MES-052
PSYCHOLOGY OF LEARNING AND TEACHING
ACHIEVEMENT MOTIVATION

Schooling is a deliberate process for making good citizens, who can not only pull their full economic weight but as well should contribute for the well being of the society. It is possible, when the child/person excels in her/his possessed potential. Its culmination comes through achievement of the individuals. How to motivate children in learning of school subjects forms a chief concern of the teacher ? Fundamentally, this question looks for what Prof. Shulman calls pedagogic content-knowledge that is bound-up with the specific subject teaching. Discussion about of different subject teaching shall not be a target here. Therefore, it its absence, then, it is desirable to talk of general pedagogics that shall save children from being bored about their learning.

Murray (1938) had defined achievement motivation as the need for success, for doing better than others, and for mastering challenging tasks. Achievement orientation begins to develop in the home itself. Parental interactions support independence and reward for it (Harold and Eccles, 1990). Authoritarian parents act as models of competence/ need-achievement for their children's motivation (Baumrind, 1971). According to Atkinson (1952,1964), high n-achievers are independent in action and thought. However, person's expectancies of success and failure govern their achieving characteristics (McClelland et al., 1953). It has been observed, success-oriented persons set goal attainment of moderate difficulty only (50% success)(Atkinson and Litwin, 1960). On this basis, Atkinson has recommended that the fear of failure must be taken into account in arranging learning experiences. Glaser (1969,1970) has gone ahead in telling us that people to succeed at life in general, must first experience success. For children it is the school that should provide it.Psychometricians had long back advised teachers to pitch their test-items around 50% difficulty level, because, it also maximizes the discrimination index to 2,500 level. Disadvantaged students would need little more easy items. Likewise academically superior students would need to achieve little higher, hence, they feel comfortable with more difficult items. This condition shall maintain need to achieve at the ability level (below, average, and above).

Although it has been evidenced that the students achieve well, when the teacher clarifies instructional goals before the start of the unit yet, as the taxonomic level of the items moves beyond knowledge upwards the achievement of the students starts becoming positively skewed. This is due to the psychological characteristic of the items that hinge with comprehension through evaluation categories. Bloom et al (1984) have analyzed teacher-made taxonony-based items. In general, teachers fail to write higher-order items in their subject areas. In another study, it was found that 80% of the questions asked by the teachers were of facts and knowledge type only.

Teachers are advised to prepare a folder of test items on the basis of difficulty index, level of taxonomy and unit categorization. Boards of education should as well provide empirically authenticated test-items in each subject area for the use of the teacher. During teachers training empirically supported test-items should be used. This reduces taxonomic spurious character of the teacher-written test-items. This simple action would empower school teachers to teach/ evaluate their students better. This should as well better achievement of the students. Task analysis (Gagne, 1965,1968); transfer of learning (Bruner, 1964;Gagne, 1965) especially the lateral and vertical ones, and concept mapping by the students are some other ways through which school students' achievement can be bettered. For better cognitive learning, emotional climate also seems necessary. Therefore, how need-affiliation might prove useful is described below:

Very young children of preschool age (3 + to 6 +) and school entrants especially need care by the teachers, because, they feel alineated from their mother/ home conditions. This is as well true for emotionally disturbed and educable children. Children between 4 to 9 years of age make friends to serving need, a friend is someone who 'does what I want'. During elementary/ secondary grades it becomes out going and reciprocal in character. Friends are seen as people who 'do things for each other' (Selman, 1980). In general, children up to primary school education seek approval from their teachers in doing things. To meet this affective developmental characteristics of children up to late childhood period, many cultures hire female teachers to accomplish this goal. But it does not mean absence of the male teachers in these school. Doing so would miss father-figure from the children's personality development. It is essential for proper sex-typing among children. Therefore, a good school maintains a balance between either gender category of the teachers, who shall be responsible for children's schooling and learning processes.

Discuss the concept of META COGNITION.

The notion of metacognition was proposed by John Flavell (1976). He is a developmental psychologist who has produced excellent work on Piagets theory. Metacognition deals with knowledge of how individuals think. It is related with how of information processing. Research studies have shown that younger and old children reflect differences in how of their learning, (Kail, 1984). These studies show that six-year-olds are aware that familiar items are easier to remember than unfamiliar ones. Nine-year-old children are aware that the amount of retrieved information is limited. It means children up to third grade usually overestimate how much they can store and retrieve information. Most second-graders are aware that interest, familiarity, and story length influence comprehension and recall. However, they were not aware of the effect of sequencing, introduction/ summary qualities and the relationships between reading goals and tactics. On the contrary, sixth-graders showed awareness about these things. Researches show children's metacognitive awareness about reading positively influences their performance on a variety of reading tasks.

Most of the young children do not show awareness about the role of their own capabilities play in learning. Some middle and senior grade students had been seen looking into their notes/ text books after the day's examination is over. This reflects their metacognitive awareness in completing an academic task. Notes taking and making are highly personal processes. Their periodic reviewing enhances comprehensibility and recalling capacity associated with the course-content learning. It has been argued that notes taking/making process be encouraged among the students especially the senior ones, who have to face the public examinations and selection tests. In general, awareness how to become strategic learner should prove useful. Hence, it is explained, so that students' motivation can be increased in bettering their achievements.

It has been remarked that most children and adults are inefficient. They generally do not attempt at encoding and rarely go beyond rote rehearsal; lack organizational tactics; and various cuing devices underlying/ highlighting. Changed nature of learning task does not bother them how to go about encoding new things. Our educational system also emphasizes only rote learning instead of making students aware how to learn. Rote learning is not a very effective memory tactic, therefore, allow students to use Mnemonic devices. They work well, because, they increase encodability and retrievability of the information. These devices not only motivate students in general and low-achieving students in particular, because, these devices provide.

- A *context* (such as acronyms, sentences and mental acts) in which unrelated items can be organized
- the *meaningfulness* of the newly learnt material is increased through making associations betweenthe old/ familiar with new information (memory pegs, etc); and
- they provide distinctive retrieval cues.

All these things involve active participation in the learning process (Morris, 1977). Since school learning is chiefly concerned with answering of written test-questions, self-questioning can be a valuable learning tactic by the students. Disadvantaged students be helped to coin questions that need answering at comprehension level and some application questions, because, by and large, they restrict themselves to fact/ knowledge type of questions. Average and above average students can escalate their thought process to application level easily. They need encouragement to go up to analysis level questions. Academically superior students can easily produce application and analysis type of questions. For them, therefore, target should be synthesis/ evaluation levels of questions.

WHAT ARE THE IMPLICATIONS OF EARLY CHILDHOOD STAGE FOR DESIGNING TEACHING LEARNING PROCESS ?

In the foregoing units you have learnt the characteristics of childhood and adolescence. From educational point of view it is also significant to understand the characteristics of infancy and early childhood since it forms the foundation of development for the whole life. Prior to early childhood stage the baby-passes through infancy stage (0-3 yrs. of age). Infancy is the period of utter helplessness or complete dependence where the baby is totally dependent upon mother. Even though a newborn baby is equipped with all sense organs, they may not function properly. It takes time for the baby to adjust and adapt to the new environment. The baby grows and develops enormously within a year of birth. Stimulating toys are necessary for developing the emerging sensory modalities of babies. Cognitively, at the sensorimotor *stage* (0-2 yrs) a baby manipulates a variety of materials in the environment and acquires a working knowledge, which is known as *internalized action.* Adequate stimulation is essential for this cognitive growth.

During the early childhood stage (3-6 yrs.) the child gradually develops use of language and ability to think in symbolic form, is able to think operations in one direction but he/she has difficulties seeing another person's point of view. For teaching children at early childhood stage the teacher has to use concrete materials/visual aids, use shapes on a board to demonstrate and discuss concept such as *'part' 'whole '*or *'one-half.* Let children add and subtract with sticks, rocks, or coloured chips. Instructions should be made relatively short, using actions as well as words. Explain a game by acting out of the parts. Show students what their finished papers should look like. Use an over-head projector or display examples where students can see them easily.

Students cannot be expected to be consistent in their ability to see the world from someone else's point of view due to their egocentrism at this stage. Therefore social studies lessons should not be too far removed from the child's experience, long lectures are to be avoided, rules should be clear for sharing or use of materials avoiding long explanations.

The teacher has to be sensitive to the possibility that students may have different meanings for the same word or different words for the same meaning. Students may also expect every one to understand words they have invented. It is better to ask children to explain the meanings of their invented words. Students are to be given a great deal of hands-on practice with the skills that serve as building blocks for more complex skills such a reading comprehension. They may be provided cut-out letters to build words; supplement paper-and-pencil tasks in arithmetic with activities that require measuring and simple calculations-building a display area for class work, dividing a batch of popcorn equally. Thus children are to be provided with a wide range of experiences in order to build a foundation for concept learning and language. They should be taken to field trips, to zoo, gardens, theaters, and concerts. Story tellers may be invited to the class. Students may be given words to describe what they are doing, hearing, seeing, touching, tasting, and smelling. Pictorials of students engaged in different kinds of plays/ learning activities need to incorporate. Encouraging initiative in pre-school children (at early childhood)

The teacher should encourage children to make and to act on choices. Children should be provided free choice time to select an activity or game. Their suggestions, choices or ideas should be incorporated into on-going activities. It should be assured that each child has a chance to experience success. New games and skills are to be introduced in small steps. Competitive games are to be avoided because children differ in their abilities. The teacher should encourage make-believe with a wide variety of roles. For example the teacher should have costumes and props that go along with stories the children enjoy; encourage the children to act out the stories or make up new adventures for favourite characters; and monitor the children's play to be sure no one monopolizes any character. The teacher has to be tolerant of accidents and mistakes, especially when children are attempting to do something on their own. If mistakes are made, students should be shown how to redo.

To encourage industry, the teacher should make sure that students have opportunities to set and work toward realistic goals by beginning with short assignments, monitoring student progress, and writing down goals. Students should be given a chance to show their independence; and provided support who seem discouraged.

WHAT ARE THE IMPLICATIONS OF LATER CHILDHOOD STAGE FOR DESIGNING TEACHING LEARNING PROCESS ?

At the later childhood stage (6-12 yrs.) children i.e., of class I/II to VI/VII level schooling are able to solve concrete (hand-on) problems in logical fashion. They can understand laws of conservation and are able to classify, seriate, and reverse. With these abilities to handle operations they develop a complete and very logical system of thinking. The teacher should use concrete props and visual aids, especially when dealing with sophisticated materials, for example, use of three dimensional models, and diagrams to illustrate hierarchical relationships etc. Students should be given opportunities to manipulate and test objects and experiment. The teacher should make sure presentations and readings brief and well organized assign stories or books with short, logical chapters, moving to longer reading assignments only when students are ready break up a presentation with a chance to practice the first steps before introducing the next. He/she has to use familiar examples to explain complex ideas, for example, compare students' lives with the lives of characters in a story teach the concept of area by having students measure two rooms in the school that are of different size.

Although children at primary school stage have made important developmental strides, their thinking is till tied to available experiences. In working with concrete operational learners (7 to 11 years age group), the challenge for teachers is to structure learning activities that provide a concrete foundation for their thinking. Teachers of elementary students can facilitate effective learning by using concrete materials that allow students to see abstract concepts and operations in action. As students perform these operations with the concrete materials, they begin to understand the abstract process that lay the foundation for more advanced thinking.

It is a mistake to believe that if students are using manipulations, then learning is taking place. This is not always the case however (Ball, 1992). Unless links between manipulative and symbols are specially made students are left uncertain about these connections and may even see the use of manipulative and the use of symbols as two different lemons. Students don't automatically form links between concrete materials and the abstract numerals (Ball, 1992). Questioning leads students to think about the relationship between the objects and the numerals. This process is difficult for students, but it is critical if they are to understand the connection between abstractions and their experiences. If this link is missing, learning will be incomplete, with manipulative and numerals remaining unrelated in students' minds.

Since sufficient abstract reasoning is not developed at childhood stage, enough opportunities are to be given to students to solve problems of concrete nature. More realistic concept of daily life may be given for better intellectual development. Teachers have to avoid inconsistency in their behaviour to maintain their effective image. Games and exercises taken by students should be under proper guidance at this stage to save them from any harm to their health. Since the concepts of time, space, weight, length etc., are crude, teachers should provide learning experience which will help children to develop these concepts. Practical training regarding length, weight, and volume etc., be demonstrated and students should be asked to practice to develop these concepts.

Opportunities are to be provided to children to express themselves through singing, creative activities and play. Play helps the child to assimilate objects and activities for pleasure and learning. Imitation involves a deliberate attempt on the part of the child to accommodate himself to new objects and activities. During early childhood, due to the emergence of lucid symbolism with great deal of symbolic representation children begin to invent a variety of make-believe games. Studies have shown that children brought up in an enriched environment surrounded by adults and children who affectionately play with them are found to show superior cognitive, emotional, physical and social

development to those brought up in poor environment. Parents and teachers are to be educated in this regard.

At pre-conceptual stage, activity forms the basis for the child's thinking and this is to be ensured through suitable play materials and opportunities to play. There may be two categories of material at this stage: (i) materials that provide creative, constructive, and experimental plays; and (ii) materials which promote symbolic or imaginative play. Besides these materials, children need individual attention. Ways and means of ensuring this have to be explored.

As the child grows, equipments to practice skills and to acquire new skills are to be provided. Students need to be exposed to games and activities to develop new concepts and skills. At the concrete operational period (later childhood) opportunities should be provided to use concepts and skills acquired by them. The play materials should have the potential of child's physical and mental development. Educational games and play way exercises should be happily blended in teaching different school subjects. Projects and group activities with play spirit may be introduced. It is important to remember that play materials should be graded and selected carefully to suit the child's level of development.

Childhood is the stage when children are to be trained for good habits and development of virtues. For language development, the environmental stimuli and examples are the most effective tools. Story telling is very significant for development of imagination in children. Their spontaneous self activities are to be promoted. Sufficient opportunities are to be provided for gardening, creative work, and to interact with nature. For their social development, sufficient opportunity is to be provided for group games and group activities. For character development, emotional training can be provided through loving, affectionate caring and religious stories and precepts.

Students are to be provided safe areas for physical as well as social exploration so that they can practice being autonomous but the teacher has to make sure that children cannot hurt themselves in these areas. Children should not be punished in situations where they could not have possible foreseen consequences. For the development of emotional competence a climate of trust is to be created in the classroom. Students should be helped to recognize and express their feelings by providing vocabulary of emotions and noting descriptions of emotions in characters and stories.

WHAT ARE THE IMPLICATIONS OF ADOLESCENCE STAGE FOR DESIGNING TEACHING LEARNING PROCESS ?

At Adolescence, students are able to solve abstract problems in logical fashion. They become more scientific in thinking and develop concerns about social issues. They have *identity versus* **role confusion** and establish love relationship. Their personal, social, sexual and occupational identity comes from success in school and experimentation with different roles. For **helping** students to use formal operations at adolescent period the teacher should continue to use concrete-operational teaching strategies and materials - by using visual aids such as charts and illustrations as well as somewhat more sophisticated graphs and diagrams. Comparison can be made between experiences of characters in stories to students' experiences. Students should be given opportunity to explore many hypothetical questions, debate on topical, social issues - the environment, the economy, national health insurance and alike . They may be asked to write about their personal vision of a Utopia; write a description of universe that has no sex differences etc.

Students are to be given opportunities to solve problems and reason scientifically. Group discussions can be arranged in which students design experiments to answer questions. Wherever possible, the teacher should teach broad concepts, not just facts, using materials and ideas relevant to students' lives. Lyrics can be used from popular songs to teach poetic devices, to reflect on social problems, and to stimulate discussion on the place of popular music in our culture.

Concrete and personalized examples may be provided particularly when abstract concepts are first introduced. Questions may be asked to involve them in discussions to assess their present level of development. The teacher can use student interaction to expose students to the thought processes of more advanced students. He/she can provide practice in hypothetical thinking. Honest replies to adolescents' queries regarding physiological changes taking place at adolescent period could help to eliminate much of the fear and anxiety that the adolescents experience. School libraries and workrooms must be adequately equipped in order to cater to the needs of the adolescents.

Cooperative learning groups comprised of members of varying abilities may be formed to provide opportunity to students to converse with their peers about academic materials. Peer tutoring opportunities are to be provided to afford students the chance to interact with a peer at a more advanced level of cognition who could provide the student assistance as he/she works in the *zone of proximal development.* Zone of proximal development is the difference between an individual's current level of development and his or her potential level of development.

The teacher should provide *scaffolding* or support for learning and problem solving. The support could be clues, reminders, encouragement, breaking the problem down into steps, providing an example, or anything else that allows the student to grow in independence. The scaffolding is to be tailored to the needs of students by providing models, prompts, sentence starters, coaching and feedback. As the students grow in competence, less support and more opportunities for independent work may be given. It is to be assured that students have access to powerful tools that support thinking and experiment with cooperative learning strategies. Learning can be assisted by the use of procedural facilitators, modeling use of facilitators, thinking out loud, anticipating difficult areas, prompting and reciprocal teaching.

It is obvious, if we understand children's thinking, we will be better able to match teaching methods to children's ability. The students vary greatly in both their level of cognitive development and their academic knowledge. To determine whether students are having trouble because they lack the necessary thinking abilities or because they simply have not learned the basic facts the teacher should observe the students carefully as they try to solve

the problems the teacher has presented. Students may be asked to tell how they tried to solve the problem. By listening to their strategies the teacher can understand what kind of thinking is behind repeated mistakes or problems. The students are the best sources of information about their own thinking abilities **(Confrey, 1990).**

It is obvious that many materials and lessons can be understood at several levels and can be "just right" for a range of cognitive abilities. Classics, myths, and fairy tales can be enjoyed at both concrete and symbolic levels. Also possible for students to be introduced to a topic together, then work individually on follow-up activities matched to their level (Good and Brophy,2003),

Cognitive psychology reveals that individuals construct their own understanding, as learning is a constructive process. At every level of development the teacher has to see that students are actively engaged in the learning process. "To know an object or an event is not to make a mental copy or image of it. To know are object is to act on it. To know is to modify, to transform the object, to understand the process of this transformation, and as a consequence to understand the way the object is constructed" **(Piaget, 1964).**

This active experience, even at the earliest school levels, should not be limited to the physical manipulation of objects. It should also include mental manipulation of ideas that arise out of class projects or experiments. (**Ginsburg & Opper, 1988) .** Students need to interact with teachers and peers in order to test their thinking to be challenged, to receive feedback, and to watch how others work out problems. Disequilibrium is often set in motion quite naturally when the teacher or another student suggests a new way of thinking about something. As a general rule students should act, manipulate, observe, and then talk and/or write (to the teacher and each other) about what they have experienced. Concrete experiences provide the raw materials for thinking. Communicating with others makes students use, test and sometimes change their thinking abilities.

For supporting identity formation in adolescents they should be given many models for career choices and other adult roles. Models from literature and history may be pointed out. Guest speakers may be invited to describe how and why they chose their professions. Students are to be helped to find resources for working out personal problems. They should be encouraged to talk to school counselors. The teacher has to be tolerant of teenage fads as long as they do not offend others or interfere with learning. Students are to be given realistic feedback about themselves. When students misbehave or perform poorly, it is to be assured they understand the consequences of their behaviour - the effects on themselves and others.

For personal and social development of students, they should be helped to examine the kinds of dilemmas they are currently facing and to see perspectives of others. The teacher helps students make connections between expressed values and actions. Students may be asked to identify inconsistencies between their values and actions, It is to be ensured that as much as possible the class reflects concerns for moral issues and values.

Adolescence is the time for building conscience and rational values. They are to be initiated into good behaviours by parents, teachers and other elders by their encouragement, direction and suggestion. Good behaviours and manners must be reinforced to ingrain them deeply as strong behavioural tendencies with value content. Reward and punishment, praise and reproof, approval and disapproval act as reinforcers. Punishments may be small denials, deprivations and delays, shift from more preferred to less preferred roles and things, a stern word or look, rather than corporal punishments. Reinforcement enables children to develop qualities of discriminating between good and bad behaviours, between right things and wrong things.

DESCRIBE THE STAGES OF ERICKSON'S PSYCHO-SOCIAL THEORY WHICH NEED TO BE TAKEN CARE OF IN DESIGNING LEARNING EXPERIENCES FOR PRIMARY SCHOOL CHILDREN.

Erik Erickson was born in Germany to parents of Danish stock. He was introduced to Freud in Vienna. After working there for sometime, he migrated to America. Erickson's living in the migrated land convinced that Freud, in giving over importance to sex instinct had undermined influences of social and cultural experience in shaping human behaviour. Another modification which he introduced in Freudian theory is related with the age extension of mature adulthood to65 and beyond. For this reason, his theory is called psychosocial stages of development in contrast to Freud's psychosexual stages.

STAGES OF PSYCHOSOCIAL DEVELOPMENT

The negative and Pathological aspects of emotional gusty, Erickson directed the theory into a broadly context. He san development continuing throughout one's entire life and yet gave special significance to childhood (birth to six years). The Juvenile era (six to twelve years) and adolescence (twelve to eighteen years). In Erickson's perspective, personality grows out of successful resolutions of dichotomies(like trust versus mistrust, etc). The theory espouses, people adapt to the world of living by employing both the positive and negative qualities of a particular stage of development. However, the positive qualities have to out-weigh the negative (weak) qualities for well adjusted behavioural development.

TRUST VERSUS MISTRUST (BIRTH TO 1 ^{1}/2 YEAR)

Infants basic impulses revolve around his/her oral satisfaction like taking in food and actions such as biting. These experiences are provided by the mother and lead to comfort and satisfaction for the infant. In case, the mother handles these need firmly, i.e., 'consistently, continuously, and with sameness of experiences' together with a sense of loving, then, the infant develops trust. This provides confidence in the outer world and forms the core of the infant's ego. However, if these oral needs are net with doubt, then, the infant develops a sense of mistrust.

AUTONOMY VERSUS SHAME AND DOUBT (1 1/2 TO 3 YEARS)

Toilet training of the infant provides experiences in 'holding on and letting go.' The trust developed in the first stage can be violated, in case, the parents ignore ejection forms an outlet for the child to decide for him/her self how to execute these needs. A conflict develops whether to control bowels or to respond to parental pressure to eliminate on their request or not. Not to do so on parental command leads to a sense of shame.

FNITIATIVE VERSUS GUILT (3-7YEARS)

!t is a period of conflict development for the children of 3 to 7 years. The conflict arises due to children sexual and aggressive advances toward the parents because, they discourage these acts. Children who are made to feel unworthy, immoral, and dirty, etc due to these overt behaviours tent to develop an enduring sense of guilt in coming years.

INDUSTRY VERSUS INFERIORITY (7-12 YEARS)

On entering the school system, children engage in a variety of play/ academic activities. Success in these activities leads to development of their competence. Failure negates it. Honest parental support leads to a sense of productivity among children. Non-supportive reprimands build a sense of despair and inferiority in them.

IDENTITY VERSUS ROLE CONFUSION (12-18 YEARS)

With the onset of puberty, acquired security and identities are badly shaken among the adolescents, Sexual impulses and relations with others pose severe problems for them. The adolescents doubt about their feelings for others. They hunt for personal identity on the basis of their sex role. It also

affects their career plans. All this creates floundering conditions in them. It deters them in moving in an assured direction of work-world. Those adolescents who come to the grip of an unique and integrated personality become better individuals. **Those** who fail in this, end in a sense of isolations, and hence, tread the path of frustrated being.

INTIMACY VERSUS ISOLATION (18-30 YEARS)

During this period a need to love some one of the opposite sex is intensely **felt.** This provides mutually satisfying state of affairs. However, **it is** no more tagged to sex alone. But instead of it, intimacy is extended to spheres like work, recreation, parenthood as well as to procreation process. This kind of intimacy is actually difficult to achieve, because of sexual inhibitions and adaptations to other interest/needs and life styles. If this is achieved, then, it leads to better adjustment by the person. If otherwise, then, conflict arises due to non-attainment of goal. Such persons, in general, feel as if they are not liked by anyone and feel isolated from the society.

GENERATIVITY VERSUS SELF - ABSORPTION (30-60 YEARS)

In terms of age span, no other stage has such a big range of development. In human **life this** stage is associated with the fulfilling of the ego with adult responsibilities largely of parenthood. The term 'generativity' encompasses meanings like the fostering and enriching of ones pursued interests, promotion of welfare activities and **rearing** of one's **children.** Non achieved goals lead to frustrating situations in areas of self-interest and hatred for work-culture conditions. All these cause stagnation among persons. People who hold **others responsible for** their stagnation, feel miserable and also resort to this style of life.

INTEGRITY VERSUS DISGUST 60 YRS +

During this stage, the healthy person feels a **sense** of having led a wholesome life. He had meaningful perspective of living. Being a human and lived like it makes him happy. These are persons who feel being self-actualized. Therefore, they possess ego integrity. Non-actualized persons feel disappointment, failure, and loss. Ego integrated persons display positive **view** of death. Fear of death haunts those who manifest despair. For such persons it is already late to embark on a better style of living. For Erickson, persons who display ego integrity have achieved emotional integration for better 65+ and beyond living. In Indian parlance, it is the *Zinda dilee* that clocks better living even after **65+.**

DISCUSS GARDNER'S THEORY OF MULTIPLE INTELLIGENCES.

Gardner 1993 believed that there are seven different kinds of intelligences that are independent of one another. They are: *Linguistic intelligence:* the ability to use language effectively.This intelligence includes making convincing and persuasive arguments; writing poems and using appropriate vocabulary, observing subtle differences in meaning of words while communicating with others.

★ **MUSICAL INTELLIGENCE:** This is the ability for creating understating and appreciating music. This includes ability to play musical instruments, composing and appreciating music.

★ **LOGICAL-MATHEMATICAL INTELLIGENCE:** This is the ability to reason logically, especially in mathematics and science. This includes: ability to solve mathematical problems; generating mathematical proofs; formulating and testing hypotheses about observed phenomena.

★ **SPATIAL INTELLIGENCE:** This is the ability to notice details of what one sees and to imagine and manipulate' visual objects in one's mind. This includes: building up mental images in one's mind; drawing a visual likeness of an object, making fine discrimination among similar objects,

★ **BODILY-KINESTHETIC INTELLIGENCE:** This is the ability to use one's body skilfully; it includes: dancing, playing a game; performing pantomime.

★ **INTRAPERSONAL INTELLIGENCE:** (Knowledge of one's own feelings motive and desires). It includes: distinguishing emotions like sadness and regret; identifying the motive guiding one's own behaviour; using self- knowledge to relate more effectively with others.

★ **INTERPERSONAL INTELLIGENCE:** (The ability to notice subtle aspects of other people's behaviour). It includes reading other people's mood; detecting others underlying intentions and desires; using knowledge of others to influence their thoughts and behaviour.

Gardner first identified and introduced seven different kinds of intelligence. He then identified an eighth intelligence, the *naturalist intelligence* that refers to the ability to recognize and classify plants, minerals and animals, including rocks and grass and all - varieties of flora and fauna.

Like Sternberg's triarchic theory, Gardner's theory of multiple intelligence also suggests that we may find different forms of intelligence in different students, (For example one student may be strong in math while another may be in language still some other may be good in music in comparison with his classmates. Gardner, like Sternberg feels that intelligence is reflected differently in different cultures.

Sternberg and Gardner give us reason to believe that if intelligence is multifaceted, then we are likely to see intelligent behaviour in many of our students -perhaps *all* of them, in one way or another. One may be good in mathematics; another may be exceptionally a creative writer; a third may be skilful in interpersonal relationship and a fourth may have talent in art or music.

MEASUREMENT OF INTELLIGENCE

An intelligence test is a general measure of current cognitive functioning. It is used to predict academic achievement over a period of time.

Intelligence is measured with tests. The tests include items and sub-scales which consist of questions or exercise arranged into groups that increase in level of difficulty. The intelligence tests may be classified into;

      (a) **Individual tests**

      (b) **Group tests.**

They are further classified as

      (a) verbal,

      (b) non-verbal,

      (c) performance.

INDIVIDUAL TESTS

Individual tests allow close observation and control over the behaviour of the subject. They test only one subject at a time, need highly trained test administrator and are more reliable and useful in clinical setting.

GROUP TESTS

Group tests are less time-consuming. They are administered in groups, demand minimum training for administering them. Results except for clinical usage are quite comparable.

VERBAL TESTS:

In verbal tests instructions and responses are given in words, written or oral. Items included are: vocabulary test (analogies, synonyms); memory tests (short and long- term memory, recall and recognition type items); comprehension tests; information tests; reasoning tests- requiring to reason logically, analytically and synthetically; number and letter series tests and association tests.

NON-VERBAL TESTS:

These tests consist of figures or objects requiring completion, association, imagination and reasoning to solve the problem or reacting to the given situation. Language is used only for giving directions.

PERFORMANCE TESTS:

They involve manipulation of concrete solid objects like arranging objects to form some figure or a structure.

Define personality. Discuss various types of measures to assess personality.

Various kinds of techniques are used in psychology to evaluate one's personality characteristics and the various personality traits he/she possesses. These techniques will help to find out the defects in individual personality also. Hence all techniques can be used to evaluate the individual's personality.

PROJECTIVE TECHNIQUES

Projective techniques try to evaluate the unconscious behaviour of the individuals. They try to evaluate the total personality of an individual and not separate segments.

The methods used for the assessment of personality are:

SUBJECTIVE,

Subjective tests are those in which the testee or the tester can put their own meaning or reflect their bias in making response or interpreting it.

1. rating scales
2. Interview,
3. observation,
4. questionnaires,
5. autobiography,
6. biographies

OBJECTIVE

The method of presenting the individual items, the manner of responding and provision for liminating the tester's personal error in evaluating contribute to the objectivity of scoring.

1. tests
2. inventories

PROJECTIVE.

The projective techniques offer and approach to the measurement of the personality, which is different from the self-descriptive inventories. Self-descriptive inventories require the subject to describe himself. The projective techniques require the subject to describe or to interpret objects other than himself. The projective techniques are based on the hypothesis that an individual's response

★ ambiguous material
★ multidimensional of responses,
★ evoke responses from the unconscious,
★ full freedom to respond to the test stimuli,
★ holistic approach,
★ answers are neither right or wrong,
★ purpose of the test is disguised,
★ they are interpretive and cathartic in nature.

(1) Rorschach Ink Blot Test,
(2) Thematic Apperception Test,
(3) Children's Apperception Test
(4) Blackly Picture Test
(5) The Word Association Test
(6) Sentence Completion Test
(7) Story Telling and Story Completon Test
(8) Free Association and Dream Analysis Test.

JEROME S. BRUNER AND HIS THEORY OF COGNITIVE DEVELOPMENT

Jerome S. Bruner is considered as the advocate of learning by discovery. The Launch of Russian satellite sputnik into space in 1957 forced American educationists to bring in radical changes in school curricula so as to produce great scientists. Burner who studied the cognitive development of children developed a theory, which is concerned with cognitive representation of the outer world by the children. According to Bruner (1960), effective learning occurs when students acquire a general understanding of a subject; that, when they understand the structure of a subject, they see it as a related whole. According to Bruner, mind organises knowledge in a hierarchical fashion, with the more general, all encompassing ideas at the tope of hierarchy, and the more concrete, factorial ideas toward the bottom. Mind categories the information that comes through senses and organises it. *Categorization* is how the mind simplifies information that enters short term memory. *Organization* involves arranging information in coding systems.

Bruner theorizes that the mind spontaneously organises information in a hierarchical manner with the organization of knowledge in long-term memory. Hence "Curriculum of a subject should be determined by the most fundamental understanding that can be achieved of the underlying principles that give structure to that subject." (Bruner, 1960)

BASES OF BRUNER'S THEORY OF COGNITIVE GROWTH

Bruner believes that cognitive development takes into account the following points.

INDEPENDENCE OF RESPONSE FROM STIMULUS

Intellectual growth in children is influenced by increasing independence of responses from stimulus. In sensory-motor stage, the responses of children are mainly governed by various stimuli. As children grow and acquire language ability, they respond to different situations independent of the presence of stimuli.

MENTAL REPRESENTATIONS

Children develop mental representations of the outside reality through internal information processing and storage system. These mental representations may be verbal, visual, mathematical or musical. Language helps a child form mental representations of the realities outside.

SELF-CONSCIOUSNESS

Intellectual development involves an increasing capacity to say to ourselves and others, in words or with symbols, what we have done and what we will do. This point deals with self-consciousness. (Gage and Berliner, 1984).

TUTOR-LEARNER INTERACTIONS

Cognitive growth, according to Bruner, depends on constant interactions between tutor and learners. A tutor can be teacher, mother, father, friend or any other person who can teach a child.

LANGUAGE AS THE KEY

Language is a key symbol, which plays an important role in cognitive development. It helps a child to communicate her conceptions of the world. It mediates various events occurring in the world.

SIMULTANEITY IN COGNITION

Cognitive growth in children is characterized by their ability to engage in simultaneous cognition. They can perform concurrent activities and pay attention to various learning situations.

AUSUBEL AND HIS COGNITIVE DEVELOPMENT THEORY: THE ADVANCE ORGANISER

David P. Ausubel is known for this theory of meaningful verbal learning and the concept of *advance organizer.* Ausubel addresses the achievement of two broad objectives in the context of schooling. According to Ausubel (1985), "In setting our academic goals………we must be concerned with the ultimate intellectual objectives of schooling; namely, i) the long term acquisition of valid and usable bodies of knowledge and intellectual skills, and ii) the development of ability to think critically, systematically and independently. The achievement of these two goals of schooling is possible only if the classroom learning is made meaningful. He classified learning into two categories, which are a) reception versus discovery learning, and b) rote versus meaningful learning.In reception learning, the content matter to be learnt is presented to the student in the final form. On the other hand, in discovery learning, the principal content of what is to be learnt is not presented to the student but is discovered by him or her before she internalizes the same. Reception learning follows deductive method whereas discovery learning takes place through inductive method. Lecture presentations are generally receptive in nature whereas laboratory works are discovery in nature.According to Ausubel both reception and discovery learning can eit^?r be rote or meaningful depending on the conditions undtr which learning occurs. According to him, meaningful learning takes place if the learning task can be related in a non-arbitrary and substantive (verbatim) fashion to what the already knows, and if the learner adopts a corresponding set to do so. On other hand, rote learning occurs if the learning task consists of purely arbitrary associations or the learners lacks relevant prior knowledge necessary for making the learning task meaningful.

CONCEPT OF MEANINGFUL LEARNING :

According to Ausubel, meaningful learning process pre-supposes two-things; (a) that the learning task is potentially meaningful or that it can be related substantively to the learner's cognitive structure (structure of knowledge in mind), and (b) that the learner manifests a corresponding set to so relate it. Thus, meaningful learning depends on two factors; i) the nature of the material to be learned, ii) and the availability of relevant content in the learner's cognitive structure. Even if the learning material is meaningful but there is no corresponding meaningful set in the learner's cognitive structure meaningful learning does not take place. For instance the theory of operant conditioning which is itself meaningful may not be learnt meaningful if the learner does not have concepts such as stimulus, response and chaining, etc. in her cognitive structure.

KINDS OF MEANINGFUL RECEPTION LEARNING :

Ausubel talks of three kinds of meaningful reception learning. **These are** i) representational learning, ii) concept learning, iii) prepositional learning.

REPRESENTATIONAL LEARNING :

This type of learning takes place in the early childhood period. It involves learning the meanings of single symbols or words or learning what they represent. When a young child learns the meaning of the world 'dog'. She relates the sound of the dog with her perception of the 'dog-object'.

CONCEPT LEARNING :

In concept learning, the criteria! attributes of the concept are learnt through successive stages of hypotheses formation, testing and generalization. A child learns the concept of 'cat' after successive encounters with cows, donkey, tigers, and monkeys, etc. But there are some concepts, which are learnt through concept assimilation process. For example, the child has the concepts, like chair, table, etc. in her cognitive structure. The new concept 'furniture' can be assimilated by relating the attributes of the new concept with already existing concepts.

PROPOSITIONAL LEARNING :

When a learner learns as combination of concepts or ideas providing a composite meaning, prepositional learning takes. A proposition refers to combination of more than two concepts giving rise to composite meaning. For example, 'sugar is sweet' is a proposition comprising two concepts 'sugar' and 'sweet'. Both these concepts give rise to a composite meaning.

MEANINGFUL RECEPTION LEARNING AND ORGANIZATION OF SUBJECT MATTER

Ausubel relates meaningful learning with organization of subject matter. He believes that there is a parallel between the way subject matter is organized and the way people organize knowledge in their minds. Each of the academic disciplines has a structure of concepts and or propositions that are organized hierarchically (Ausubel, 1985). At the top of each discipline, there are a number of very broad, abstract concepts, which subsume a number of concrete concent.

PAVLOVIAN CONDITIONING(OR) CLASSICAL CONDITIONING

Having understood two categories of behaviour, now let us examine how *classical conditioning* or respondent behaviour develops. It is also known as Pavlovian conditioning. Ivan Pavlov (1849-1936) by profession was a physiologist. He studied physiology of digestion. He also investigated the cause that led to the flow of saliva into the mouth of the dog. It is a reflex activity controlled by the autonomic nervous system of the dog. Pavlov designed a technique to measure the quantity of the salivation in the experimental dog. This formed the basis for understanding respondent conditioning. How Pavlov executed conditioning in the dog is described below:

First the dog was harnessed. It means the dog was made to learn to be quite and maintain composed posture in the conditioning chamber. Once the dog has learnt this, a bell was rung. After a few seconds then meat powder was presented. This procedure was repeated many times. Then the experimenter rang the bell but did not offer meat powder to the dog. Inspite of this, the dog had salivated. It means the dog had been conditioned to the sound of the bell for producing salivation response. Pavlov had called it a *conditioned response* (CR). Under neutral condition, a dog salivates only when it smells/ eats meat. This is an *unconditioned response* (UR). Meat is also an example of *unconditioned stimulus* (US). The dog salivates automatically (This is due to the activity of the dog's autonomic nervous system-AVS). Sound of the bell under normal condition does not elicit dog's salivation. However, only when the dog has learnt to associate bell (sound) with food, then, it salivates. Hence, the bell acquires the status of the conditioned stimulus (CS). In actuality during conditioning, the original response to the US is designated as UR, the learnt behaviour to the conditioned stimulus (CS) is called a conditioned response (CR). How all this takes place is diagrammed below:

Before conditioning

| Neutral stimulus (Bell-sound) | > | No relevant response |
| Unconditioned Stimulus (US) (meat powder) | > | UR Unconditioned response (salivation) |

During conditioning

| Neutral stimulus + US (Bell) (meat) | > | UR Unconditioned response (salivation) |

After conditioning

| Neutral stimulus > CS (bell) | > | CR Conditioned Response (salivation) |

Before conditioning, the neutral stimulus causes no relevant response. The unconditioned stimulus always causes the unconditioned response. During conditioning, the neutral stimulus is associated with the unconditioned stimulus. After conditioning, the earlier neutral stimulus has become a conditioned stimulus and it causes a conditioned response.

SKINNER CONDITIONING (OR) OPERANT CONDITIONING

In the late 1930s, Skinner a Harvard psychologist studied thoroughly the phenomenon of classical conditioning in order to understand how better learning, and accepted its basic principles. Skinner was most interested in the learning principles governing "operant behavior". Operant behavior in contrast to respondent behavior (of classical conditioning where behavior occurs in response to a stimulus) is not a physiological or emotional response to something that happens in the person's environment. Rather, operant behaviors are actions that a person uses to meet the *demand of the* environment. For this he created the operant box. It is a simple box in which the animal (rat) can manipulate a lever. This action of the animal ts reinforced by providing a food pallet/ water arrangement. For the use of the pigeon, a key was used for its pecking. In actuality lever/key are devices that are activated by the organism on the basis of positive reinforcement. Hence, positive reinforcment enhances the lever pressing (rat) or the key pecking (pigeon) behaviour. In this kind of learning by the animal voluntary acts are involved. These behaviours are controlled by the central nervous system of the animal. Therefore, they can be learnt without unconditioned stimuli. Below is given the description how operant conditioning takes place.

First a hungry rat is allowed to eat the food pallet delivered by the experimenter. It is necessary condition for the rat to learn this behaviour. Now the rat is kept hungry for sometime, say 12 hrs. It is then transferred to the operant box. The rat displays random behaviours like biting, clawing and sniffing, etc. Accidently it presses the lever and this delivered the food pallet. It means the action of lever pressing was reinforced through reward (food). Morgan et al (1993) observed the following:

- the rat did not press lever until after fifteen minutes;

- the second lever pressing took place about thirty minutes after;

- the food reinforcement became stronger about seventy five minutes; and

- afterwards the rate of response became high and got fairly stabilized.

These experimental facts suggest that 'shaping' is a classic concept in operant/ instrumental conditioning. Reinforcement leads to modification of the desired response. Brown and Jenkins (1968) emphasize that classical conditioning plays an important role in behaviour shaping process of the rat. The process of classical conditioning in shaping animal-behaviour in an operant chamber has been designated auto-shaping. For the rat auto-shaping can be achieved by the use of a retractile lever. The lever (the CS) is presented just before the food pallet, i.e., the US, and, then it is witheld until the next trial.

Extinction

It has been defined as 'the elimination of reinforcement in either classical conditioning (the US) or operant conditioning (the reward).' Hence, it decreases the strength of the response that follow elimination of the reinforcement. How the withdrawl o^reinforcement works in operatic conditioning is described below :

- When the animal is rewarded the behaviour is reinforced steadily

- withdrawal of reward produces a flurry response in the animal

- the rate of responding decreases fairly rapidly, until it extinguishes altogether

GESTALT LEARNING

The first three decades of twentieth century witnessed the emergence of a new school of thought in psychology of learning.. The pioneers of this school were Max Wertheimer (1912), Kurt Koffka (1924) and Wolfgang Kohler (1925). These psychologists provided an alternative to stimulus response learning, which is known as Gestalt learning. Gestalt learning gives importance to perception of the whole, not the collective association of ideas, as was given by Behaviourists. According to Wertheimer (1923), the whole is always greater than the sum of its parts. Learning is not the outcome of an association of a series of stimuli responses, but the perception of the whole learning task. The word 'Gestalt' means form, pattern, structure or configuration. Its basic contention is that mental processes and behaviour cannot be analysed without remainder, into elementary units, since wholeness and organization are features of such processes from the start (Dandapani, 2001).

LAW OF ORGANIZATION

Wertheimer developed four laws of organization to explain how perception plays an important place in the learning process. He believed that the environment is organized in ways that are meaningful to individuals. To substantiate his belief, he talked about figure and ground. Figure stands for any objects, events or ideas and each figure exists in relation to the larger environment, i.e. ground. For example, playground, laboratory, classrooms, libraries are figures of a school is ground or the larger environment. Hence, we perceive the school in totality including its components figures. There are four laws developed by Wertheimer and Koffka, which govern the parelptron of the whole.

LAW OF PROXIMITY

When elements of an environment remain closer, they are perceived together. For example, a teacher might list the numbers one through twelve in a straight line, which students may recognize as the numbers one through twelve. A teacher may also arrange these numbers in a clockwise circle, which students may now perceive not just as numbers, but also as face of a clock (Thornburg, 1984).

LAW OF SIMILARITY

Objects of similar features are likely to be perceived together. You must have observed that small children are given blocks of different shapes and asked to separate them out with similar shapes. The following figure would explain the concept. Children can be provided blocks of square and triangular shapes and asked to separate them out. Children are likely to perceive the objects having similar shape together.

LAW OF COMMON DIRECTION

According to this law, a set of points will be grouped if they appear to complete or continue a series. The common example of this law is that when the teacher teaches a straight line by placing several points in a particular direction.

LAW OF SIMPLICITY

This law states that individuals compare objects or ideas having highly similar characteristics. This makes the learner's perception simple and with regular patterns. For example, a learner can perceive a 'round' shape with an 'oval' shape more easily as these two shapes have highly similar characteristics.

LAW OF PROXIMITY

This law states that the greater the proximity between two things, the greater is the likelihood of their being perceived as fitting or belonging together.

LAW OF CLOSURE

'According to this law, the more completely something is perceived, the more likely it is to be thought of as complete.

Kohler's experiments

The third pioneer of Gestalt psychology was Kohler. He conducted a series of experiments with apes and developed 'i.e concept of *insight* learning. In the first experiment, he kept a hungry chimpanzee in a cage and kept a banana outside the cage but it was not reachable by the chimpanzee. The chimpanzee tried to reach the banana but failed. Kohler placed a hooked stick in front of the cage. The chimpanzee looked at the stick and banana together. It caught hold of the stick and extended it to pull in the banana. In this way, it succeeded in eating the banana.

In the second experiment, Kohler kept a long hooked stick out of the reach of the animal but a short stick closer to the cage. The animal perceived both the stick and the banana together. First, he caught hold of the small stick and with the help of small stick pulled in the long stick. With the help of long stick, he could reach the banana.

In the third experiment Kohler kept two sticks of equal length closer to the cage but far away from the banana. One stick was a thinner and the other stick had a hollow at one end. The thinner stick could be fitted into the hollow of the thicker stick to become a long stick. In the beginning, the animal tried to reach the banana with the help of both the sticks but failed in its attempts. All of a sudden, it got an idea and put the thinner stick into the hollow of the thicker stick. After joining the sticks, it could get a larger stick, which helped it to reach the banana.

The design of the fourth experiment was different from the earlier experiments. In this experiment, he kept the chimpanzee inside a room and hung bunch of bananas from the ceiling of the room. A few boxes were kept inside the room. In the beginning, the animal tried to reach the bananas but in vain. Then he brought one box, placed it below the bunch of bananas and climbed it up to reach the bananas. Kohler then raised the height of the bananas a little more so that the animal could not reach them. The animal collected a few more boxes, placed them one after another and reached the bananas.

From these experiments, Kohler concluded that the chimpanzee could not solve the problem i.e. reaching the bananas, by trial and error method of Thorndike, but by the perception of the total situation. The possibility of combining the two sticks or piling up of boxes and the possibility of reaching the bananas, were all perceived as 'Organised Factors of the Perceptual Field' (Dandapani, 2001). The animal considered all the factors in its perceptual field to solve the problem. Kohler called the sudden idea of finding a solution to the problem as it happened in each experiment with the chimpanzee as Insight. Learning which occurs through this process is called insightful learning.

GUILFORD'S STRUCTURE OF INTELLECT THEORY
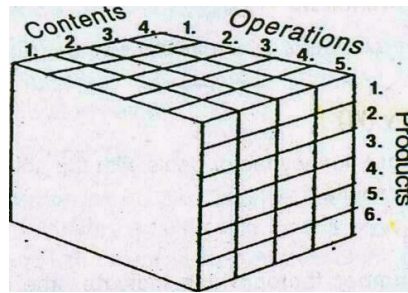
        Through the theory of structure of intellect **J.P.Guilford** (1967) described the structure of ability in an elaborate manner. He says that 'an intellectual ability aims to perform a particular type of cognitive operation upon a particular type of content to produce a particular type of product. There are five types of operations, namely - Cognition (C), Memory (M), Divergent thinking (D) Convergent thinking (C) Evaluation (E), four types of contents - Figural (F), Symbolic (S), Semantic (S) and behavioural (B) and six types of products - Units (U) Classes (C), relations (R) Systems (S) Transformations (T) and Implications

Therefore, the maximum number of mental abilities can 6 x 5 x 4 = 120.

I. OPERATION OR PROCESS

Following are the five main groups of mental abilities:

★ Cognition-it refers to discovery, re-discovery or recognition.

★ Memory - it implies retention of what is recognized.
★ Convergent thinking-this is the type of thinking which results in the right or best answer.
★ Divergent thinking - means thinking in different directions, or searching for variety, about goodness, suitability, or adequacy of what we understand, remember or think.
★ Evaluation - it is taking decisions about accuracy, goodness or suitability of information.

II. CONTENT OR MATERIAL :

★ Figural Content - It is material perceived through the senses.
★ Symbolic Content - It is composed of letters, digits and[1] other conventional signs, usually organized in general systems (alphabet, number system).
★ Semantic Content - It takes the form of ideas or verbal meanings.
★ Behavioural Content - It refers to social intelligence or knowledge and understanding of ourselves and others.

III. PRODUCTS :
★ Units - Comprehending visual, auditory and symbolic units, in addition to the knowledge of the meaning of words.
★ Classes - The ability to classify words or ideas.
★ Relations - The ability to become aware of relationship between objects because of their figural or symbolic properties and the ability to discover relations in conceptual material.
★ Systems - the ability to format objects in space, to design symbolic elements and the ability to structure problems in the preparation for solution.
★ Transformation - The ability to see what would happen to objects if they were changed, or to suggest changes in the existing circumstances.
★ Implications - The ability to extend expectations and project the present information into the future happenings.
★ Guilford, says that the model is purely theoretical and is subject to change.

What is meant by cognition ? Describe Piaget's theory of cognitive development.

Jean Piaget (1896 -1980), a Swiss psychologist was the first to make a systematic study of how children develop understanding and thinking. In other words, what are the cognitive processes that enable a child to know about the world.From countless observations of the thought processes of the children at different ages, Piaget traced four concepts and four stages of cognitive development. Piaget's four stages of Cognitive Development are :

1. Sensory Motor Stage
2. Pre - Operational Stage
3. Concrete Operational Stage-
4. Formal Operational Stage

1. SENSORY - MOTOR STAGE (BIRTH TO 2 YEARS)

Immediate experience through the senses is the basis of this sensory motor stage and the chief intellectual activity is sensory interaction of the environment. The child's activities are physical and without language, to label experiences. This stage is characterized by:

i.   Development of sensory, motor and perceptual skills. ii.   Coordination of motor activities.

(For instance, a six month old infant will try to hold a ball by using all its four limbs where it does not i*row that hands and legs can be moved separately) but an eight month old infant will try to hold the ball only with hands; a ten month old infant tries to hold a small objects like a lemon by a single hand and use both hands for object of big size).

iii.   At first, for a child an object 'out of sight' is 'out of mind'. But towards the close of the second year it learns **'Object permanence'** in space and time.

(For instance, an infant of half a year old trying to reach a toy will stop its attempt immediately, if the toy gets covered and hid by a cloth. But a 18 month old child continues to search for it, thereby indicating that he knows that the object exists though it is not present to his sense.)

iv.   development of rudimentary memory;
v.   gradual progression from reflex behaviour to intentional behaviour;
vi.   development of curiosity, and trial and error exploration of immediate surroundings;
vii. able to differentiate itself from objects and this is the basis of self-concept.

2. Pre-operational stage (2 to 7 years)

The thinking of pre-operational child is characterised by:

i.   **Ego-Centrism:** (Employing words which have unique meaning for the child, which limits the child's ability to comprehend the views of others);
ii.   **Animism:** (Thinking and treating inanimate, lifeless things as living objects. For example, children used to deal with their lifeless dolls as if they are alive.)
iii. **Realism:** (Considering dreams as true and real) (e.g.children at this stage pretend stuffed toys are real, have imaginary friends etc.)
iv.   Centring: (the child can concentrate on only one aspect of a thing at a time).
v.   Due to centring they can not understand that objects are **Conserved** even if they change their positions or their shapes altered.

3. Concrete operational stage (7 to 11 years)

The child begins to perform logical manipulations and masters various conservation concepts during this concrete operational stage. Classification and seriation (organizing objects into ordered series as increasing size, etc) become possible at this stage. He can also form a mental representation of a series of acts. But this 's limited to those objects which are perceivable in the real world. The child cannot think beyond their self experiences. [For example, a child of 5 or 6 years age will be able to lead us to an address asked but may not be able to explain the route, though it is familiar with those routes].

4. Formal operational stage (11 years to adulthood)

Thought becomes increasingly flexible and abstract during this stage of formal operations. He can carry out systematic experiments and keep a record of the track of what has been done, consider hypothetical objects and events, understand abstract ideas and principles. Theorising and critical evaluation as well as **"putting the possible against the real"** are evident at this stage.

WHAT IS MEANT BY COGNITION ? DESCRIBE PIAGET'S THEORY OF COGNITIVE DEVELOPMENT.

Cognition refers to higher mental processFunctions involved are perception, language, concept formation, abstraction, problem solving, intelligence, thinking etc.,

- ★ **Introduction**
- ★ **Cognition definition**
- ★ **Functions involved**
- ★ **Four stages in cognitive development –piaget**
    - ★ **Sensorimotor stage-birth to 2 years**
    - ★ **Pre-operational stage-2 to 7**
        - ★ **Ego-centrism**
        - ★ **Animism**
        - ★ **Realism**
        - ★ **Centering**
        - ★ **Conserved**
        - ★ **Length concept**
        - ★ **Volume concept**
        - ★ **Number concept**
        - ★ **Reversibility**
    - ★ **Concrete operational stage-7 to 11**
        - ★ **Use of written words and numbers**
        - ★ **Development of relational and combinational procedures**
        - ★ **Development of conservation ability**
        - ★ **Development of reversibility**
        - ★ **Development of seriation concept**
        - ★ **Development of transitive thinking or inference**
        - ★ **Development of classification ability**
        - ★ **Development of class inclusion**
    - ★ **Formal operational stage-11 years and above**
        - ★ **Four overlapping logical abilities**
        - ★ **Hypothetico-deductive thinking**
            - ★ **Inductive thinking**
            - ★ **Reflective thinking**
            - ★ **Inter-propositional logic**
    - ★ **conclusion**

Learning

★ **Meaning of learning**
★ **Importance of learning**
★ **Characteristics of learning**
  ★ **Universal**
  ★ **Continuous**
  ★ **Result**
  ★ **Purposive**
  ★ **Multiple and integrative**
  ★ **Contingent upon experience**
★ **Learning theories**
  ★ **Association theories**
  ★ **Thorndike's**
  ★ **Pavlov's**
  ★ **Skinner's**
  ★ **Hull's**
  ★ **Guthries**
★ **Field theories**
  ★ **Gestalt**
  ★ **Topological**
  ★ **Sign Gestalt**
★ **Pavlov's conditioning theory of learning**
  ★ **Law of causation**
  ★ **Law of experimental extinction**
  ★ **Law of generalization**
  ★ **Law of discrimination**
  ★ **Law of higher order conditioning**
★ **Gestalt theory of learning**
  ★ **Meaning of Gestalt: the german word means 'whole', 'pattern' or 'configuration'**
★ **Educational implications**
★ **Factors that influence 'insight'**
  ★ **Intelligence**
  ★ **Experience**
  ★ **Presentation**
  ★ **Initial effort**
★ **Steps involved in insightful learning**
  ★ **Preparation**
  ★ **Incubation**
  ★ **Illumination**
  ★ **Evaluation**
★ **Different types of learning**
  ★ **Motor learning or skill learning**
  ★ **Perceptual learning**
  ★ **Conceptual learning**
  ★ **Learning of attitudes and interests**
  ★ **Imitational learning**
  ★ **Social learning**

LEARNING AND TEACHING

★ Introduction
★ Psychological perspective
★ Psychological perspective
  - ★ Learner-abilities,needs, interest
  - ★ Learning process-behaviour, performance
  - ★ Learning situation
★ Psychological perspective of teaching and learning includes
  - ★ Human growth and development
  - ★ Nature and process of learning
  - ★ Personality and adjustment
  - ★ Measurement and evaluation
  - ★ Techniques and methods
★ Learning – psychological interpretation
  - ★ Cognitivist views on learning
  - ★ Behaviourists views on learning
  - ★ Neo-behaviourist views on learning
★ Teaching psychological perspective
  - ★ An action
  - ★ Interpersonal activity
  - ★ Teaching as a process
★ Significance of psychology of learning and teaching
  - ★ Understanding the learner
  - ★ Understanding the teaching- learning process
  - ★ Psychological bases of curriculum
  - ★ Classroom implication
★ **Conclusion**

DEVELOPMENTAL STAGES

- ★ **Pre-natal stage: the development in the womb of the mother till birth**
- ★ **Infancy stage: birth to 5**
- ★ **Childhood stage:6 to 12**
- ★ **Adolescent stage:13 to 19**
- ★ **Adulthood stage:20 and beyond**
- ★ **Infancy stage**
  - ★ **Physical development**
  - ★ **Mental development**
    - ★ **Questioning attitudes**
    - ★ **Rote memory**
    - ★ **Creative attitude**
    - ★ **Time sense**
    - ★ **Make believe(Fantasy)**
- ★ **Emotional development**
- ★ **Social development**
    - ★ **Dependence of the child**
    - ★ **Self – assertion**
    - ★ **Selfish and unsocial**
    - ★ **Social attitude**
- ★ **Moral development**
- ★ **Educational significance**
    - ★ **Wooden blocks** ★ **Play materials** ★ **Adequate freedom**
    - ★ **Secure** ★ **Curious** ★ **Plastic age** ★ **Play** ★ **Stories** ★ **Pictures**
- ★ **Childhood stage**
- ★ **Physical development**
- ★ **Mental development**
- ★ **Emotional development**
- ★ **Social development**
- ★ **Moral development**
- ★ **Educational importance**
    - ★ **Proper physical development**
    - ★ **Provision for extra-mutual activities**
    - ★ **Provision for excursions and scouting**
    - ★ **Planning proper social development**
    - ★ **Proper emotional outlet**
    - ★ **Developing the creative instinct**
    - ★ **Moral training**
    - ★ **Learning through self-activity**
- ★ **Adolescence stage**
- ★ **Physical development**
  - ★ **Divided into 3 stages**
    - ★ **Self love** ★ **Homo-sexual** ★ **Hetero-sexual**
- ★ **Mental development**
- ★ **Emotional development**
- ★ **Social development**
- ★ **Moral development**
- ★ **Conclusion**

ADOLESCENCE:PHYSICAL, EMOTIONAL, COGNITIVE, SOCIAL AND MORAL DEVELOPMENT

★ Introduction
★ Adolescence developmental trends
★ Hurlock(1973) adolescence period:
★ Pre-adolescence-11 to13   girls 13 to 15-boys
★ Early adolescence-13 to 15 girls 15 to 17-boys
★ Middle adolescence-15 to 19   girls 17 to 19-boys
★ Late adolescence-18 to 21   girls   19 to21-boys
★ Physical development
★ Psychosexual development
> ★ Sexual development is divided under the following three stages
>> ★ Self love
>> ★ Homo-sexual
>> ★ Hetero-sexual

★ Emotional development
★ Cognitive development
★ Social development
> ★ Identity achievement
> ★ Identity foreclosure
> ★ Identity diffusion
> ★ Moratorium
> ★ Moral development

★ The social learning-Aronfreed (1968),Mischel(1976)
★ The psychoanalytic-Hartmann(1960), Sarnoff(1976)
★ The cognitive development –Piaget(1932), Kohlberg(1964)
★ Conclusion

INTELLIGENCE

★ **Intelligence:meaning**

★ **Intelligence:Definitions**

    ★ **Alfred Binet**   ★ **Charles Spearman**

    ★ **David Wechsler**   ★ **Stoddard**

★ **Intelligence:Nature**

★ **Individual differences in distribution of intelligence**

★ **Theories of intelligence**

★ **Single factor theory**

★ **Two-factor theory or Bi-factor theory or Eclectic theory**

★ **Multifactor theory or group factor theory**

    ★ **Verbal comprehension**

    ★ **Word fluency**

    ★ **Number**

    ★ **Space**

    ★ **Memory**

    ★ **Perceptual**

    ★ **Reasoning**

★ **Guilford's structure of intellect theory**

    ★ **Operation or process**

    ★ **Content or material**

    ★ **Products**

★ **Gardner's multiple intelligence**

    ★ **Linguistic intelligence**

    ★ **Logical-mathematical intelligence**

    ★ **Musical intelligence**

    ★ **Bodily kinesthetic intelligence**

    ★ **Intra-personal intelligence**

★ **Assessment of intelligence**

★ **Constancy of intelligence quotient**

★ **Intelligence test**

    ★ **Intelligence test:Types**

        ★ **Individual tests of intelligence**

        ★ **Group tests of intelligence**

        ★ **Performance test of intelligence**

★ **Uses of intelligence tests**

    ★ **Proper classification of pupils**

    ★ **Classification of pupils into homogeneous groups**

    ★ **Application of theory of individual differences**

    ★ **Award of scholarships**

    ★ **Educational guidance**

    ★ **Vocational guidance**

    ★ **Progress anticipated**

    ★ **Assessment of the teacher's work**

    ★ **Guidance for new admissions**

    ★ **Guidance for selection of jobs**

★ **Conclusion**

CREATIVITY

★ **Creativity:Meaning**

★ **Creativity: Definitions**

★ **Creating : Characteristics**

★ **Creativity and intelligence**

★ **Identification of creativity**

    ★ **Intelligence test**

    ★ **Achievement test**

    ★ **Cumulative record cards**

    ★ **Teacher's observation**

★ **Promotion of creativity**

    ★ **Proper assessment of abilities**

    ★ **Continuous educational provisions**

    ★ **Proper facilities and materials**

    ★ **Competent school staff**

    ★ **Individual attention**

    ★ **Special methods of teaching and activities**

    ★ **Homogeneous grouping**

    ★ **Acceleration or double promotion**

    ★ **Enrichment of curriculum**

★ **Types of creativity**

    ★ **Convergent and divergent thinking**

    ★ **Lateral thinking**

    ★ **Thinking: Promoting thinking among students**

APTITUDE

★ **Aptitude:concept**

★ **Aptitude skill:Meaning**

★ **Differential aptitude tests(DAT)**

     ★ **Verbal reasoning**

     ★ **Numerical ability**

     ★ **Abstract reasoning**

     ★ **Space relations**

     ★ **Mechanical reasoning**

     ★ **Clerical speed and accuracy**

     ★ **Language usage-spelling**

     ★ **Language usage sentences**

★ **Measurement of aptitude**

★ **Uses of aptitude tests**

ATTITUDE

★ **Attitude:Meaning**
★ **Measurement of attitude**
★ **Thurstone's scale**
★ **Likert's scale**
★ **Attitude scales:Uses**

INTEREST

★ **Interest:Meaning**
★ **Interest:Definitions**
★ **Interest:Characteristics**
★ **Interest:Types**
  ★ **Manifest interest**
  ★ **Expressed interests**
  ★ **Inventoried interests**
  ★ **Tested interests**
★ **Interest:Measurement**
  ★ **Strong vocational interest blank(SVIB)**
  ★ **Kuder Preference Record-Vocational(KPR)**
★ **Interest Inventories:Uses**

PERSONALITY

A personality trait is an enduring and consistent characteristic of a person that is observed in a wide variety of situations. Such terms as intelligence, emotional sensitivity, ascendence, submission, irritability, warm, etc are personality traits.

★ Introduction
★ Meaning of the term-personality
★ Definition of personality
    ★ F.S.Freeman★ J.P.Guilford★ G.W.Allport
★ Characteristics of personality
    ★ It is self-consciousness★ Dynamic★ Adjustable or modifiable
    ★ Unique★ Assessable
★ Uses of the knowledge of personality to teachers
★ Factors influencing personality development
  ★ Biological factors
    ★ Physique★ Chemique★ Nervous system
  ★ Sociological factors
    ★ Home★ School★ Language★ Culture
  ★ Psychological factors
    ★ Intelligence★ Motivation★ Emotion★ Attitude
    ★ Interest ★ Sentiment
★ Role of school in shaping the personality of a child
  ★ Talk and chalk to pupil centered activities
★ Theories of personality
  ★ Typological theories of personality
  ★ Personality theories based on trait-approach
  ★ Psycho-dynamic theories(of Frued, jung and Adler)
  ★ Social learning theories(of Dollard and Miler)
  ★ Phenomenological theories(of Carl Rogers, Maslow and others)
★ Three major approaches in describing personality
  ★ Type approach ★ trait approach ★ type cum trait approach
★ Type approach to personality Galen's classification
★ Classified people 1.choleric(irritable) 2. Melancholic(sad)
    3. Phlegmatic(sleepy) 4.Sanguine(smiling)
★ Jung's classification Extrovert   Introvert
★ Trait-Approach to personality
★ Cattell's theory
  ★ Common traits
  ★ Unique traits
  ★ Surface traits
  ★ Source traits
★ Cattell's 16 personality factors
★ Type-cum-trait approach: Eysenk's classification 3 basic dimensions

LEARNING: PSYCHOLOGICAL INTERPRETATION

In the broadest sense, learning occurs when experience causes a relatively permanent change in an individual's knowledge or behaviour. The change may be deliberate or unintentional, for better or worse, correct or incorrect, and conscious or unconscious. This change takes place by experience - by interaction with other persons or environment. Change simply caused by maturation, such as growing taller or turning grey, do not qualify as learning. Temporary changes resulting from illness, fatigue, or hunger are also excluded from a general definition of learning. Several theories were framed by psychologists, each one attempting to explain the particular kind of change observed. Learning theories are classified broadly into two groups, namely

1. COGNITIVE THEORIES 2. BEHAVIOURISTIC THEORIES. 3. NEO- BEHAVIOURISM.

COGNITIVIST VIEWS ON LEARNING

The cognitivist explanation suggests that learning is a change in internal processes that need not necessarily be directly observable. The cognitivist regards changes in thinking or emotions or in a person's ability to respond to a particular situation as the key to learning (some cognitivists consider changes in overt learning behaviour as simply symptomatic or reflective of the ''real'' changes, which occur internally). The cognitivist perspective has been championed by such researchers and theorists as Jean Piaget, Robert Gagne, Jerome Bruner, Lev Vygotsky, and David Ausubel. Cognitive theories or field theories believe in the role of intervening variables' or 'intervening process 'in learning. Learning is not mere, mechanical connection between stimulus (S) and response (R) but the organism plays its part in controlling the stimulus provided by the 'S', and controls, directs and modifies the 'R' (reaction or response) as per its need, aspiration, attitude, ambitions, aptitude and its previous experiences. Thus mind as an intervening variable controls and directs the behaviour to some degree. We think, we know, we are conscious, we have purposes, we imagine, we believe, we will and thus we react. Thus field theorist make 'cognition' a significant aspect of this theory. It looks upon the learner as a dynamic energy system into an environment. Both the learner and the environment act and react.

BEHAVIOURISTS VIEWS ON LEARNING

The second theoretical perspective is Behaviourism, which equates learning with changes in observable behaviours. "Behaviourism" is a term coined by John B. Watson(1925). The behaviourist explanation suggests that learning is a change in the way people act overtly - observable behaviours and observable behaviour change, (some old school behaviourists have ruled out changes in thinking or emotions as being learned since we cannot see changes in thinking or emotions always.) The behaviourist perspective has been championed by noted researchers and theorists such as Ivan Pavlov, John Watson, E.L. Thorndike, and B.F.Skinner. The behaviourist theories are also known as connectionist theories or Stimulus ('S') Response ('R') theories. They believe in the bond of 'S' and 'R'. Learning takes place when there is stable connection between the 'S' and 'R'. Stimulus (S) is any change in the external energy which excites nervous system and brings a response (R). R is the end of S-R chain. Thus there are complex responses due to stimulus and they take the shape of behaviour. Circumstances under which it occurs are studied and theories are formulated. Here the connection between 'S' and 'R' may well be illustrated by giving the example of the connection made in telephone call.

NEOBEHAVIOURIST VIEWS ON LEARNING

A third perspective on the process of learning, some where in between the behaviourist and the cognitivist explanations of learning, is neobehaviourist theory, (some people call it "neocognitivist" perspective). Neobehaviourism offers an explanation of learning that emphasizes both changes in observable behaviour and in internal processes. In attempting to explain change in behaviour, the neobehaviorist looks at obvious evidence and the "less-than-obvious" motivations behind it. Neobehaviourism belives that change in behaviour are observable and influenced by internal processes.

SOCIOMETRY AND SOCIOGRAM

SOCIOMETRY

Sociometry is one of the methods of socio-psychology developed by *Jacob Levi Moreno* (1934). A useful working definition of sociometry is that it is a methodology for tracking the energy vectors of interpersonal relationships in a group. It shows the patterns of how individuals associate with each other when acting as a group toward a specified end or goal. Moreno himself defined sociometry as "the mathematical study of psychological properties of populations, the experimental technique of and the results obtained by application of quantitative methods" (Moreno, 1953, pp. 15-16). Sociometry is based on the fact that people make choices in interpersonal relationships. Sociometry can therefore be seen as a way to measure the relationships between people in a social setting. It is undertaken to reveal information about individuals in their relationship to groups, in the context of their mutual activities. In education, sociometric assessment is a valuable means by which the teacher can determine the relationships of individual students to other students within the class. It also allows the teacher to track the roles which students play in relation to one another within the classroom, identifying for example the popular children who are the centre of attention, and the neglected children who are overlooked by the majority of their peers. Since social atmosphere in the classroom is a decisive factor in the degree of learning and level of integration of each member of the class, a method of examining interpersonal interaction is a valuable tool for the teacher. The value of sociometry to a teacher lies is in the fact that it allows the teacher to develop a greater understanding of group behaviour within the class, so that he/she may operate more wisely in group management and curriculum development.

Moreno developed sociometrie methods to analyze interpersonal emotive relationships within a group. Since then, a number of sociometric studies have been conducted in settings including schools, the military, therapy groups, and business corporations. His methods can be used to identify informal leaders, social rankings and isolated individuals. For a work group, sociometry can be a powerful tool for reducing conflict and improving communication because it allows the group to see itself objectively and to analyze its own dynamics. It is also a powerful tool for assessing dynamics and development in groups devoted to counseling, therapy or training.

SOCIOGRAM

The results of sociometric evaluation can be represented in several ways. The most common method is a *sociogram,* which charts the interrelationships within the group. The, sociograms are the charts or tools used to find the sociometry of a social space, especially in the classroom environment they are a useful tool. Thus, 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, also knownln as a friendship chart, is a diagram that allows the teacher to analyze the social makeup of the class. It is a teacher-made device that is used to provide additional information regarding a student and how s/he interacts with peers. A sociogram is constructed after students answer a series of questions that illustrate the students' preferences about classmates. A sociogram is an important tool in the Social Discipline Model that allows a teacher to provide misbehaving students opportunities for social acceptance. As a result, the 'misbehaviour will no longer occur. It is a valuable tool for determining how his/her classmates view a student. Students respond to a teacher-provided direction such as "List the two classmates with whom you would most like to sit", "Write the name of the person with whom you would enjoy working on a project.", "If you were going on a vacation, which of your classmates would be nice to have along, and why?"

A sociogram's 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. The use of a sociogram is useful in highlighting the basic network of friendship patterns and sub- group organization within the larger group. This diagrammatic representation (e.g., classroom sociometry) also helps give a sense of the social status of individuals within the class, and an idea of the overall classroom climate. The findings can be used in arranging seating within the class, formulating the composition of work groups, and in identifying students who may require assistance in developing the social skills needed to be included actively .

MEASUREMENT OF CREATIVITY

Often professional schools such as arts schools, design school (National Institute of Designs; Fashion Technology), institute of mass communication and few others need to identity students who are specially creative- They devise their tests to make the process objective. Some others use objective test like Torrance's tests of creative thinking.

Torrance tests of creative thinking: The battery of tests is designed to assess divergent thinking by means of variety of verbal and nonverbal tasks-attempting to identify students' creativity in some areas like verbal creativity and artistic talent rather than mathematical problem solving or scientific inquiry.

Life histories: Another method used for identifying creative students is to examine their life histories to look for evidence of creative behaviour. Usually, students who have shown creativity in the past are most likely to continue behaving creatively in future also.

Three approaches that are mostly used to the study of creativity are

(1) studies of life style of creative people;

(2) assessment, using operational definitions of the products of creative activity;

(3) attempts to discover the process of creative activity.

Torrance et al (I960) has developed a number of innovative methods to identify creativity in the classroom. One such method involves presenting a child with a group of toys to play with. The child is asked to think and provide new ideas to improve the toy further, so that it makes more fun to play with it. The subject's responsiveness in the form of suggested ideas will serve as a basfis to judge his inventiveness, flexibility and constructiveness.

Another method to identify creative potential is Torrance's "Ask- and- Guess Test" The subject is presented with a picture and asked to think of as many questions as he possibly can, in order to understand better, the action or eve*it depicted in the picture. The subject's ability to formulate hypotheses is judged^ by the numbetpf guesses he makes to the possible cause of the event as also of the possible consequences of the event.

Torrance (1962), and some other researchers have identified behavioural characteristics of potentially creative persons. Some of the popular tests used in creativity researches are:

• Minnesota test of creative thinking (Guilford)
• Guilford's divergent thinking instrument -
• Wallach and Kogan creativity tests
• Torrance tests.of creative ability.

Torrance's test of creative thinking has two parts: flgufal-forms A and verbal form B. Figural form limits itself to: (i) figure or picture completion test, (ii) picture or figure completion test, (iii) parallel lines test. The verbal test employs (i) asking type, (ii) causes of guesses and its consequences type^(iii) product improvement type, (iv) unusual uses,type and (v) just suppose type.

Among the Indian adaptations, Baqer Mehdi's test and Passi's test of creativity are often used in researches. The commonly used dimensions are: fluency; flexibility; originality; unusual responses; elaboration ...etc.