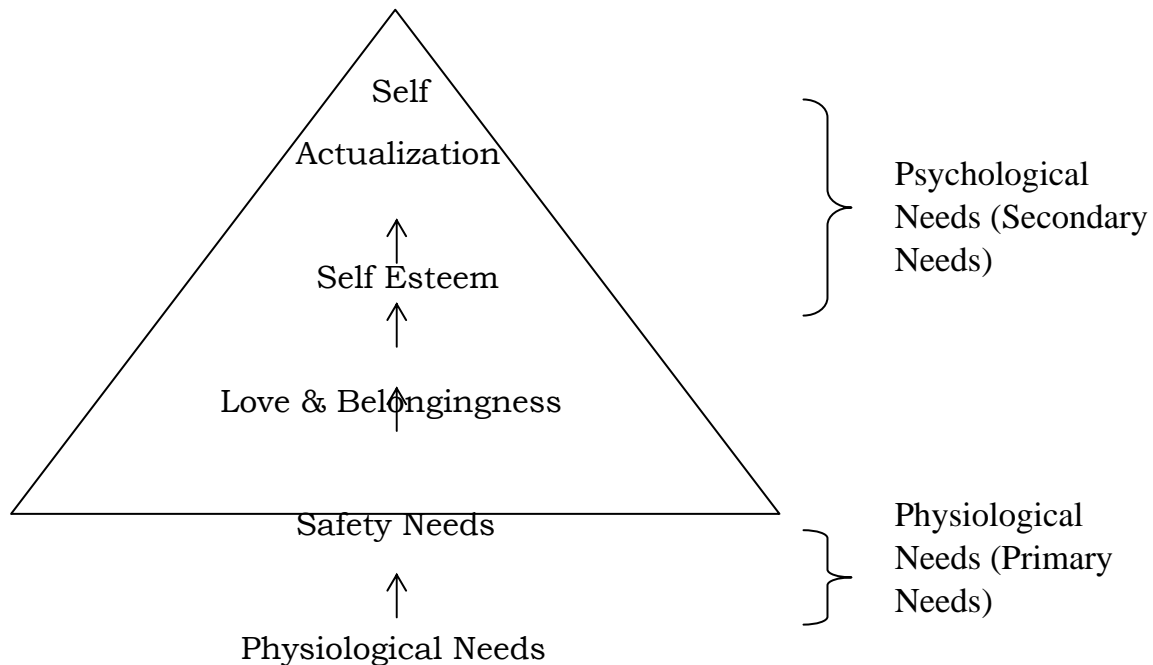
fear of basing prestige, rejection implicit or physical pain. Extreme punishment can kill the timeline, resourcefulness and the spirit of thinking fear of in an exam is a negative motive because pupils work not for the of learning but because of the fear of failure & rejection. Such negative negatives lead to a verity of antisocial such as spying, quarrelling, bribery and later lead pupils to grow into undesirable citizens. Punishment may be in the form of finding faults but this type of punishment proves useful because they motivate pupils to work in desired lines. It is better to scold boys who are bright & extrovert. The question therefore is not whether reward or punishment is good or bad but in the careful use in the class.

11. **Co-curricular Activities:** Sports, clubs, dramas, debates, etc. play an important role in motivating students to work therefore the school should provide many activities so that students are able to such activities that interest them these activities develop interest & stimulate the talents they motivate the students to learn & work on their own e.g. Children interested in service may join service duct & conduct experimental work.
12. **Progressive Methods of Teaching:** The teacher should use new modern methods to create interest like programmed teaching, team teaching & the discussion method, project method, heuristic method of teaching. These methods are child- centered and based on important psychological principles.
13. **Use of Teaching – Learning Aids:** The teacher should introduce various aids and devices of teaching, for example, audio- visual aids, radio, computers, etc. to create interest in learning. These will motivate children in grasping and digesting new learning.

Maslow's Theory of Hierarchy of Needs

This theory was proposed by Maslow a clinical psychologist in an attempt to understand human personality & motivation he developed on literarily of needs that has to be satisfied by individual. He strongly felt that when one

need is satisfied, the higher order needs emerges which operates our life. He has classified the needs into basic or lower order needs & higher order needs.



1. Primary / Physiological Needs: - These are the most potent of all and considered as the basic / elementary needs as they are hunger, thirst, sex, pain, fear, anger, curiosity which are unlearned. These needs relate to the survival and maintenance of human life. For e.g. as the society becomes complex, his needs cannot be met readily as they are by animals. In a city, a man cannot satisfy his hunger by picking up the first edible thing available and eat. To satisfy his hunger, he must buy food with money, which he has to earn. So the biological need- hunger drive can be satisfied only by the passion of money. Thus simple needs and drives are modified into secondary needs and resultant drive. The deprivation of the basic needs motivates an individual to do some activity in order to satisfy those needs.

For e.g. the need to rest when tired, thirst makes person aware of need for water. **Educational implication:** The teacher must realize that effective learning is possible only when the physiological needs of pupil

have been met for e.g. a hungry child who comes to school will not be able to perform effectively till his needs are satisfied. Indian schools provide mid-meal, play periods etc.

- 2. Safety Needs or Security Needs:** - As the basic need are satisfied, the safety needs arises for the individual. These needs relate to the economic and physical security, law & order i.e. a need to have safe, secure & conducive life.

For e.g. any loss or set back, threat to our freedom or status, our faith & primary, makes us feel insecure.

Educational Implication: Child education great emphasis is laid on security need of children, i.e. of a school is well organized, discipline is consistent, teachers approach is fairly predictable then young will imbibe a sense of security.

These are two primary needs, unless are satisfied, we will not be motivated to satisfied the secondary needs/higher order needs.

- 3. Love & Belongingness or Social Affiliation Needs:** - As soon as the safety needs are met, an individual proceeds to making intimate relationship with the other that of loving others & being loved by other. He is motivated towards satisfying the desire to the wanted or to be a part of the society. Socializing is one of those reasons why many individuals (especially older people) go to work, and why people generally work better in small groups where they can develop affiliations that are important to them. E.g. need for love, affection, affiliation, acceptance, and belongingness.

Educational Implication: The teacher by his gentle and kind treatment builds up a strong motive power for learning and school work.

- 4. Self-Esteem Needs:** - This need emerges as a result of love & belongingness. It refers to self respect, status & fame, success etc. It is the need to feel the sense of self worth. This needs relate to the awareness of self- importance and recognition from others. E.g. need for

self- image, self- confidence, self- respect, status, recognition prestige, attention, and respect from others. Our ambitions are gently influenced by this need & we try to make our life worthwhile so that one can receive recognition & praise from our fellow beings.

Educational Implication: - In the school there is a system of grades, honors, prizes thus providing recognition to large variety of talents, activities, like debates, recitation, games. Since parents believe that their sons and daughters are trying to earn a better status in life through education it always, posited for the teacher to appeal to this mourn in Indian scrods through praise encouragement and appreciation.

5. Self-Actualization Needs: - Morris- “It is a desire to make the best one can out of our self”.

It is the highest need of the system & the most evolved motive. It is the hardest to fulfill. It is a state in which one knows & understands his worth & realizes his potentials & talents to the maximum possible extent. A sense of mastery or perfection is attained.

Thus, Maslow’s theory reveals that all our activities or motivation is directed towards qualification of needs which secondary needs. It shows that without satisfaction of the more basic needs, human growth is limited. E.g. need to grow, sense of fulfillment, maximum self-development, personal achievement, self realization.

A hungry child who comes to school will not be able to perform effectively because his physiological needs have not been fulfilled.

Teachers should to help the students by supporting & encouraging their performance.

Merits of Maslow’s Need Hierarchy

1. It is simple to understand and has an intuitive appeal.
2. It recognizes the spectrum of human needs and indicates how humans are motivated in their work behavior.

3. Its basic proposition that deprivation of a need dominates behavior seems to be quite sound.
4. It provides some guidance to teachers and educational administrators.
5. Identification of unfulfilled needs among the various learners can help to resolve many problems related to learning.
6. Designing of measures to satisfy unsatisfied needs as a means of motivation.
7. Designing of measures to arouse new higher level needs.

MATURATION

Maturation comes with learning and not necessarily with age.

View of Boring, Longfeld & Weld: 'Maturation means growth and development that is necessary either before any unlearned behavior can occur or before the learning of any particular behavior can take place.

View of Garry & Kingsley: 'Maturation is the process where by behavior is modified as a result of growth and development of Physical structures.

Riesen – "Maturation is necessary but not a sufficient condition for life."

Thus, Maturation is essentially a process of modification from within, an innate ripening or development of the capacities of the organism.

- ✓ Both learning and maturation are inter- related, inter- dependent, the one aiding or retarding the other.
- ✓ Maturation depends upon hereditary endowment and provides the raw material for learning and determines the more general patterns and sequences of individual's behaviors. But without practice, development would not take place through maturation alone.
- ✓ There are certain phylogenetic functions which are common to the race, like walking, crawling, sitting, creeping etc, which are mostly due to maturation and less due to learning.

- ✓ There are other onto-genetic functions which are due to the individual only like swimming, cycling etc. They are mostly due to learning and less due to maturation.
- ✓ Individual differences in attitude, interests, ambitions and personality patterns are not due to maturation alone, but due to maturation and learning. If development is the result of maturation alone, then there would not have been individual personalities.

Difference between Maturation and Learning

Maturation	Learning
• Based on heredity	• Based on environment
• Automatic process	• Planned process
• Age limit	• No age limit
• Related to individual potential capacities	• Related to activities and experiences
• No need of practice	• Need of practice
• No need of motivation	• Need of motivation
• All situations helps in attaining maturity	• Only conducive situations

Educational Implications

- ❖ Maturation and learning are inter- related and inter –dependent, keeping this in mind a teacher should plan various teaching- learning activities.
- ❖ It helps parents and teachers to know what and when to begin learning process.
- ❖ Interrelationship between maturation and learning establishes a ‘Time-Table’ for learning. Thus any attempt to teach a child at too early a period of development, may result in his learning bad habits or wrong ways of learning either of which results may greatly handicap him in later life.
- ❖ Thus if learning precedes maturation there is more wastage of time and energy.

- ❖ Learning should begin when the child is ready to learn. But if the child is ready to learn and he is not given proper guidance or training, his interest is likely to waiver.

Kolb's Learning styles

- Kolb expressed this “cycle of learning” as four – stage cycle of learning, in which ‘immediate or concrete experiences’ provide a base for ‘observation and reflections’.
- These ‘observations and reflections’ are assimilated and distilled into ‘abstract concepts’ producing new implications for action which can be ‘actively tested’ in turn creating new experiences.
- Kolb’s model therefore works on two levels:
 - 1. Concrete Experience – (CE)
 - 2. Reflective Observation – (RO)
 - 3. Abstract Conceptualization – (AC)
 - 4. Active Experimentation (AE) – and a four type definition of learning styles, (each representing the combination of two preferred styles like-----
 - 1. Diverging (Feeling and Watching - CE/RO) – Able to look at things from different perspectives.
 - 2. Assimilating (Watching and Thinking – AC/RO) – Assimilating learning preference is for a concise, logical approach- more interested in ideas and abstract concepts.
 - Cont---
 - 3. Converging (Doing and Thinking - AC/AE) - Solve problems and will use their learning to find solutions to practical issues.
 - 4. Accommodating (Doing and Feeling – CE/AE) – Use other people’s analysis and prefer to take a practical experimental approach.
- Educational Implications:
 - Active Experimentation
 - Reflective observation
 - Laboratory Group Work

- Individual Problem solving
- Examinations- Multiple choice- deductive reasoning—

--**Gardener's**

Theory

of

Multiple Intelligence:

Gardner believes that eight abilities meet these criteria:^[3]

- Spatial
- Linguistic
- Logical-mathematical
- Bodily-kinesthetic
- Musical
- Interpersonal
- Intrapersonal
- Naturalistic

He considers that existential and [moral](#) intelligence may also be worthy of inclusion.^[4]

The first three are closely linked to fluid ability, and the verbal and spatial abilities that form the hierarchical model of intelligence^[5]

Logical-mathematical

This area has to do with logic, abstractions, reasoning and numbers and critical thinking. While it is often assumed that those with this intelligence naturally excel in mathematics, chess, computer programming and other logical or numerical activities, a more accurate definition places less emphasis on traditional mathematical ability and more on reasoning capabilities, recognizing abstract patterns, scientific thinking and investigation and the ability to perform complex calculations.^[citation needed] Logical reasoning is closely linked to fluid intelligence and to *general ability* (g-factor).^[6]

Spatial

This area deals with spatial judgement and the ability to visualize with the mind's eye. Careers which suit those with this type of intelligence include artists, designers and architects. A spatial person is also good with puzzles! Spatial ability is one of the three factors beneath *g* in the hierarchical model of intelligence.

Linguistic

This area has to do with words, spoken or written. People with high verbal-linguistic intelligence display a facility with words and languages. They are typically good at reading, writing, telling stories and memorizing words along

with dates. They tend to learn best by reading, taking notes, listening to lectures, and by discussing and debating about what they have learned. Those with verbal-linguistic intelligence learn foreign languages very easily as they have high verbal memory and recall, and an ability to understand and manipulate syntax and structure. Verbal ability is one of the most *g*-loaded abilities.

Bodily-kinesthetic

The core elements of the bodily-kinesthetic intelligence are control of one's bodily motions and the capacity to handle objects skillfully. Gardner elaborates to say that this intelligence also includes a sense of timing, a clear sense of the goal of a physical action, along with the ability to train responses so they become like reflexes.

In theory, people who have bodily-kinesthetic intelligence should learn better by involving muscular movement (e.g. getting up and moving around into the learning experience), and are generally good at physical activities such as sports or dance. They may enjoy acting or performing, and in general they are good at building and making things. They often learn best by doing something physically, rather than by reading or hearing about it. Those with strong bodily-kinesthetic intelligence seem to use what might be termed "muscle memory", drawing on it to supplement or in extreme cases even substitute for other skills such as verbal memory.

Careers that suit those with this intelligence include: athletes, pilots, dancers, musicians, actors, surgeons, builders, police officers, and soldiers. Although these careers can be duplicated through virtual simulation, they will not produce the actual physical learning that is needed in this intelligence.^[8]

Musical

This area has to do with sensitivity to sounds, rhythms, tones, and music. People with a high musical intelligence normally have good pitch and may even have absolute pitch, and are able to sing, play musical instruments, and compose music. Since there is a strong auditory component to this intelligence, those who are strongest in it may learn best via lecture. Language skills are typically highly developed in those whose base intelligence is musical. In addition, they will sometimes use songs or rhythms to learn. They have sensitivity to rhythm, pitch, meter, tone, melody or timbre.

Careers that suit those with this intelligence include instrumentalists, singers, conductors, disc jockeys, orators, writers and composers.

Interpersonal

This area has to do with interaction with others. Interpersonal intelligence is the ability to understand others. In theory, individuals who have high interpersonal intelligence are characterized by their sensitivity to others' moods, feelings, temperaments and motivations, and their ability to cooperate in order to work as part of a group. According to Gardner in *How Are Kids Smart: Multiple Intelligences in the Classroom*, "Inter- and Intra-personal intelligence is often misunderstood with being extroverted or liking other people..."^[10] Interpersonal intelligence means that one understands what people need to work well. Individuals with this intelligence communicate effectively and empathize easily with others, and may be either leaders or followers. They typically learn best by working with others and often enjoy discussion and debate.

Careers that suit those with this intelligence include sales, politicians, managers, teachers, counselors and social workers.^[11]

Intrapersonal

This area has to do with introspective and self-reflective capacities. This refers to having a deep understanding of the self; what your strengths/weaknesses are, what makes you unique, being able to predict your own reactions/emotions. Philosophical and critical thinking is common with this intelligence. Many people with this intelligence are authors, psychologists, counselors, philosophers, and members of the clergy.

Naturalistic

This area has to do with nurturing and relating information to one's natural surroundings. Examples include classifying natural forms such as animal and plant species and rocks and mountain types; and the applied knowledge of nature in farming, mining, etc. Careers which suit those with this intelligence include naturalists, farmers and gardeners.

Existential

Some proponents of multiple intelligence theory proposed spiritual or religious intelligence as a possible additional type. Gardner did not want to commit to a spiritual intelligence, but suggested that an "existential" intelligence may be a useful construct.^[12] The hypothesis of an existential intelligence has been further explored by educational researchers.^[13]

Ability to contemplate phenomena or questions beyond sensory data, such as the infinite and infinitesimal. Careers or callings which suit those with this intelligence include shamans, priests, mathematicians, physicists, scientists, cosmologists, psychologists and philosophers.

- Use stronger intelligence to understand the content of any topic.

- teachers should structure the presentation of material in a style which engages most or all of the intelligences
- Teachers must seek to assess their students' learning in ways which will give an accurate overview of their strengths and weaknesses.

Unit- II

THEORY OF LEARNING

Theories of learning have been classified into two main schools:

1. Association theories and
2. Field theories.

According to association theory, man is like a complex machine. His behavior is largely, if not entirely determined by his environment. His purposes or goals are often irrelevant.

According to field theory, man is an energy system, an adaptive, purposeful creature whose behavior is determined by the manner in which he perceives his environment.

Association theories	Field theories
Main proponents: Thorndike, Pavlov, Skinner, Hull.	Includes Gestalt's theory, Lewin's topological theory, and Tolman's sign-gestalt theory.
Stresses on S- R bond.	Restructuring of cognitive fields.
Stresses on Analysis.	Stresses on Integration.
Whole to part	Part to whole
Simple to complex	Perception of totality
Teacher - centered	Child - centered

PAVLOV'S CLASSICAL CONDITIONING THEORY OF LEARNING

Classical conditioning was accidentally discovered around the beginning of the 20th century by Russian physiologist Ivan Pavlov. Pavlov was studying digestive process in dogs when he discovered that the dogs salivated before they received their food. In fact, after repeated pairing of the lab attendant and the food, the dogs started to salivate at the sight of the lab assistants. Pavlov coined these phenomena as "psychic secretions." He noted that dogs were not only responding to a biological need (hunger), but also a need developed by learning. Pavlov spent the rest of life researching why this associate learning occurred, which is now called classical conditioning.

- ❖ Our mouth waters on seeing 'gulab jamun' or seeing 'chocolates' or a child associates dolls with pleasure.
- ❖ Mouth waters at the name of tamarind, lemon and paani puri, sev puri etc.
- ❖ Similarly, the child develops aversion for a particular subject, just because of the teacher's stern attitude who teaches that subject.
- ❖ The sight of stick/ rod creates fear in the mind of child if he has actually been hit by it sometime or other.
- ❖ Same way, if two girls have been seen together number of times, seeing one reminds us of the other.

These all are illustrations of Associative Connections.

This idea of association has been the basis of conditioned response theory, according to which learning consists in building up of new associative bonds between a stimulus and a response. The simplest interpretation of this phenomenon is that when two stimuli are presented repeatedly together, the new one first, then the original- effective one, the new one also becomes effective.

In classical conditioning, an organism learns to associate one stimulus with another. The organism learns that the first stimulus is a cue for the second stimulus.

KEY CONCEPTS OF CLASSICAL CONDITIONING

Unconditioned Stimulus (UCS)

A stimulus that elicits a response without conditioning

Unconditioned Response (UCR)

Automatic response elicited by the unconditioned stimulus

Conditioned Stimulus (CS)

A neutral stimulus that when paired with an unconditioned stimulus (UCS) elicits a similar response

Conditioned Response (CR)

A response that is learned by pairing the originally neutral conditioned stimulus (CS) with the unconditioned stimulus (UCS).

The food is an unconditioned stimulus (UCS) and the salivation is the unconditioned response (UCR). The bell is a neutral stimulus until the dog learns to associate the bell with food. Then the bell becomes a conditioned stimulus (CS) which produces the conditioned response (CR) of salivation after repeated pairings between the bell and food.

Dog – ringing of bell – No saliva

Dog –	food –	saliva
(Unconditioned stimulus/ natural stimulus) (UCS)	(unconditioned response/ natural response) (UCR)	

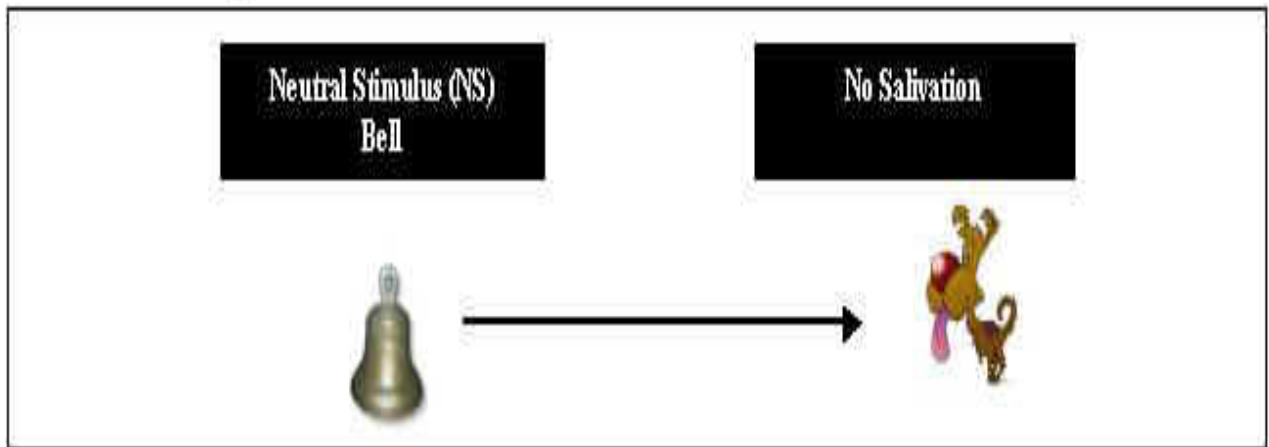
Dog –	ringing of bell –	food served –	saliva
	(Conditioned stimulus)	(US)	(Conditioned response)

(CS)

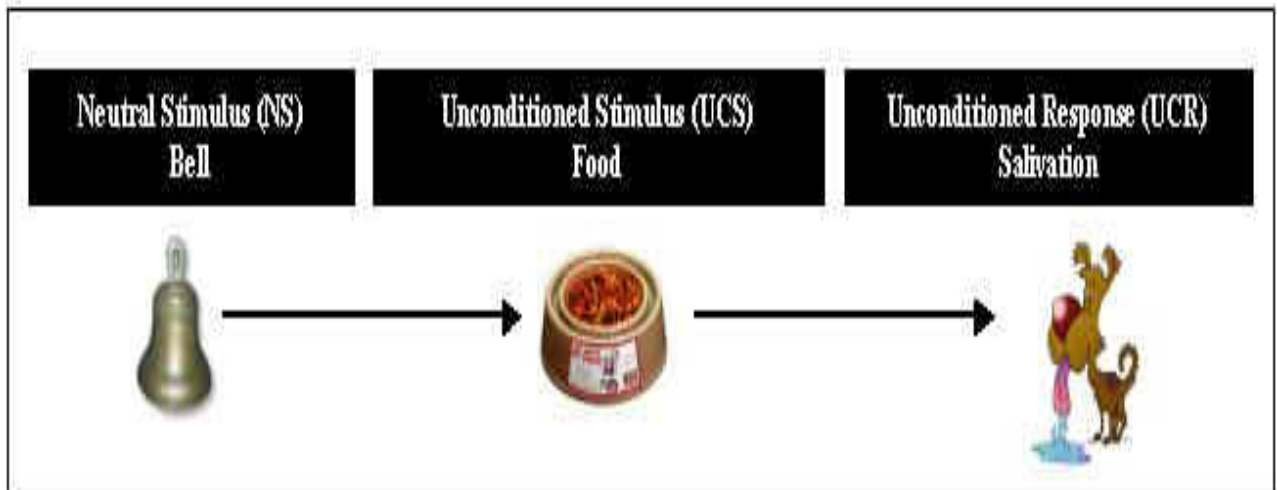
(CR)

Initially even if food is not served but bell is rung, the dog salivates. Thus the dog is now conditioned. But if no food is served but bell is rung continuously for few days in line, then over the period of time salivating stops.

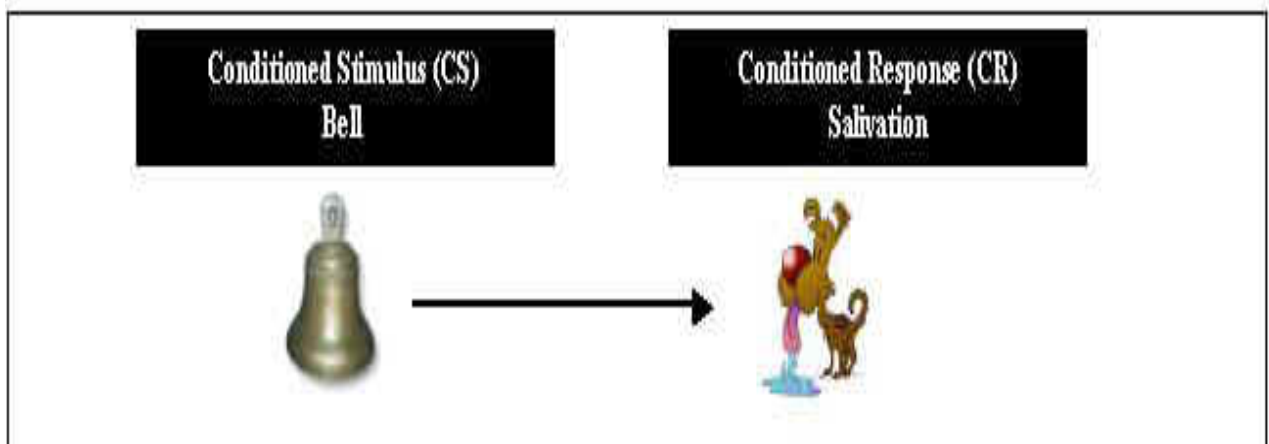
Before Conditioning



During Conditioning



After Conditioning



Principles of Classical Conditioning

The theory of Classical conditioning emphasized by Pavlov gave birth to number of important concepts and principles in the field of learning such as:

A. Principle of Acquisition – The acquisition phase is the consistent pairing of the CS (e.g. bell) and the UCS (food) that produces CR (salivation). In the example above, this phase occurs when the dog begins to salivate at the sound of the bell. Conditioning occurs more rapidly when the food follows the bell by half a second.

B. Principle of Stimulus Generalization – After an animal has learned a conditioned response to one stimulus, it may also respond to similar stimuli without further training- for example, using a different sounding bell.

C. Time lag or Factor - It means if there is time lapse between unconditioned stimulus (UCS) and conditioned stimulus (CS), then required response will not be obtained. E.g. when the child performs well in his exams, but if the teacher instead of appreciating his effort immediately, praises him after two months, the reinforcement will be of no use.

D. Principle of Extinction - The extinction phase is when the conditioned response no longer occurs after repeated pairings without the unconditioned stimulus. The dog's response to the bell can be extinguished by repeatedly presenting the bell (CS) without the food (UCS). The dog has not completely forgotten the association between the bell and the food. If the experimenter waits a day, the dog may have a spontaneous recovery of the conditioned response and salivate again to the bell. E.g. if the child is not encouraged after every proper act, then the child loses interest as well as motivation to do better as the child feels neglected and less appreciated.

E. Principle of Discrimination
The opposite of generalization, discrimination happens when a conditioned response does not occur when there is a difference between the presented stimulus and the original conditioned stimulus. If Pavlov's dog heard a bell

with a different tone and was not awarded the unconditioned stimulus (food), the dog would learn not to salivate to the second tone.

Conclusion:

- ✚ Replacement of natural strong stimuli is possible with artificial stimuli.
- ✚ Effect of conditioning is temporary.

EDUCATIONAL IMPLICATIONS

1. Discipline, good habits, virtues can be effectively learnt through the process of conditioning.
2. Many of our fears and phobias may be traced back to some kind of conditioning. When things and objects are associated with an unpleasant experiences and a sort of generalization is made, phobia appears. Such fears and phobias can be removed by de-conditioning.
3. Dislike for certain school subjects can be also be removed through reconditioning by associating pleasant stimuli with them.
4. Use of audio- visual aids in teaching- learning process involves conditioning theory. E.g. teacher shows the picture of cow along with written word 'COW', teacher also spells the word, later even if there is no picture shown to the child, the child associates the word seen with the picture.
5. Training of animals in circus is done with the help conditioning.
6. Conditioning is also used for developing positive attitude towards learning, teacher and school.
7. In lower class teaching of alphabets, tables, counting etc is done through conditioning. E.g. 'A' for Apple, counting with beads.

Cognitive Theories

David Ausubel: Verbal Meaningful Learning

Main Proponent of - verbal Meaningful Learning.

According to him learning should progress deductively i.e. from an understanding of the general concepts to an understanding of specifics.

According to him connection must be made with the students existing knowledge.

- a. Great deal of interaction between teacher and student.

- b. Greater use of examples which may include drawings, diagrams or pictures
- c. It is deductive
- d. It is sequential.

Advance Organizers

It is conceptual bridge between the new material and old knowledge.

(Advance Organizer Model)

Meaningful verbal learning involves internalization of the material presented to the learner, which takes place through *Progressive Differentiation & Integrative Reconciliation*. This is Reception Learning (RL) or Meaningful Verbal Learning (MVL) because most of the understandings about the concepts are presented, rather than discovered.

Progressive Differentiation:

More general and inclusive ideas of a discipline are presented first.

Gradually, step-by-step, the concepts are differentiated in terms of 'details' or 'specificity'. As learning proceeds, the individual organizes the contents of a particular topic in a hierarchy, with inclusive concepts at the apex & subsume progressively less inclusive and more highly differentiated sub concepts. Thus, **progressive differentiation** is facilitated.

Rationale: New ideas can be efficiently learnt and retained if more inclusive concepts are already available in the cognitive structure to help '**ideational anchorage**'.

Once the inclusive concepts are presented and organized within a learner, new ideas are taken in and relationships are explored between ideas to know similarities and differences. As a result, new learning takes place. This is **Integrative Reconciliation**.

In meaningful learning, meaningful material enters the cognitive field and interacts with (and gets subsumed under) a more inclusive, relevant system. Hence, the existing cognitive structure is a major factor affecting MVL. Hence, to facilitate learning, it is necessary to introduce appropriate

subsumers and make them part of cognitive structure, prior to presentation of the task. These introduced subsumers become **advance organizers** (anchoring points) for the reception of new learning material. (E.g. Algebra: Task: fundamental operations. Subsumer (advance organizer): operations of like and unlike signs for addition, subtraction, multiplication and division of terms).

In case of unfamiliar material, an expository organizer (analogy) can be used to facilitate ideational anchorage. E.g. 'Systems Analyses. Subsumer: Working of a factory.

In case of relatively familiar material, 'comparative' organizers / subsumers can be used.

E.g. 'Digestion & Respiration' Organizer: Burning of fuel.

If appropriate subsumer is not available, then relevant subsumer can be used.

E.g. Blue litmus is turned red by acids red litmus is turned blue by bases.

Reception Learning is not passive. The learner has to judge the new knowledge, identify discrepancies with past knowledge & reorganize knowledge into more inclusive concepts. This depends on learner's capability and motivation.

Educational Implications:

1. RL is important as most of school learning involves presentation of concepts rather than their discovery.
2. Abstract concepts can be taught effectively by presenting subsumers and help pupils grasp higher order relationships between abstractions.
3. Since MVL depends on critical ability and readiness to receive, teacher should make use of the following pedagogical techniques: - precise and accurate definition of concepts;- giving similarities and differences between related concepts, and enabling learners to define in their own words.

4. Since single concepts are easier to retain rather than to remember many specific items, subsumption begins during cognition. Hence, clear, relevant subsumers (advance organizers) should be provided.

5. When we teach separate chapters one after the other, children have to learn details of the topic before acquiring inclusive subsumers as generalizations. This adversely affects learning and retention.

Advance organizers (subsumers), therefore, facilitate meaningful learning and its retention.

The outcome of cognitive development is thinking. The intelligent mind creates from experience "generic coding systems that permit one to go beyond the data to new and possibly fruitful predictions" (Bruner, 1957, p. 234). Thus, children, as they grow, must acquire a way of representing the "recurrent regularities" in their environment.

So, to Bruner, important outcomes of learning include not just the concepts, categories, and problem-solving procedures invented previously by the culture, but also the ability to "invent" these things for oneself.

Cognitive growth involves an interaction between basic human capabilities and "culturally invented technologies that serve as amplifiers of these capabilities."

These culturally invented technologies include not just obvious things such as computers and television, but also more abstract notions such as the way a culture categorizes phenomena, and language itself. Bruner would likely agree with [Vygotsky](#) that language serves to mediate between environmental stimuli and the individual's response.

The aim of education should be to create autonomous learners (i.e., learning to learn).

In his research on the cognitive development of children (1966), Jerome Bruner proposed three modes of representation:

- Enactive representation (action-based)
- Iconic representation (image-based)
- Symbolic representation (language-based)

Bruner's Three Modes of Representation

Modes of representation are the way in which information or knowledge are stored and encoded in memory.

Rather than neat age-related stages (like [Piaget](#)), the modes of representation are integrated and only loosely sequential as they "translate" into each other.

Enactive (0 - 1 years)

This appears first. It involves encoding **action based information** and storing it in our memory. For example, in the form of movement as a **muscle memory**, a baby might remember the action of shaking a rattle.

The child represents past events through motor responses, i.e., an infant will "shake a rattle" which has just been removed or dropped, as if the movements themselves are expected to produce the accustomed sound. And this is not just limited to children.

Many adults can perform a variety of motor tasks (typing, sewing a shirt, operating a lawn mower) that they would find difficult to describe in iconic (picture) or symbolic (word) form.

Iconic (1 - 6 years)

This is where information is stored visually in the form of **images** (a mental picture in the mind's eye). For some, this is conscious; others say they don't experience it. This may explain why, when we are learning a new subject, it is often helpful to have diagrams or illustrations to accompany the verbal information.

Symbolic (7 years onwards)

This develops last. This is where information is stored in the form of a code or symbol, such as **language**. This is the most adaptable form of representation, for actions & images have a fixed relation to that which they represent. Dog is a symbolic representation of a single class.

Symbols are flexible in that they can be manipulated, ordered, classified etc., so the user isn't constrained by actions or images. In the symbolic stage, knowledge is stored primarily as words, mathematical symbols, or in other symbol systems.

Bruner's constructivist theory suggests it is effective when faced with new material to follow a progression from enactive to iconic to symbolic representation; this holds true even for adult learners. A true instructional designer, Bruner's work also suggests that a learner even of a very young age is capable of learning any material so long as the instruction is organized appropriately, in sharp contrast to the beliefs of Piaget and other stage theorists.

• **SOCIAL DEVELOPMENT THEORY**
(social cognition learning model)

• **Lev Vygotsky**

❖ Born in 1896 in Western Russia

❖ Died in Moscow in 1934

❖ Author of Thought and Language

A theory of how children learn...

• About Lev Vygotsky

• A pioneering psychologist

• Author

✓ 6 volumes from his Psychology of Art (1925) to Thought and Language [or Thinking and Speech] (1934).

✓ interests in the fields of developmental psychology, child development, and education.

✓ His innovative work in psychology includes several key concepts: psychological tools, mediation, internalization, and the zone of proximal development.

His work : The psychology of art, development of higher mental functions, philosophy of science and methodology of psychological research, the relation between learning and human development, concept formation, interrelation between language and thought development, the study of learning disabilities etc.

• The social cognition learning model asserts that culture is the prime determinant of individual development. Humans are the only species to have created culture, Therefore, a child's learning development is affected in ways large and small by the culture—including the culture of family environment.

Knowledge exists within culture

Language is the most important tool used to transmit knowledge

Language shapes thought

Language is used to recognize, examine, and solve problems

Members of a culture collaborate to share knowledge

Language is necessary for learning

Learning precedes cognitive development

Cognitive development is the capacity to learn and solve problems

- Learning Theory Applied to Children

Children learn through social interaction

with others more knowledgeable in three ways:

Observing and imitating

Receiving instruction and following directions

Working collaboratively within a group

- Zone of Proximal Development

The difference between what a child can do independently and what the child needs help from a more knowledgeable person to do.

- The zone of Proximal development (ZPD)

is the distance between a student's ability to perform a task under adult guidance and or with peer collaboration and the student's ability of solving the problems independently.

- Main emphasis on **culture**. (i.e. what to think and how to think).

- Emphasis on **social factors**. (surrounding culture, parents, peers etc.)

- **Language** is a primary form of interaction through which adults transmit to the child, the rich body of knowledge that exists in the culture.

- Every function in the child's cultural development appears twice. (First on the social level and later on the individual level)

- **The More Knowledgeable Other (MKO)** - refers to anyone who has a better understanding or a higher ability level than the learner with respect to a particular task process or concept.

Eg : a teacher, coach, parent or older adult, it could also be peers, a younger person or even computers.

-

Educational Implications:

- Social exposure to various cultures expands child's port of knowledge.
- **Scaffolding:** an instructor shows by example how to solve a problem, while controlling the learning environment so that students can take things step by step, expanding their base of knowledge without excessive frustration.
- **Reciprocal Learning:** A highly successful teaching method, reciprocal teaching provides an environment of open dialogue between student and teacher.
 - ❑ **Contextual factors** affects children's development. Contextual means how people deal with their environment.
 - ❑ **Curriculum**--Since children learn much through interaction, curricula should be designed to emphasize interaction between learners and learning tasks.
 - ❑ **Instruction**--With appropriate adult help, children can often perform tasks that they are incapable of completing on their own.
 - ❑ **Assessment**-- What children can do on their own is their level of **actual development** and what they can do with help is their level of **potential development**. Assessment methods must target both the level of actual development and the level of potential development.
- **SOCIAL LEARNING THEORY - BANDURA**
- "Social foundations of thought and action" in 1886
- Social learning theory
- Emphasis the impact of people on people.
- People learn from one another via observation, imitation & modeling.

- This is a cognitive theory that emphasis the role of vicarious experience in learning. (Observation of other people).
- Characteristics
- Changes in behavior through observation and imitation.
- Bandura believes that it is not always essential for children to have their own spontaneous action reinforced in order to acquire a new pattern of behavior.
- He suggests that both reinforcement and learning can occur in children when their behavior matches that of another person.
- Observational learning
- Bandura believes that more observation of another person can be sufficient to lead to a learnt response.
- His theory added a social element, arguing that people can learn new information and behaviors by watching other people.
- The model can be anything that conveys information such as a person, a film, T.V. a demonstration, a picture or instructions.
- Four processes
- Attention Process
- Retention Process
- Motor reproduction process (Behavioral Process)
- Motivational Process
- ATTENTION
- Without attention nothing will be retained.
- A person's sensory capabilities influence what can be attended to.
- An observer's selective attention can be influenced by past reinforcement.
- Characteristics of the models.
- Similarity with the observer (same age, sex etc)
- Respected model (whom the model respects)
- High status of the model.
- Model – thought
- Attractive
- Effective models.

RETENTIONAL PROCESS

- The ability to store information. remembering what you paid attention to.
- The model's behavior has to be encoded in memory. Only the observed behavior may be encoded or in addition an explanation of why, how, & when something is done is encoded.
- Encoding may be visual (i.e. mental pictures) and verbal (imaginable).
- MOTOR REPRODUCTION PROCESS (BEHAVIOURAL PROCESS)
- Once you have paid attention to the model and retained the information, it is time to actually perform the behavior you observed. Further practice of the learned behavior leads to improvement and skill advancement .
- Selecting and organizing the response elements.
- Refining the response on the basis of informative feedback.
- One may learn a great deal cognitively but be unable to translate that information into behavior for variety of reasons
- ✓ Lack of motor apparatus necessary to make a certain response, one maturational level, injury or illness.
- ✓ Lack of Skills
- ✓ Lack of strength

MOTIVATIONAL PROCESS

- The motivational value of reinforcement or punishment like the reinforcement theories.
- Reinforcement has 2 major functions creating expectations and acting as an incentive for translating learning into performance.
- Kinds of reinforcement
- **Direct reinforcement:** This occurs when an individual watches a model perform imitates the behavior and is reinforced (or punished) by the model or some other individual

- **Vicarious reinforcement:** The observer anticipates receiving a reward for behaving in a particular way, because someone else has been so rewarded.
- **Self Reinforcement:** The individual tries to meet personal standards and does not depend on or care about other's reactions.

Educational Implication

- Observational learning is vital for both development and survival. Because mistakes can produce costly.
- Acquisition of behavior is possible through vicarious reinforcement.
- Response inhibition: from seeing a model being punished for the response.
- Disinhibition: When a feared activity performed by the model is not punished.
- Facilitation: When by performing a response, the model simply increases the likelihood of the observe making a similar response.
- Creativity: Modeling can stimulate creativity by exposing observer to a variety of models.
- Educational Implication
- Modeling can influence observer's moral judgment and their emotional responses.
- Observing a wide variety of situations that have common rule or principle.
- Extracting the rule or principle from the diverse experiences.
- Utilizing the rule or principle in new situation.
- The basis of observationally derived rules, people learn among other things, judgmental orientations, linguistic styles, conceptual schemes, information processing strategies, cognition operations and standards of conduct.

Vygotsky - Social Development Theory

Lev Vygotsky was a Russian scientist. His theory of Social Cognitive Development is complementary to Bandura's Social Learning Theory. The social cognition learning model asserts that culture is the prime determinant of individual development. Humans are the only species to have created culture, and every human child develops in the context of a culture. Therefore, a child's learning development is affected in ways large and small by the culture--including the culture of family environment--in which he or she is enmeshed.

Major Thematic Thrust is:

1. Social Interaction plays an important role in the development of cognition. i.e. he felt that social learning precedes development.
2. Main emphasis on culture which affects/shapes cognitive development. (i.e. culture teaches the children both what to think and how to think).
3. Emphasis on social factors.
4. Equally more emphasis on the role of language in cognitive development.
5. According to Vygotsky, "every function in the child's cultural development appears twice First on the social level and later on the individual level, i.e. first between people (inter-psychological) then inside (intra-psychological).
6. The more knowledgeable other (MKO) - refers to anyone who has a better understanding or a higher ability level than the learner with respect to a particular task process or concept. The MKO is normally thought of as being a teacher, coach, parent or older adult, it could also be peers, a younger person or even computers.
7. The zone of Proximal development (ZPD) is the distance between a student's ability to perform a task under adult guidance and or with peer collaboration and the student's ability of solving the problems independently. According to Vygotsky learning occurs in this zone.

8. According to Vygotsky, language is a primary form of interaction through which adults transmit to the child, the rich body of knowledge that exists in the culture.

9. Interactions with surrounding culture and social agents such as parents and more competent peers contribute significantly to a child's intellectual development.

Educational Implications:

1. Social exposure to various cultures expands child's port of knowledge. The more experiences the child has, the richer the world becomes.

- Scaffolding : Scaffolding requires that an instructor shows by example how to solve a problem, while controlling the learning environment so that students can take things step by step, expanding their base of knowledge without excessive frustration.

- Reciprocal Learning: A highly successful teaching method, reciprocal teaching provides an environment of open dialogue between student and teacher.

- According to Vygotsky – Contextual factors affects children's development. Contextual means how people deal with their environment. It is ability to size up a situation change it or get out of it. Vygotsky believed that learning begins at birth and continues throughout all of life.

- *Curriculum*--Since children learn much through interaction, curricula should be designed to emphasize interaction between learners and learning tasks.

- *Instruction*--With appropriate adult help, children can often perform tasks that they are incapable of completing on their own. With this in mind, scaffolding--where the adult continually adjusts the level of his or her help in response to the child's level of performance--is an effective form of teaching. Scaffolding not only produces immediate results, but also instills the skills necessary for independent problem solving in the future.

- *Assessment*--Assessment methods must take into account the zone of proximal development. What children can do on their own is their level of actual development and what they can do with help is their level of potential

development. Two children might have the same level of actual development, but given the appropriate help from an adult, one might be able to solve many more problems than the other. Assessment methods must target both the level of actual development and the level of potential development.

Unit- III

Expanding Horizons of Learning

- **Learning for Transfer**

Definitions

The application of skills, knowledge, and/or attitudes that were learned in one situation to another learning situation (Perkins, 1992).

The ability to extend what has been learnt in one context to new contexts. (Brandsford, Brown and Cocking, 1999)

Transfer of learning occurs when the learner recognizes common features among concepts, skills, or principles; links the information in memory sees the value of utilizing what was learned in one situation in another.

(Extra information for teaching, not to be asked in the examination)

Why is Transfer of learning important?

Assumption of education: what is taught in a course will be used in relevant situations in other courses, in the workplace and out of school

Because the learning situation often differs from the context of application, the goal of training is *not* accomplished unless transfer occurs.

All new learning involves transfer based on previous learning .If there were no transfer, students would need to be taught *every* act that they would *ever* perform in *any* situation

Low Road (Substantive)Transfer

Similar stimulus conditions trigger well-developed semi-automatic responses .

Responses need not be mediated by mental representations.

Reflexive process which underlies near transfer.

Eg. Driving a truck when one knows how to drive a car.

High Road (Procedural)Transfer

Mindful abstraction from the context of learning , a deliberate search for connections.

Looks for patterns , principles, known data.

Not reflexive but mindful.

Demands time and mental exploration.

Accomplishes far transfer.

Eg. A chess player may apply basic strategies to investment practices or policies

Group Dynamics,

It has been commonly observed & also established through various experimental studies that there are differences in the behaviour of individuals when they are alone & when they are together with group ,behaves quite differently than what he would otherwise do. As a member of a group, he exhibits group behaviour. When two or more people come together it is known as Group. A Psychological group is one on which people come together to attain a common goal & the relations among the member are interdependent- each members behavior influences the behaviour of the others in the group.

According to Mill, “A unit composed of two or more persons who come together to achieve a specific purpose & consider a contact meaningful is a GROUP.”

Bass approached the definition of group in the angle of motivation & satisfaction of needs.

Bogurdas defines a group as, “A collection of two or more persons with common interest, stimulating each other having common loyalty & participating in to common activities.

Characteristics of Group – (LIC. COM)

1. Leadership: - According to Carter, a leader is a person who is able to lead the group towards the attainment of the goal. The teacher helps the students in the attainments of the goals. In that sense, the teacher is the leader of the classroom group.

2. Interdependency/ Common Interest: - The members of group have common and well defined goals, interest and ideals. Every member tries to attain the goals set down by the society (i.e. teachers & parents) e.g. members of rotary club have a common aim of social work for the benefit of underprivileged. The behavior of one member of a group influence that of the other and in this way his own behavior is influenced, this type of relationship is also known as psychological relationship.

3. Cohesiveness (Oneness): - There is the sense of oneness in the group because of the similarity in interest. A member looks upon other as related to him. In this way, good feelings, devotion, faithfulness, adjustment, suggestion & imitation are developed amongst the students.

4. Conformity (Comply by the rules set within the group): - The members of the group have to adhere the rules set by the group. The actions of members are controlled by the group. All the member of the group follow the ideals & traditional of the group.

5. Organized structure: - The class room has a group as an organized structure which is well defined .The class is homogeneous with respect to age, subject, etc.

6. Motivation/ Mutual Obligation: - The degree of motivation or the motivational level that exists among the members of the group should be the same. It is such a power as keeps not only the members of the group united but provides them with energy e.g. the relationship between the children & parents in the family or the love of husband & wife. In spite of differences, they have certain common aims, ideals & values. We-feeling is developed leading to the development of affinity in the group. Social values are also developed.

Meaning of Group Dynamics:

Group dynamics –Two things influence the group they are

i) Leadership ii) Group mind

The study of all these is called group dynamic.

It is a relatively new concept in socio – psychological field. Etymological meaning of Group Dynamics: - Dynamics is derived from a Greek word, which means **Force**. Group Dynamics stands for the forces operating in a group.

Goods dictionary –“Group Dynamics implies an interactive psychological relationship in which members of a group develop a common perception based on feeling and emotions. These inter- stimulative relationships may be described by the term Group Dynamics.”

Kreth & Crutch - Group Dynamics implies changes that take place within groups.

Cartwright & Zander – “Group Dynamics should be defined as a field of inquiry dedicated to advancing knowledge about the nature of groups, the laws of their development, and their inter relations with individuals, other groups and institutions.”

Process of Group Dynamics: -

- **Forming** - This is when a group first gets together. People tend to find out about each other, consider purposes, brainstorm ideas and possible structures for tasks and consider their own roles within the group. This is usually a very sociable time in the life of the group.
- **Storming** - As the group begins to settle in and individuals get to know each other, they may start competing for status and role in the group. Disagreements occur and where some members may try to assert strong opinions or leadership tactics, others may withdraw. If tensions are not mutually dealt with at this stage, they tend to disrupt group communication and activity, and most importantly, mutual respect for the roles of members. To reach stages (c) and (d) conflicts need to be resolved.
- **Norming** - After the more tense stage of storming, the group usually begins to settle as members have found a common approach to the task that all agree upon or accept (this is where unsettled conflicts can be problematic as they will probably reoccur later). Action plans begin to emerge and people find space to begin working on tasks.
- **Performing** - This is the stage when the group achieves optimum efficiency and work gets done. At this stage it is important to know the team work strategies you are working with (Sharples, 1999: 71) that will best utilize the expertise of each member. It is also useful be aware of time spent on each task through a log or diary, so that possible conflicts do not reoccur.
- **Mourning** - Having satisfactorily got through the group tasks, if the group has been successful in working together, despite initial tensions and conflicts, we often see members sad to leave each other. This is where mutual respect and achievement is felt most significantly. Future individual tasks may seem more mundane in comparison and in feedback it often comes through that this has been a very memorable task in comparison to others. Often sub-groups form from the larger groups to continue with personal or professional development interests.

Teacher should know about group dynamics – (the below points answers to why teacher should know about group dynamics and the same points can also be written for how can teacher develop group dynamics in the classroom)

S W I F T E A G L E

									Socializes individual
									Improves work efficiency

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_____	Identify Stars & isolates
_____	Friendship/co-operation
_____	Thinking processes development
_____	Reduces Enmity
_____	To know abilities of everyone
_____	Guidance/ Counseling
_____	Helps to set legitimate goals
_____	Encouragement

SOCIOMETRY

Sociometry is a quantitative method for measuring Social relationships. It was first developed by Psychotherapist Jacob Moreno. Etymologically, the word 'Sociometry' has originated from the Latin words

'Socio ' - meaning 'companion' and
'Metrum ' - meaning 'measure '.

The technique of Sociometry is very useful in the field of education in evaluating the personal- social adjustment of a pupil. Sociometry is concerned with how an individual is seen and accepted by his peers.

Sociometric techniques are often used by students while electing their monitor, choosing sides for a game etc.,

This technique is used often by the teachers, too. A teacher knows that the group of children with which she works is more than an aggregate of individuals. Each group has structure and that there are patterns of sub-groups, cliques and friendship. Some individuals are accepted by groups and some rejected.

The essential point is to devise a series of questions that will elicit true feelings about other members in his class.

e.g.: i) Whom would you like to sit next to you in the class?

ii) Who is your best friend?

iii) Whom would you like to play with?

Some Sociometric techniques are: Guess Who type, Sociomatrix, Social Distance Scale and Sociogram.

Uses of Sociometry:

Teacher can use Sociometry

- For organizing classroom groups
- To improve socio-emotional climate in the classroom
- To understand and improved the social structures of the classroom groups
- To help those who have been isolated become more acceptable to their peers.
- To study the effects of certain experiences on a group structure.
- To study the relationship between a group structure and factors like sex, religion, colour, age etc
- To study the stability of a group structure
- To reduce group conflicts by improving communication between pupils
- To form groups for projects or Activity clubs
- In seating arrangements in the class.

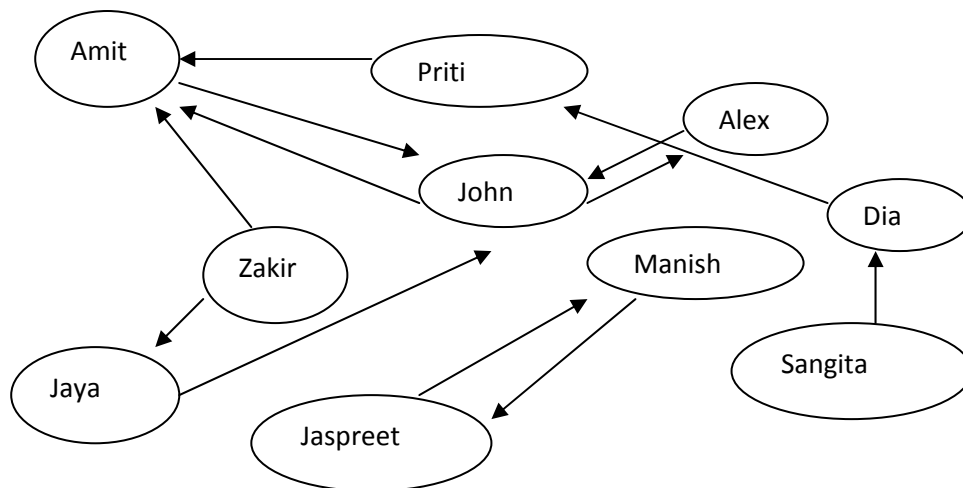
Advantages of Sociometry:

- It is a method which is **economical in both time and money**, to obtain information about personal – social adjustments of students.
- Using this method, early identification of children experiencing social rejection and peer neglect is possible .Such students can be made more acceptable to their peers
- This method helps the pupils to understand and build good peer relationships, thus helping the students in social adjustment of the pupils.
- The patterns of friendship and rejection play an important role in determining how the group reacts to learning situations, and to various types of group management which teachers might wish to use.

Understanding group structure is a step towards studying group dynamics, and understanding group dynamics is a means to better group management and curriculum development.

- This technique helps to maintain a healthy socio-emotional climate in the classroom and minimizes group conflicts.
- It helps to form productive teams and is used in developing groups for therapy and training.
- This method helps to identify leaders and hone leadership qualities.
- It is used to guide and counsel Leaders, Isolates and Rejects.

Sociogram: A Sociogram can be drawn to depict preferences of students. Identify the cliques, isolates, stars, rejects, mutual pairs in the group.



Activity No

Name of the activity: Use of Sociometry in the Classroom

Background: A Sociogram is a charting of the inter-relationships within a group. Its purpose is to discover group structure: i.e., the basic "network" of friendship patterns and sub-group organization. The relations of any one child to the group as a whole are another type of information which can be derived from a Sociogram. A Sociogram value to a teacher is in its potential for developing greater understanding of group behavior so that he/she may operate more wisely in group management and curriculum development.

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Procedure:

Observations: here include the tables or the Sociogram

Conclusions:

Implications:

1. Early identification of children likely to be experiencing social rejection and peer neglect is desirable
2. The patterns of friendship and rejection play an important role in determining how the group will react to learning situations, and to various types of group management techniques which teachers might wish to use. Understanding group structure is but a step toward studying group dynamics, and understanding group dynamics is a means to better group management and curriculum development.
3. To understand peer relationships
4. For a healthier socio emotional climate
5. To form teams that will be productive
6. To help social adjustment of students
7. To identify leaders and develop their qualities
8. To guide and counsel leaders, isolates and rejects

Unit 4

Teaching for All

LEARNING DISABILITIES

Dyslexia

- The word dyslexia originated from Greek language *Dys-poor or inadequate*, and *Lexis-words*.
- *Students with dyslexia* may have Difficulty with reading, spelling,

Understanding language to hear, or expressing themselves clearly when speaking or writing.

According to world federation of neurology

- “A disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence and socio-cultural opportunity. It is dependent up on fundamental cognitive disabilities which are frequently of constitutional origin.”

The hallmark of dyslexia is underachievement in writing and reading skills. Children are born with dyslexia. Dyslexia results from the differences in the structure and function of the brain.

Characteristics

- ❖ Problems with reading, accuracy, speed, and comprehension.
- ❖ Repeated spelling errors.
- ❖ Reversal of orientation of letters, e.g., b-d, w-m etc. and sequence of letters in words, when read or write.
- ❖ Errors in letter naming
- ❖ Difficulty in learning and remembering printed words
- ❖ Cramped or illegible handwriting
- ❖ Difficulty in finding write words while speaking
- ❖ Slow rate of writing.
- ❖ Confusion about directions in space or time(right and left, up and down,etc)

The following steps can be taken for helping dyslexics children,

- ❖ The teachers and the parents must be trained for diagnosing the dyslexics.
- ❖ Teachers must develop effective learning strategies for dyslexics.
- ❖ Those who are having persistent handwriting problems should be encouraged to join up their writings.

Dysgraphia

- Is a learning difficulty resulting from the difficulty in expressing thoughts in writing and graphing
- It can manifest itself as difficulties with spelling, poor handwriting and trouble putting thoughts on the paper.

Characteristics

- Poor writing skills
- Illegible writing
- Inconsistencies; mixtures of print and cursive, upper and lower case, irregular sizes shape or slant of letters.
- Unfinished words & letters
- Inconsistent position on page with respect to lines and margins and spaces between words and letters

Strategies

- Encourage students to outline their thoughts.

- Have students draw pictures of their thoughts.
- Have students dictate their ideas in to a tape recorder and then listen and write them down later.
- Practice keyboard skills.
- Have a computer available for them to organize information and check spelling
- Encourage students to talk aloud while writing.
- Give and allow students to begin projects early.

Dyscalculia

- Word comes from Greek and Latin '*counting badly*'
- *Suffers specific arithmetic disabilities as result of damage to specific regions of brain*
- *Can also occur developmentally as a genetically -linked learning disability.*
- *Affects person's ability to understand ,remember, and manipulate numbers and number facts*
- *Refer specifically to the inability to perform arithmetic operations.*
- *Occurs in people across the whole IQ range.*
- *Difficult to differentiate between integers and letters*
- *Confusion in reading '5' and 's' and '0' and 'o' etc.*

Strategies

- Help to identify his/her strengths and weaknesses.
- Parents, teachers and other educators work together to establish strategies.
- Help outside the classroom.
- Use graph papers
- Begin with concrete examples

GIFTED CHILDREN

Having Hurst

- "The talented or gifted child is one who shows consistently remarkable performance in any worthwhile line of Endeavour."

Characteristics

The gifted child is

- Is an exceptional child
- Is superior in some ability or group of abilities
- Exhibits superior performance in the area or areas of his giftedness.
- Need not necessarily possess a very high IQ.
- He learns rapidly and easily ,and retains it without much drill

- He knows about many things which most students are unaware.
- Has rich vocabulary marked by originality.
- Gifted is not only in academics but also in other spheres viz. Music, dance, drama, mechanical work, games, sports etc.

Needs of exceptional children

- Need for knowledge and understanding
- The need for the creativity and ingenuity
- Need for the development of his exceptional ability
- Need for self –actualization or self expression.

Education of the gifted children

- ❖ Separate schools
- ❖ Ability grouping
- ❖ Acceleration or double promotion
- ❖ Enrichment programmes

- **Unit 6: Learning Difference and Learning Needs of Diverse Learners**

a) Understanding social construction of disability, Gender and Marginalized Learners and their Educational needs

- b) Concept & Strategies of Differentiated Instructions

●

- c) Research Implication: studies in the area of gender and disability with reference to learning style and cognitive style and implication to teaching

Diverse learners include students from racially, ethnically, culturally, and linguistically diverse families and communities of lower socioeconomic status.

B) Concept & Strategies of Differentiated Instructions

- Differentiated instruction is the way in which a teacher anticipates and responds to a variety of student needs in the classroom.
- teachers differentiate by modifying the content (what is being taught), the process (how it is taught) and the product (how students demonstrate their learning).
- DI is an approach that takes its philosophy from the root of its name: different. Every classroom of 25 students has 25 different combinations of personality, interests, learning styles and background knowledge about that content area.

- A differentiated classroom would present students with choices in terms of how to learn a concept, how to practice that concept and how to show the teacher they know it.
- The planning is more time-consuming
- It meet the needs of all students.
- Strategies

Differentiate Through Teams

Heterogeneous grouping works, but sometimes homogenous grouping can be an effective way to differentiate

- Reflection and Goal Setting
- students should be reflecting on their work and setting goals for further learning.
- This is a great opportunity for them to set personalized learning goals and for teacher to target instruction specific to the goals they set.
- Interest groups
- Independent study
- Varied Questioning strategies
- Reading buddies
- Varied Home assignments
- Small group Instruction
- Each learner possesses a diverse set of cognitive, social and emotional assets, knowledge, skills, interests and preferences. These characteristics interact to form a unique learner profile that changes over time.
- Parents should have the knowledge to understand their child's unique learner profile and the tools to advocate for him/her.
- Education systems should define student success using accountability frameworks with multiple indicators of academic performance as well as measures of social and emotional wellbeing, persistence and engagement.
- MULTICULTURAL EDUCATION (MCE)
- Five Dimensions of MCE

- Implications of MCE in the Indian context
 - Five Dimensions of MCE
 - Dr. James Banks-
 - Content Integration
 - Knowledge construction
 - Equity pedagogy
 - Prejudice reduction
 Empowering school culture and social structure
 - Implications of MCE in the Indian context
 - Explain in brief the Indian context
- +
- Why MCE is important in the Indian context? Or Impact of Multiculturalism in the Indian context
 - Strategies which could be adopted
 - Develop ethnic and cultural literacy
 - Attitudes and value clarification
 - Develop Multicultural social competence
 - Promote educational equity

Module 3: Teaching: The Act and The Profession:

Unit 5: Teaching for Effective Learning:

Reflective Thinking:

- DEFINATION:
- "Active, persistent, and careful consideration of any belief or supposed form of knowledge, in the light of the grounds that support it and the further conclusion to which it tends"
- Dewey (1933)
- Reflective thinking is a series of logical rational steps based on the scientific method of defining, analyzing, and solving a problem.
- Educational Implications of reflective Thinking
- Being flexible.

- Providing well- planned activities.
- Creating situations which will trigger thinking.
- Using variety of teaching aids.
- Exhibiting Positive Attitude.
- Encourage students to critically think and analyze information rather than be passive recipients.
- New teaching techniques and methodology.
- Ask open ended questions.
- Discussions, brainstorming sessions
- Democratic environment.
- Encourage students to experience new things and to express their feelings about it.

CRITICAL THINKING

- “Critical thinking is deciding rationally what to or what not to believe.” Norris
- “Critical thinking is careful and deliberate determination of whether to accept, reject, or suspend judgment.” Moore and Parker
- CRITICAL THINKING SKILLS
- Identifying value statements
- Identifying points of view
- Determining bias
- Identifying fact and opinion
- Educational implications critical thinking
- The teachers should develop willingness amongst the students to change one point of view as they continue to examine and re-examine ideas that may seem obvious.
- Students should be involved in games
- Stimulate their imagination using images, half-told stories, snippets of movies or TV shows, post-discussion of the entire story, movie or show, a common hands-on activity or demonstration, or a statement of a controversial issue or challenge.

CREATIVITY:

Creativity implies the production of a 'totally or Partially 'novel identity.

Creativity is the power of the human Mind to create new contents by Transforming relations and thereby Generating new correlates thus, we can describe creativity as the capacity or ability of an individual to create , discover or produce a new or novel idea or object ,including the rearrangement or reshaping of what is already known to him which proves to be a unique personal experience.

- Creativity
- Is universal
- Is innate as well as acquired
- Produces something new or novel
- Is adventurous and open thinking
- Is a means as well as end in itself
- Carries ego involvement
- Rests more on divergent thinking than on convergent thinking.
- Has a wide scope.
- Cannot be separated from intelligence
- Not related with school achievement
- Creativity and anxiety often go together.
- ***Characteristics of creative children***
- Careless and indifferent
- Bored in common situations and on routine tasks.
- Ill-motivated and unexcited
- Self-centred and non-accomodative
- Often introvertish and even rebellious
- Independent and wanting to do things differently
- Ready to take risks

- Generate uncommon ideas and situations, things of rare quality and beauty.

Wallas(1926)described creativity involves four different stages.

preparation	incubation
inspiration	verification

- Conscious work on the problem is initiated and continued.
- The problem is defined or analysed and the stage is set for its solution.
- Facts and materials relevant to the solution are collected and examined.
- Plan of action is formulated.
- Start working to the set plan.
- Deliberate or voluntary turning away from the problem.
- Characterised by the absence of activity.
- May rest, sleep or engage in other interesting activities.
- In the absence of any interference our unconscious begin to work towards the solution of the problem.
- The things we experience or learn in the meantime may provide a clue to the solution.

The thinker is often presented with a sudden appearance of the solution.

Illumination may occur at any time.

- During this stage the illumination is checked out to determine whether the solution or idea which appeared through insight is correct.
- Fresh attempts are even made to solve the problem .
- Or earlier solution needs slight modification to become workable.
- Freedom to respond.
- Opportunity for ego involvement.
- Encouraging originality and flexibility.
- Removal of hesitation and fear.

- Providing appropriate. opportunities and atmosphere for creative expression.
- Developing healthy habits among children.
- Using creative resources of the community.
- Avoidance of blocks to creative thinking.
- Proper organisation of the curriculum.
- Reform in the evaluation system.
- Use of special techniques for fostering creativity.
- Teaching by example.

Problem Solving refers to the mental process that people go through to discover, analyse and solve problems.

- FACTORS

Functional Fixedness

Irrelevant or Misleading Information

Assumptions

Mental Set

- STEPS

1. Define the problem

2. Analyse the problem

3. Identify as many potential solutions as you can

4. Choose the best solution

5. Plan of action

6. Implement the solution –

- STRATEGIES

- [Analogy](#)

- [Brainstorming](#)
- [Divide and conquer](#)
- [Hypothesis testing](#)
- [Lateral thinking](#)
- [Research](#)
- [Trial-and-error](#)
- Meta-cognition:
- Meaning- Definition and analysis of definition
- Components &
- Strategies
- Meaning- two definitions and its meaning
- Components
- Three components

“Critical thinking is deciding rationally what to or what not to believe.”

Norris, Stephen P

“Critical thinking is careful and deliberate determination of whether to accept, reject, or suspend judgment.” Moore and Parker

“The process of determining the authenticity, accuracy and worth of information or knowledge claims.” Beyer

"Broadly speaking, critical thinking is concerned with reason, intellectual honesty, and open-mindedness, as opposed too emotionalism, intellectual laziness, and closed-mindedness.”

Thus, critical thinking involves:

- following evidence where it leads;
- considering all possibilities;
- relying on reason rather than emotion;
- being precise;
- Considering a variety of possible viewpoints and explanations;
- weighing the effects of motives and biases;

- being concerned more with finding the truth than with being right;
- not rejecting unpopular views out of hand;
- Being aware of one's own prejudices and biases, and not allowing them to sway one's judgment.

Critical thinkers: distinguish between fact and opinion; ask questions; make detailed observations; uncover assumptions and define their terms; and make assertions based on sound logic and solid evidence.

Uses of critical thinking:

- ✓ "underlies reading, writing, speaking, and listening . . . the basic elements of communication"
- ✓ "Plays an important part in social change . . . institutions in any society - courts, governments, schools, businesses - are the products of a certain way of thinking."
- ✓ "Helps us uncover bias and prejudice."
- ✓ "Is a path to freedom from half-truths and deceptions?"
- ✓ "The willingness to change one point of view as we continue to examine and re-examine ideas that may seem obvious. Such thinking takes time and the willingness to say three subversive words: *I don't know.*"

Attributes of a critical thinker:

- ✓ asks pertinent questions
- ✓ assesses statements and arguments
- ✓ is able to admit a lack of understanding or information
- ✓ has a sense of curiosity
- ✓ is interested in finding new solutions
- ✓ is able to clearly define a set of criteria for analyzing ideas
- ✓ is willing to examine beliefs, assumptions, and opinions and weigh them against facts
- ✓ listens carefully to others and is able to give feedback
- ✓ sees that critical thinking is a lifelong process of self-assessment
- ✓ suspends judgment until all facts have been gathered and considered
- ✓ looks for evidence to support assumption and beliefs
- ✓ is able to adjust opinions when new facts are found

- ✓ looks for proof
- ✓ examines problems closely
- ✓ Is able to reject information that is incorrect or irrelevant.

Reflective thinking

Dewey's definition of reflective thinking:

"Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends".

Explanation: Reflective thinking is normally a slow process. It takes considerable

time to work on inferring and combining. BUT by reflecting upon what we have learnt:

- We will remember it far better.

This is higher form of thinking.

- ❖ It aims at solving complex problems.
 - ❖ It requires reorganization of all the relevant experiences and the finding of new ways of reacting to a situation or of removing an obstacle instead of a simple association of experiences or ideas.
 - ❖ There is insightful cognitive approach in reflective thinking.
 - ❖ It takes all the relevant facts arranged in a logical order into account in order to arrive at a solution of the problem in hand.
 - ❖ It links the information we possess into tighter network, thus helps to remember the matter better.
 - ❖ It criticizes what one has learned and tries to expose weaknesses and shortcomings.
- *Metacognitive knowledge* (also called Metacognitive awareness) is what individuals know about themselves and others as cognitive processors.

- *Metacognitive regulation* is the regulation of cognition and learning experiences through a set of activities that help people control their learning.
- *Metacognitive experiences* are those experiences that have something to do with the current, on-going cognitive endeavor.
- Strategies like:
 - Self Questioning
 - KWL Strategy – Know- Want to know – Learn (Outcome)
 - PQ4R – Preview, Question, Read, Reflect, Recite and Review.
 - IDEAL – Identify, Define, Explore, Act, Look

Unit
Teaching As a Profession

Six

- **Professionalism: Concept & Principles; and Importance of Academic Freedom**
- Concept of Professionalism
- Wise: Professional teachers are those who have a firm grasp of the subjects they teach, and are true to the demands of their profession.
- Socratic: Professionalism in teaching means possessing a good character, being committed to change and continual improvement, having thorough subject and pedagogical knowledge and nurturing the responsibility to collaborate with students, parents, administrators and peers even beyond the classroom.
- Professionalism in teaching involves....
- Acting with integrity both in and out of the classroom
- Understanding and executing one's responsibilities wrt subject matter, students, and community
- engaging in behaviours that support learning, facilitate open communication within in the classroom

- Being proactive
 - Demonstrating respect for students, parents, authority and peers
 - Professionalism in teaching involves....
 - Accepting the strengths and weaknesses of the students and colleagues
 - Helping them to build strengths and deal with their weaknesses
 - Working towards quality assurance
 - Adhering to the code of ethics
 - Principles of Professionalism w.r.t teaching
1. Promoting the development of all students by
 - Respecting their identity and culture
 - Recognizing their strengths as well as individual needs
 - Catering to their individual learning styles
 - Providing opportunities for all to excel to the best of their capacity
 - Principles of Professionalism
 2. Delivering the most appropriate instruction to students by
 - Arranging differentiated instruction for different learners
 - Helping students set and achieve appropriate goals
 - Being aware of best practices in ones area
 - Principles of Professionalism w.r.t teaching
 3. Accepting responsibility for professional growth by
 - Being committed to life long learning
 - Undertaking research
 - incorporating reflective practices
 - Updating one's knowledge and skills wrt both content and pedagogic practices
 - Being an active participant in professional bodies
 - Principles of Professionalism w.r.t teaching
 4. Upholding personal and professional ethics by
 - Being a responsible and ethical citizen in school and community

- Protecting and empowering all students
 - Following the code of conduct prescribed by the authorities and administration
 - Maintaining the dignity of the teaching profession
 - Principles of Professionalism
5. Committing oneself to maintaining high standards of professional performance by
- Accepting responsibility for what happens in the classroom
 - Initiating teamwork with peers and parents
 - indulging in self reflection and self improvement
 - Principles of Professionalism
6. Contributing to nation building by
- Owning responsibility towards society and work to build a better world
 - Addressing the needs of society through education
 - Empowering students to be responsible citizens
 - displaying commitment to justice and a zeal for social reconstruction
 - **Academic Freedom**

Meaning:

- Academic freedom is the freedom to teach and do research in any area without constraint, to discover and propagate new ideas no matter how controversial
- Socrates and Galileo did not have this kind of freedom.
- A teacher from a West African country was dismissed when his research found that the infant mortality in his country was much more than the figures projected by the Government.
- One of the earliest initiatives to protect academic freedom was the International Conference convened by UNESCO in 1950, in Nice, where the universities of the world articulated three interdependent principles for which every university should stand.
- the right to pursue knowledge for its own sake and to follow wherever the search for truth may lead;
- the tolerance of divergent opinion and freedom from political interference; and

- the obligation as social institutions to promote, through teaching and research, the principles of freedom and justice, of human dignity and solidarity, and to develop mutually, material and moral aid on an international level.
- January 2005, Report of First Global Colloquium of University Presidents Columbia University, New York says
- Academic freedom benefits society in two fundamental ways. It benefits society directly, and usually immediately, through the impacts and benefits of applied knowledge, the training of skilled professionals, and the education of future leaders and citizens.
- It benefits society indirectly and usually over longer periods of time, through the creation, preservation, and transmission of knowledge and understanding for its own sake, irrespective of immediate applications.
- Importance of academic freedom
- It appeals to a higher value, the pursuit of truth . (Copernicus said the earth moves round the Sun. He was opposed by the Church which wielded much power at that time)
- Academic freedom is necessary to benefit human welfare which depends on the discovery and propagation of new knowledge.
- Academic freedom helps faculty in addressing their academic subjects, allowing them even to challenge conventional wisdom.
- Need for academic freedom
- Promotes knowledge construction through research
- Builds a fearless , just and equitable society
- Knowledge is preserved and transmitted
- With reference to India, Academic freedom is central to the future of India's higher education system in its efforts to develop a knowledge economy based on the need for promoting intellectual capital and to develop institutions of excellence comparable to the best anywhere in the world.
- A word of caution when we speak about academic freedom....
- Academic freedom should not be an obstacle in the way of one's basic duty as teachers. Eg: pursue research but also perform your other academic duties

- Teachers are entitled to freedom in the classroom in discussing their subject, but they should be careful not to introduce into their teaching controversial matter which has no relation to their subject
- **Evolving Roles of Teacher as: Instructional Expert, Manager, Counselor and ‘Practitioner-Researcher’**
- Roles of a teacher need to ‘evolve’ and gear to the changing times and the changing needs of society
- **Teacher as an instructional expert**
- Content expert
- Knowledge of pedagogic practices
- Designer of effective learning experiences
- Sound knowledge of learner psychology
- Effective evaluator
- Techno savvy
- Curriculum designer
- **Teacher as a manager**
- Build a positive learning environment
- Teacher is an environmental engineer who organizes the classroom space to fit goals and maximize learning
- Manager of human and material resources
- Manage and process records of marks, attendance etc
- Manage curricular and co curricular activities
- **Teacher as a counselor**
- Counsel regarding academic and personal issues
- Empower the individual to solve his/her own problems
- Guide regarding aspirations, choices, habits
- Provide vocational guidance
- Equips learners with life skills needed to handle one’s own life
- Teacher as a practitioner-researcher

**Professional Competencies for Classroom Management:
Prevention, Intervention & Remediation**

- Prevention: (Establishing & Maintaining Effective Learning Environment)
- teachers must clearly communicate what they expect of students,
- personally exemplify those expectations,
- consistently hold students accountable to meet them.
- Set clear and concrete rules. Have mature students prepare their own rules
- Make all arrangements in advance if planning an activity
- Try to connect pupils' needs, interests expectations with learning
- Plan in detail with back up plans for emergencies
- Anticipate problems and take preventive steps
- Offer limited choices
- Avoid triggers that can lead to misbehavior eg: long and boring work, crowds, unnecessary delays
- Interact with the whole class not just a few
- Prevention: (Establishing & Maintaining Effective Learning Environment)
- Intervention: (Rules and Consequences ,Stopping Misbehaviour, the Need to Stop & Train)
- Keep students engaged... boredom can lead to misbehaviour
- Use positive I-messages (eg: I like the way Sneha is doing her work quietly. I like the way Rajesh is helping his friend. I like the way Manish is listening attentively. Avoid statements 'Madhu don't disturb')
- After the rules have been established, prompts/ instructions should be used as reminders when children do not follow them right away. (Eg: Raise your hand before speaking.) Avoid long 'speeches'.
- Intervention: (Rules and Consequences , Stopping Misbehaviour, the Need to Stop & Train)

Two approaches to stop misbehaviour: (a)Rules-Ignore-Praise (Set rules, ignore misbehaviour, praise the right behaviour) good for younger students who are still learning rules . (b)Rules-Reinforce-Punish (set rules, reinforce good behaviour, but punish wrong behaviour) effective for older students . Remember punishment should not be insulting or harmful.

The need to stop and train: when a student misbehaves use the situation as a teachable moment. Stop the student and use the situation to train him/her without any disrespect to the student.

- Remediation:(Developing Student Responsibility & Self-Control, Remediating chronic Behavioural Problems, Gordon Model of Self-discipline)
- Be firm, communicate expectations but at the same time demonstrate support and caring
- Try positive behaviour modification strategies. Avoid punishment ...try alternatives such as temporarily taking away privileges.
- Chronic problems may need intensive measures and intervention of specialists and parents.
- Some students who frequently misbehave do not believe that they can ever do anything right. Experts suggest that such students need to be trained to develop self control and accept responsibility for showing positive behaviour. Eg: making a naughty student the class monitor will help the student become responsible. Gordon's Model of self Discipline is a model that demonstrates how to help errant students develop- responsibility and self control
- Gordon's Model of Self Discipline
 - Avoid over emphasis on rewards to discipline as they are counterproductive. Students get concerned with reward rather than good behaviour. once the reward is removed, they return to original behaviour. Students used to rewards feel that they are punished if they do not receive the rewards.
 - Punishments do not work as they make students hostile .
 - Classroom discipline is achieved by aiding students in acquiring an inner sense of self-control
 - To develop student self-control, teachers must give up their power (controlling) authority and replace it with influence or persuasive authority.
 - Gordon believed in six elements of classroom discipline
- 1. Influence rather than control:
 - Controlling activates student's coping mechanisms (fight, flight, and submitting) and cuts off communication
 - Using non-controlling mechanisms do not cut off communication and student cooperation.

- Gordon believed in six elements of classroom discipline

2. Preventive Skills

- Use preventive I-messages- to influence students' future actions.
- Collaborative rule setting- students and teachers work together to decide how to conduct themselves and come up with classroom rules
- Participatory classroom management- teachers share power with students in making decisions. (classroom arrangement, rules, activities, seating, etc.)
- Gordon believed in six elements of classroom discipline

3. Decide who owns the problem

The individual who is effected by the problem is the one who “owns the problem” making it their job to handle the confrontation.

4. Confrontive skills

Modifying the environment by enriching the place and eliminating distracters.

Send I-messages regularly

Shifting gears (changing from a confrontive position to a listening position if the student gets hostile)

- Gordon believed in six elements of classroom discipline

5. Use helping skills

- Passive listening: the teacher shows he/she is listening by verbal cues, but is mostly silent
- Door openers: invite students to discuss their problems
- Active listening: the teacher mirrors back what the students says

- Gordon believed in six elements of classroom discipline

6. Avoid communication roadblocks such as shouting, preaching, advising, name calling, criticising, analysing child's behaviour, comparing, threatening etc .

Significance of Gordon's Model:

- Respect for individual
- Enhances person's self esteem

- Suggests preventive skills to avoid misbehaviour. Hence very proactive model
- Emphasis on developing self-control
- Discipline becomes the student's responsibility