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Physical and Motor Development

A child's ability to perform a physical task is based not only on certain maturational phenomena in the brain but also upon the muscle and skeletal systems. The concept of growth therefore involves a sequence of physiological events which results out of interacting influence of heredity and environment.

Physical growth is one of the more overt and impressive indication of children's development. It is necessary, therefore, to know the normative growth changes. Physical growth illustrates many of the principles of development. It has an important impact on motor and other aspects of development. An understanding of physical growth reveals various age level uniformities as well as orderliness. Growth in the form of age level changes can be characterised as qualitative, quantitative and sequential. Directly, it influences what an individual can not do and indirectly, the attitudes one has towards self and others.

PRINCIPLES OF PHYSICAL GROWTH AND MOTOR DEVELOPMENT

Physical growth

Physical growth is an indication of children's development. It follows cephalo-caudal and proximodistal sequences. Two basic principles concerning physical and motor development need mention here. These are : Cephalo-caudal, and Proximodistal. The cephalo-caudal principle refers to the fact that growth and motor development proceed in general, from head to the foot. At birth, the head of the child most closely approximates the adult size and the legs least closely approximate the adult size. The baby first lifts head from a surface when the baby is in prone position. Only later on, he moves arm' shoulder and abdominal muscles. After that comes the movement and lifting of the legs.

The second principle deals with proximodistal development that proceeds from the axis of the body outward to the periphery. The baby makes gross

movements of the shoulder to reach something and hands are used. During the later part of his first year the baby makes independent finger movements. These two principles have been explained in earlier section in more detail.

There is, however, a third principle which indicates progression from general to specific action patterns. The infant cries when pricked with a pin and there is reaction all over the body. But at 6 months he reacts much more specifically and adaptively. He may cry but he also withdraws effectively. Early grasping is clear example of gross or general behaviour and only after muscular development co-ordination and specific uses of finger muscles start.

Growth rates are affected by a number of environmental conditions such as dietary improvement, parental care, social-economic status, depressions etc. But heredity has more influence on physical growth.

Longitudinal studies have shown certain growth trends (Meredith, 1935).

(*a*) Growth is very rapid in the first three years of life.

(*b*) Growth continues at a diminishing rate until about two years before the beginning of pubescence.

(*c*) Before the advent of puberty, a significant increase in growth rate appears.

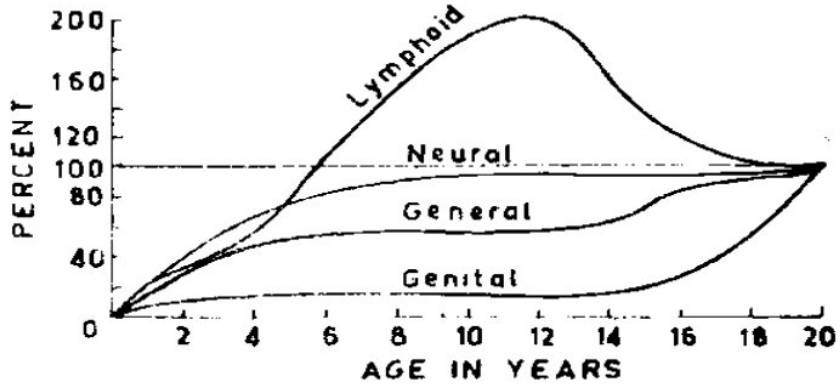
(*d*) Following puberty there is a continuous declaration of the rate of growth.

(*e*) The shape of the growth curve for both sexes is very similar but the timings of adolescent growth spurt tends to disturb the growth curves for boys and girls.

The body does not grow as a whole and in all direction at once. Growth changes in organic system can be divided into four types : Neural, Lymphoid, general (Skeletal and visceral) and Genital. During the prenatal period these four kinds of growth follow parallel development but they differ markedlly after birth. Neural growth is most rapid. Nearly 80 per cent of this is complete by age four after which it tapers off greatly. Lymphoid tissue reaches the adult level at age six, becomes double at age 12 and then declines until maturity. Genital growth occurs markedly after pubescence. Growth of Skeletal system is quite rapid at birth and at the time of pubescence, following a decline after each spurt of rise. Respiratory and vascular organs tend to grow at the same rate as bones and muscle tissues. Throughout the childhood, the heart grows more rapidly than the arterial system.

Important qualitative changes take place in the bones during the course of skeletal development. Degree of skeletal maturity is affected by hereditary

factors and is positively related to social class status. Girls are more mature in their skeletal development and the sex differences increases with age. Muscular growth parallels general body and skeletal growth throughout childhood and it shows a marked spurt at pubescence.



Nature of Types of Growth

Lymphoid Type	1. Thymus, lymph nodes and intestinal lymphoid masses.
Neural Type	2. Brain and its parts. Dura, Spinal cord optic apparatus, head dimensions.
General Type	3. Body as a whole, external dimensions (with exception of head and neck) Respiratory and digestive organs kidneys, pulmonary trunks, spleen, Musclature as a whole, skeleton as a whole, Blood volume.
Genital Type	4. Testes, Ovary, Epididymus, Uterine tube, prostate, prostatic urethra, Seminal resicles.

CHANGE IN BODY PROPORTIONS

Physical growth follows cephalo-caudal and proximodistal sequence during fetal period. At birth, the head and trunk are disproportionately large and extremities are disproportionately short. The rate of increase in head circumference is greater in males from birth through 15 months, and in females from the second through the twelfth year. After the first year the head grows more slowly and its proportion to the total body decreases progressively. The legs grow more rapidly than the trunk through childhood. Beginning with adolescence the reverse trend is seen.

CHANGES IN HEIGHT

Growth in height is not evenly distributed over the first twenty years of life. At birth the height of the baby is between 17 and 21 inches. The growth rate is rapid during the first two years. At 4 months, the child measures 23 to 24 inches. At 8 months, 26 to 28 inches and at one year 28 to 30 inches. At 2 years, it is 32 to 34 inches tall. Yearly increments in stature are small and relatively constant untill the second growth spurt in pre—and early adolescence. Boys are slightly taller than girls until the age of 11 after which there is a reversal of the trend upto 15 and again boys regain their superiority. Height is normally distributed and mostly genetic. The adequacy of nutrition plays an important role in growth of height within genetic limitations. Deficit in protein calorie malnutrition affects height adversely. Because of genetic factors skeletal growth occurs more uniformly throughout the growth span. A child who is tall or short at birth also tends to be similarly tall or short at age six and nineteen. Change in height is a significant inidicator of physical growth.

CHANGES IN BODY WEIGHT

The average weight of the new born baby is between 6 to 8 pounds. Baby weight is also an index of growth. It is also an index of nutritional status. Body weight depends upon age, sex, physical and pubescent status. Trend of growth curve of weight parallels that for height but the rate is rapid in case weight. The child ordinarily doubles his birth weight in six months or less but requires four years to double his height.

Boys weigh more than girls during infancy and childhood. A reversal occurs at the ages of ten and thirteen during the female growth spurt and another reversal again favouring boys at age 13. Weight is a normally distributed trait but is less affected by genetic factors compared to height. Weight is much more influenced by exercise, disease, socio-emotional adjustment, and nutrition. Certain anatomical changes are seen as the child advances in age from birth *i.e.* changes in number of teeth, position, pigmentation, texture, ossification or hardening of bones.

For example, the teeth begin to form in the jaw from the 3rd prenatal month. The last tooth appears between 21 to 25 years of age. During this period two sets of teeth appear : the baby teeth and the permanent teeth. Appearance time of the baby teeth depends upon health, nutrition, race, sex, and related factors. By age 9 months children have generally 2 to 3 teeth. Girls get their teeth earlier than do boys. But eventually boys are ahead of girls. Around 6 years of age the child has 1 to 2 permanent teeth. He has 10 or 11 teeth by age 8 years, 14 to 16 age 10 years, 24 to 26 by age 12 years, 27 to 28 by age 13 years. Last 4 teeth appear by 25 years of age. Girls shed their temporary teeth and get permanent teeth earlier than boys.

Skeletal and muscular growth provide the substrata for the development of strength and motor skill. A correlation exists between height, weight and complex motor skills.

NERVOUS SYSTEM

The nervous system grows very rapidly before birth and in the first 3 to 4 years after birth. After this, the rate of growth is relatively slow. At birth brain, weight is about 1/8th of the body weight, at 10 years 1/18th, at 15 years 1/30th and at maturity 1/40th. It grows more during the first 2 years of life. The growth of the brain affects all aspects of child's development. Physical growth occurs in orderly and predictable cycles for different age groups and different parts of the body.

MOTOR DEVELOPMENT

A child's motor development, his development of strength, coordination, speed, precision in the use of his arms, legs and other body muscles in an important feature in his total development. The child satisfies most of his aspiration with the help of motor development. It does influence his social and emotional adjustment.

The new born baby is helpless and lacks volitional control. Motor ability of a child helps him to cope with the environment. It helps the child to get a status in the home, school, peer group and helps him to attain volitional independence. Motor activity is an important outlet for emotional expression *e.g.* fear, fright, rage, etc. as well as a source of self expression and satisfaction, social participation, and adjustment. Boys with fewer physical abilities tend to enjoy low social prestige in the group.

The child passes through various relatively uniform developmental sequences in the acquisition of postural, locomotor and prehensible functions following the cephalo-caudal and proximodistal sequences. For example, the development of cortical control over eye limb co-ordination preceeds in a cephalo-caudal trend. Proximodistal development is illustrated by earlier development of eye-palm co-ordination as compared to eye-finger co-ordination.

The sequence of motor development from birth to 15 months
The Average child develops his motor skills on this schedule.

POSTURAL-LOCOMOTOR DEVELOPMENT

This is relatively uniform for all children despite individual difference in age of occurrence. The following is a brief time table of the more salient landmarks and their median age of occurrence.

Lifting the chin form prone position	3 weeks
Raising the head and chest from the prone position	9 weeks
Sitting alone for 1 minute	31 weeks
Crawling	37 weeks
Standing, holding on	42 weeks
Creeping	44 weeks
Standing alone	62 weeks
Walking alone	64 weeks

Overall physical growth occurs at their maximum during the first 3 years of life. As brain cells develop children reach a state of readiness. Motor functions also develop accordingly.

DEVELOPMENT OF PREHENSION

Prehension is the ability to group objects the fingers and thumb. The neonate is born with a grasp reflex but this grasping is different from the cortically controlled individual movements of fingers and thumbs that produce prehension. Grasping as a reflex disappears by the 4th month and only after that prehension appears following a sequential pattern (White, 1971). The eye-hand co-ordination increase after that. Prehension abilities actually develop after one year.

Prehension involves co-ordination of relatively distinct senorimotor systems such as eye, arm, hand, and the tactual motor systems of the hands. They occur at various times before final co-ordination. At 2 months of age object-oriented movements are observed by babies. During the third and 4th months of age bilateral arm approaches increase. Grasping appears at 4 months of age. At about 6 months of age, the infant uses palm and fingers to grasp objects but co-ordinated grasping occurs at age 36 weeks. This development is discontinuous functionally but one can notice progressive improvement in aim, precision, and smoothness of an activity.

Consistent preference for a particular hand develops slowly. By the end of second year about 85 per cent of all children are predominantly right handed. Males show a slightly higher percentage of left handedness than females.

PRESCHOOL PERIOD

After rudimentary locomotion and prehension are established the child acquires a repertoire of other motor skills. During late infancy and preschool years he learns to walk backwards and jump, hit, skip etc. Two and three year old children also button and unbutton and begin to undress themselves and a year later they are capable of dressing themselves. Between 21 to 24 months the child merely pushes and pulls object repeatedly. Shortly thereafter he can concentrate on separate part and acquires muscular control. Between 24 to 48 months complex skills are practised and integrated. Writing skills are also developed gradually. At age 5 to 6 year he is able to make recognisable letters.

Individual difference in the rate of development are largely determined by genetic factors. Extreme emotional deprivation has been found to retard the rate of early motor development. Motor skills are also influenced by practice and motive incentive conditions. Provision for environmental stimulation encourage acceleration of motor behaviour. Maturation, however, plays an important part in the learning of ontogenetic skills. The child will not gain anything unless the neuromuscular growth is equal to the demands of the task.

Individual differences in the acquisition of ontogenetic motor skills are determined by genetic factors, by motivational emotional, and personality factors and opportunities for practice. First borns have higher motor performance than subsequent children, possibly because of more maternal care and time spent with the first child.

ELEMENTARY SCHOOL YEARS

During school years changes are generally seen in strength, speed, versatility, precision and smoothness of execution. Progressive gains are registered in the speed of running, accuracy amd distance throwing, height and distance of jumping, and balance. Motor reaction decrease with age. Fine motor skills and sensory skills improve during this period. Improvement in writing occurs with good slant alignment and proportion before the age of nine.

Motor ability tends to be relatively specific in nature. Speed and strength are independent factors. Wherever there is any relationship, it tends to decrease with increasing age. Boys are stronger than girls at all ages but the difference in strength first becomes significant for practical purposes during adolescence. Throughout childhood boys are superior to girls in most gross motor skills but in elementary schools girls have better balance but this is reversed in later years. Boy's reaction time is faster than girl's and they are a year in advance. Sex difference in motor skills reflect cultural expectations

and sex typing of games. During adolescence there exists a greater sex difference. Children from overprotecting homes tend to be physically apprehensive and relatively retarded in gross motor development. Difficulties in motor functioning are also associated with low frustration tolerance and anxiety.

From the above discussions a few generalisations can be made. Motor development depends upon both maturation and learning. In fact, learning skills cannot occur if the child is not maturationally ready. Of course, maturation itself does not produce learning of skills to occur. Motor development follows a predictable pattern. This predictability is explained in terms of Cephalo-caudal and proximodistal sequence. And finally there is individual difference in the rate of motor development. Skills or motor development occur by using trial and error learning, imitation and training. Sex difference in motor development is reduced to minimum if boys and girls are given same training, scope for practice, incentives and encouragement.

FACTORS ASSOCIATED WITH PHYSICAL AND MOTOR DEVELOPMENT

The sex glands in the body influence physical and motor development. Sex glands produce hormones called androgen and ostrogen. Androgen is responsible for male characteristics and ostrogen is responsible for female characteristics. Physical development in boys and girls are affected by the hormones.

Physical characteristics are more striking in identical twins than in fraternal twins. In other words, heredity has a greater effect on the physical and motor development *e.g.* size, strength, appearance, metabolism etc.

There are also certain prenatal conditions such as maternal malnutrition, infections of the mother, disease, birth injury, intoxication, X-rays, and emotional trauma during pregnancy including low SES which vitally affect the development. For example, deficiency and over dose vitamin A in mother during pregnancy leads to congenital blindness in children. Defects are seen in children if the mother suffers from infectious diseases *e.g.* Germen Measles at the early stage; of pregnancy. There are physical as well as mental abnormalities and deficiencies in children born from such mothers. Birth injury, too frequent X-ray exposure of the mother during pregnancy, and emotional tensions damage physical as well as mental development of fetus.

SES or Socio-economic status is a general factor whose effects are seen in development of children, physical or mental because these are directly related to nutrition, health and early stimulation.

Nutrition in early childhood directly influences, body growth, static control and physical ability. Children who suffer from protein deficiency are

stunted and are retarded in development. Porper nourishment is necessary for good development. Sex of the child is related to physical and motor development. Boys are superior to girls in most of the motor skills but girls are superior in fine muscular co-ordination. This appears more due to cultural training and labelling than due to basic genetic differences. Practice and motivation to undertake physical and motor activities or exercises do constitute salient factors influencing development of the skills. More stimulating environments, therefore becomes a part of physical and motor skill development.

IMPLICATIONS

There are certain Psychological and Educational implications of physical and motor development. Physical growth has effects on the self-image of the child. It helps to satisfy his needs. Staunted growth sometimes creates feeling of organic inferiority. Any physical inadequacy has similar adverse effects. It is for the teacher to lead all other toward increased self-acceptance. Self-acceptance is related to acceptance of others. Social and emotional development are greatly facilitated by physical growth, attractiveness, size and strength. It has a total effect on personality development.

The elementary school teacher is concerned with motor co-ordination of children to start with. The relationships between gross motor co-ordination and height, weight etc. are low but positive. Certain skills *e.g.* running, jumping, throwing, catching, striking and kicking are basic to performance in many motor activities for grade four, five and six.

It is for the teachers to know that simple skills and gross motor development depend upon maturation and general practice but for five muscular co-ordination direct training is required *e.g.* embroidary, drawing, precision, movement. Lilly (1909) did develop some 60 lessons to increase the motor development of low SES children and found quite impressive findings. Psychomotor ability can vary in the following way with regard to specific skills. This is concerned with manipulative skills involving muscular or motor responses requiring neuromuscular co-ordination. The five levels of the Psychomotor Domain from the simplest to the most complex are as follows :

1. **Imitation.** Copy of an observed act but lacking neuromuscular co-ordination.

2. **Manipulation.** Copy of an observed act usually following instruction, displaying some neuromuscular co-ordination.

3. **Articulation.** Competent performance of a physical act involving co-ordination of a series of other acts.

4. **Precision.** Performance of a physical act with accuracy, proportion and exactness.

5. **Naturalization.** Routinisation of physical act to the extent that it becomes an automatic, spontaneous and ultimately a subconscious response.

This system of classification provides a basis for checking that a given set of objectives cover an appropriate breadth of categories at suitable levels of achievement.

Motor abilities are specific in nature. A student who is a good runner may not be a good jumper and vice versa. The co-ordination between various motor abilities are less. The child's interest and experience contribute highly to the development of motor abilities. Slow learners and low SES children are alright in gross motor development but they are slow and retarded in finer skills of speed, movement, static and dynamic precision, flexibility, and co-ordination. However, they do profit considerably from training of these skills. Like physical growth, it has also adverse affect on self-concept if the child lacks in adequate motor control and proficiency. The child's play interests are also contingent upon motor development. Children should be encouraged to develop interest in motor development. Unfortunately in school, the contrary things happen. Only those who are proficient in games and sports are encouraged to undertake such activities whereas those who need to participate in athletic activities for their development are ignored.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. What are the principles of physical growth and motor development ?
2. Describe the milestones of physical growth ?
3. Describe the motor development during elementary school years. What can be done to accelerate development ?
4. What are the various types of physical growth ? What are their characteristics ?
5. What factors are associated with physical growth and motor development ?
6. What factors are associated with physical motor development ?

Write notes on the following questions in 50 words each :

1. Development of prehension
2. Locomotor functions
3. Height
4. Weight
5. Prehension
6. Factors associated with physical growth
7. Factors associated with mental growth
8. Psychomotor skills
9. Preschool period

10. Postural development.

Write whether the following statements are True or False :

1. Prehension is the ability to group objects between the fingers and thumb.
2. Cephalo-caudal indicates progression from general to specific.
3. Proximodistal development proceeds from axis of the body outward to the periphery.
4. Growth is very rapid with first three years of life.
5. Growth continues at a diminishing rate until about two years before the beginning of pubescence.

Fill in the blanks :

1. The shape of growth curve for both sexes is very.....
2. The timings of adolescent growth.....tends to disturb the growth curves of boys and girls.
3. There are.....types of growth.
4. The rate of increase in head circumference is.....in males from birth to 15 months.
5. The girls get their teeth.....than boys.
6. The nervous system growth very rapidly before birth and in the.....month after birth.
7. Before the advent of.....a significant increase in growth appears.
8. Sex difference is seen more during.....period.
9. Boy's reaction time is.....than girls.
10. Learning skills do occur in children unless they are.....

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Emotional Development

Emotions add zest to life and living and at times sorrow and grief. Emotions are of special importance because they organise behaviour, energize behaviour but when acute they also disrupt behaviour. They are responsible for self-actualisation and are integral part of the personality. Emotions are generally defined as a stirredup state of the organism, involving the organism as a whole. They are conscious processes involving bodily changes and they arise out of variety of causes. Neurophysiologically emotions are under the control of the autonomic nervous system which is relatively independent of voluntary control.

Emotions play an important role in the life of children. It adds to the pleasure of everyday experience, serves as a motive to action and determines finally the characteristic pattern of adjustment to life. Every child is born with potentialities for both pleasant and unpleasant emotions. Parents and teachers ought to be aware of these properties and provide happy living at least during the early years of life.

DEVELOPMENT OF EMOTION

Each child has the ability to respond emotionally. The first sign of emotional behaviour in the new born infant is general excitement due to intense stimulation. Further, child's emotions are first diffused and not very clearcut. As such, for a few months, specific emotional patterns are not recognised and identified. .

Bridges (1932) has made the most systematic investigation about the development of emotional pattern following the state of general excitement. By 3 months of age the general excitement becomes differentiated into distress and delight. Distress further becomes more specific and three basic emotions appear : fear, anger, disgust. This happens around the age of 6 months. Around one year, delight gives rise to elation and affection. Joy appears a little after 1.5 years of development. Affection becomes further

differentiated to children and adults from the age of 1.5 year. Jealousy is seen around 15 months. In short, even before the child becomes one year old, his emotional expressions are recognizably similar to that of adults with regard to general pattern. However, the age at which differentiation of the various emotions takes place, varies somewhat from child to child.

Birth	*3 months*	*6 months*	*12 months*	*18 months*	*24 months*
			For children		
				For adults	
		Affection			
		Elation			
	Delight			Joy	
Excitement					
	Distress				
	Anger				
			Jealousy		
	Disgust				
		Fear			

With age emotional responses become less diffuse and random. For example, at first the child expresses displeasure by screaming, crying but later his reactions include resisting, throwing objects, stiffening of the body, turning away, riding himself using verbal expressions etc. As the child becomes older and older linguistic responses increase and motor responses decrease especially in fear and anger provoking situation. Besides, the course of development of different types of emotion is also different.

Robert Bridges

Differences in health and environment produce individual variations in the frequency, intensity, and duration of emotions. For example, a baby who is kept in calm atmosphere and whose needs are solved most promptly and consistently is less likely to suffer from nervous tension as he grows older than the one who lives in a noisy and exciting environment and who must cry before any of his needs are fulfilled.

MATURATION AND LEARNING

Although emotional expressions are seen right from birth, yet emotional development is a joint functions of maturation and learning.

Experimental studies regarding removal of the cortex show that maturation of the frontal lobe is responsible for matured emotional behaviours. With age there is increase in intellectual development which enables the child to perceive meaning and become responsive to various stimuli. Development of endocrine glands is likewise essential to the development of a mature level of emotional behaviour. In case of adrenal gland which plays a dominant role in emotion, it has been found that there is a rapid decrease in size after birth. Upto 5 years it is rapid, slow from 5 to 11 and more upto the age of 16. Until the growth in size has increased, there is less adrenalin. This has a marked influence on the emotional states in childhood.

From the study of Goodenough (1932) the role of maturation becomes more clear. She found a blind and a deaf girl display the same emotions as normal children despite the restrictions on their ability to learn.

Conditioning and imitation do influence the development of emotional patterns in childhood. The famous experiment of Watson on Albert showed how a baby learns fear. When Albert, was nine months old, he was shown various objects namely, rabbit, dog, cotton wool and white rats. In no instance he displayed fear. Later he was conditioned to develop fear to words the white rat in the following manner. The rat was presented to him and the moment he reached for it, a loud noise was sounded behind his head. This resulted in a startled response on Albert's part and he fell forward on his face. After 5 more continuous presentations of noise and the rat, the rat was presented alone. Albert cried, withdrew and showed typical fear response.

Children acquire many irrational fears in this way. Conditioning of fears occurs easily and quickly during the early years of life because the young child lacks reasoning ability and experience. Conditional fears or emotion also spread to similar people, objects, situations with which it was originally associated. Albert's fear for the rat has also spread to the rabbit, the dog, the cotton wool etc., for which he was not at all afraid. A child's preference for the mother rather than the father is often due to the fact that the mother is more warm and understanding than the father. Similarly he may actually dislike a sibling who teases or ignores him.

The child also demonstrates a kind of emotional response just by imitating others. Babies less than 4 weeks old have been found to refuse breast if the mother was tense. Older babies the sometimes resist food from a mother who is tense but eat well if fed by a relaxed person. Babies who are

in close contact with some persons can imitate their emotional responses quite easily. Imitation also permits development of healthy emotions.

CHARACTERISTICS OF CHILDHOOD EMOTION

Individual differences are inevitable because of differences in maturational level and learning opportunities. However, there are certain characteristic features of children's emotions.

1. **Children's emotions are brief.** The young child's emotion lasts only a few minutes and then end abruptly. He expresses his emotion in overt actions.

2. **Children's emotions are intense.** The child reacts very strongly to even minor emotional situations. There is no gradation of emotion with regard to intensity. When they feel happy they feel it to their maximum and we can observe it from the various facial changes.

3. **Children's emotions are transitory.** The child shifts his emotion from one type to another vary quickly *i.e.* from smile to anger, jealousy to affection etc. This happens because he has a short attention span. When he becomes adult his emotions do not change that often.

4. **Children's emotions appear frequently but as the child grows older he learns to adjust to emotion arousing situations and react to them is socially accepted ways.** It happens because the children do not have a sense of disapproval or punishment. They feel very delicate to show particular type of emotion quite frequently.

5. **Children's emotional responses are different.** For example, one child will turn out of the room when he is frightened, another will hide behind his mother, another may stand and cry. This happens because of the influences of learning and environment. From facial expressions and visceral changes we can observe what a child has experienced.

6. **Emotions can be identified from symptoms of behaviour.** Children express their emotions so overtly that it is easy to konw whether a child is angry, afraid or happy. Adult emotions are disguised.

7. **Emotions change in strength.** Some emotions are storng in early childhood. Later on they disappear. Others are very mild in early childhood but increase in strength in late childhood. For example, timidity decreases with age, so also does temper tantrum.

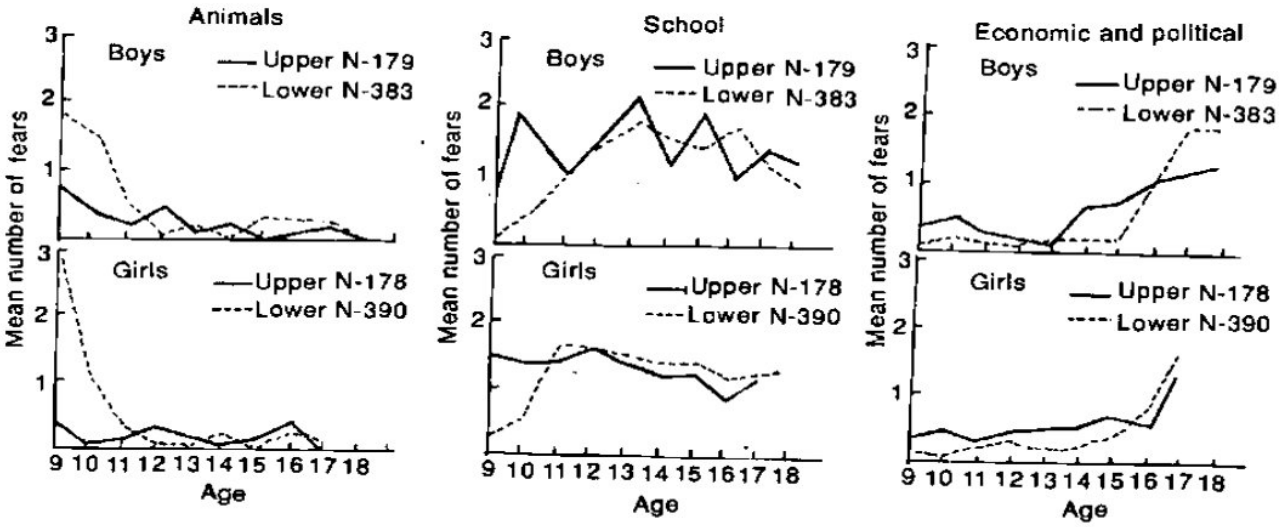
8. **Patterns of emotional expressions change.** In early childhood the child does whatever he wants but as he grows older he controls the emotional expressions due to parental instructions or social pressures. Earlier he does not consider whether this will be harmful to himself or to others.

COMMON EMOTIONAL PATTERNS

FEAR

Before the end of 1st year of life fear producing situations begin to affect him. Fears are learned. Some are learned by direct associations or experiences with stimuli that naturally arouse fear *i.e.* loud or harsh noise. Few fears are learned by imitation of the behaviour of parents, siblings and at other times they develop as after effects of certain experiences such as fear for doctors, dentists, hospitals, large animals. Fears also arise out of imagined experiences.

Fears depend upon certain ecological factors as well as causative factors. The sex of the child, age, soical status, intellectual development all effect the development or occurrence of fear. It reaches a peak at the age of and again at the age of 11. During early peak period they arise mainly due to situationally determined factors namely people, animals, objects, fear for darkness, etc. During the second peak, the cause is purely anxiety or worry. There is rather gradual change from specific to general fears. And as the children grow older, there are sex differences in fears.



Fears and worries as related to chronological age, sex, and socio-economic status.

Most common fears of babyhood are because of loud noises, animals, strange persons, places and objects, dark rooms, high places; sudden displacement, being alone, and pain. Young children are afraid of more things than either the babies or the older children. A few types of fear

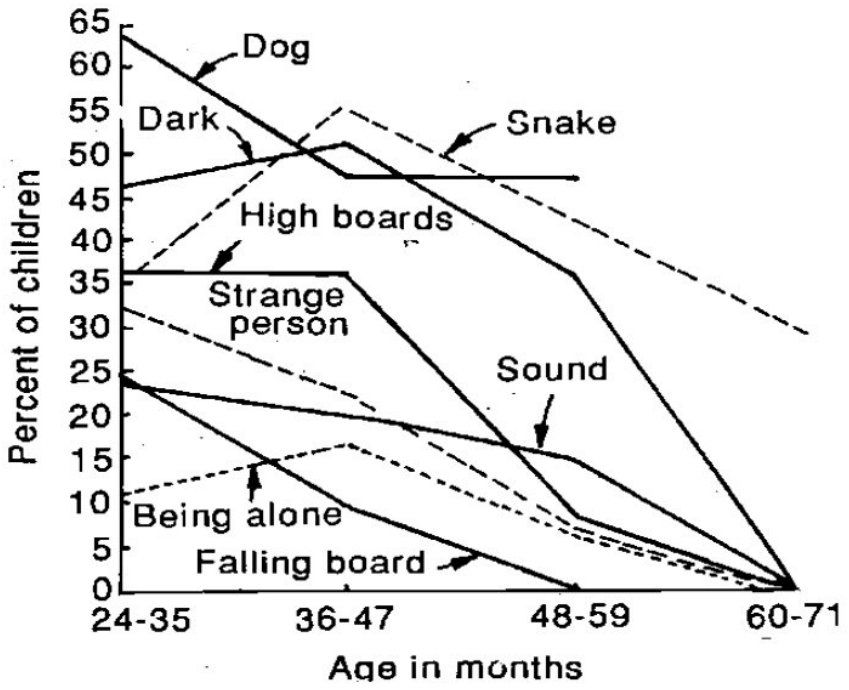
decrease with age but imaginary fears increase with age *i.e.* fear for ghosts, robbers, skeletons and being alone etc. There is a definite and consistent decrease in fear emotions after the pre-school period. For example for 3 years old the mean is 5.5 as against 3.2 for the six years old. When children enter schools, the fears are due to characters recalled from stories, movies, comics, ridicules etc. On the whole girls show more fears than the boys.

Fears also arise in early infancy because of organic pain, loss of support, sudden change in visual presentations, deep voices, masked faces, and strange faces, irritated voice of animals, barking of dogs and fear for darkness, fear for strange persons, sight of dogs, sight of snakes appear after age 11-2 to 2 years. Imagined fear appears later on in life.

The very idea of fear infact implies incompetence and fear become more if feeling of incompetence is greater. Over protected and insecured children are more afraid. Overt expression of fear become subdued with age especially in boys.

The causes arousing fear also change with age. The infant is apparently afraid of any intense and sudden stimuli. In later childhood cause of fear becomes imaginary, guilt conscience, fear of examinations, loss of security etc.

This figure indicates the percentage of children at various age levels who should fear response to several situations originally observed by Jersild, well known for the contributions to emotion.



The percentage of children at various age levels

The child's fear are many and varied, most of these the child has learned. Many fears arise out of stimulus generalisation. These are also

disruptive fears which cause people to faint or to stand frozen in horror. Fear promotes later failure. The child in the classroom avoids showing his ignorance in not reciting becomes as a result progressively more inadequate. Teachers need to be alert for these situations which progressively become disgustive and self destructive. Kingsley and Garry (1957) have stated that "The great bulk of the fears that torment children and adults are needless and detrimental. Fear is the enemy of the mental and bodily health. It destroys courage and self-confidence, and undermines morale. It weakens and supresses purposive action, distorts perspective, and inhibits clear thinking. It lessons the chances for success, and is often the cause of mediocrity and failure.

Adults very often use fear as a means of securing child's good behaviour. Such a step is definitely harmful. Childrens are often disciplined through fear. But the positive approach of inculcating respects for parents, policemen, teachers would benefit all concerned.

For many children school itself is a fear producing situation *i.e.*, fear of criticism, fear of rejection by the teacher and/or the fear of the group, fear of punishment, fear of embarashment and fear of examinations, fear of ridicule. Because of fear many children cease to do homework.

The best way is to build security and confidence so that child feels secure. Removing fear is generally slow and difficult. Verbal reassurance and explanation may be helpful but emotions are not matter of logic. Imitation is a better process of learning. Parents and teachers therefore are to be calm and confident. Social facilitation are more effective than any of the techniques.

Fear can be eliminated by using certain techniques. In school, a child's competence can be enhances by using a graded approach. For example, if the child is afraid of reciting let him first respond with unison with others, or be called upon to speak only when the teacher is sure that he has the answer. Success experience can be built through gradual shaping and successive approximations in the words of Skinner.

Table 1. Situations which Cause Fear

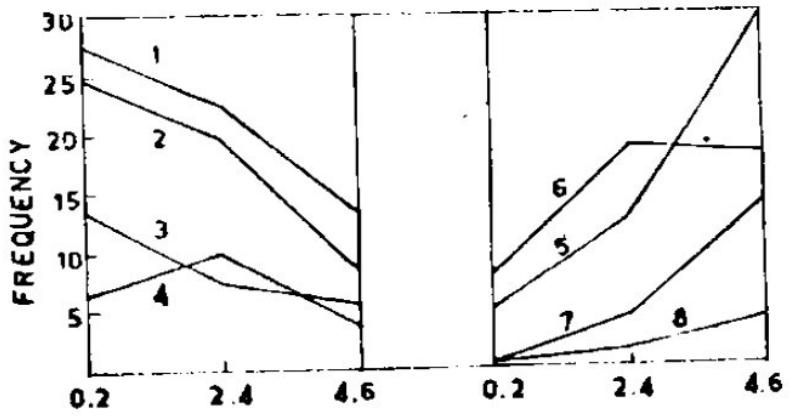
	Situations	*First Appearance*
1.	Organic pain	From the time of birth
2.	Loss of support	-do-
3.	Sudden loud noise	-do-
4.	Sudden changes in the visual persentation	End of second month
5.	Deep voices, masked faces and strange faces	Seventh month

6.	New and odd sounds like the imitations of the voices of animals	Eighth month
7.	Barking dogs	Ninth month
8.	Fear of persons in black dress even when they are friendly	Seventeenth and eighteenth months
9.	Carried close by sea	Twenty first month
10.	Sight of dogs	Second year
11.	Sight of snakes	above two years (Jones)

Source : Child Development (NCERT)

A characteristic of all fear stimuli is their suddenness and unexpected occurrences as well as unfamiliar or novel objects. Fear is more harmful to a child. Hence, it should be prevented.

CAUSES & FREQUENCY OF FEAR AT DIFFERENT AGES (JERSILD, 1960)



1. Noise
2. Strange objects
3. Falling from high place
4. Sudden movement
5. Imaginary cause
6. Animals
7. Threat of danger
8. Fear in others

Some common techniques applied to reduce and or prevent occurrence of fear among children are :

1. Diverting the attention of the child from something he might fear.
2. Reconditioning the child from fearful object.
3. Helping the child or creating an opportunity for the child to be acquainted with unfamiliar objects.
4. The acquaintance must be gradual and free from coercion or compulsion.
5. Explaining and assuring the child about the harmlessness of the objects or the individual.
6. Teaching some reactions to actual fearful situations.

ANXIETY

Anxiety is a painful uneasiness of mind concerning apprehended ill or

danger. Anxiety is an internal fear. There are many theories of anxiety and many concepts of anxiety as well. Our concern is anxiety as a painful state in the child's mind arising out of either imagined danger or out of chronic frustrations for which he does not do well in school and social activities. Anxiety may arise out of conflicts, criticisms, denial, or any such factor, but it is a kind of fear that is often aroused and gradually it is learned and sustained to form a trait in the child or it may refer to a particular state and disappear often. In any case, a mild anxiety is desirable for healthy adjustment, in learning, in problem solving etc. but acute anxiety will have disruptive effects on behaviour. Hence, it has been repeatedly discussed that the classroom atmosphere should not create anxiety or anxiety proneness in the individual pupils considered both from the broader aim and specific aim of educational experiences and anxiety appear quite frequently for loss of affection and security in early childhood and during adolescent period various other anxiety and worries relating to sex activities appear. It is for the school to monitor such worries and help to reduce their occurrence by substitute forms, in cultural activities, in games and in social activities of any sort. Anxiety can be reduced greatly by discussion, self analysis and relaxation therapy.

ANGER

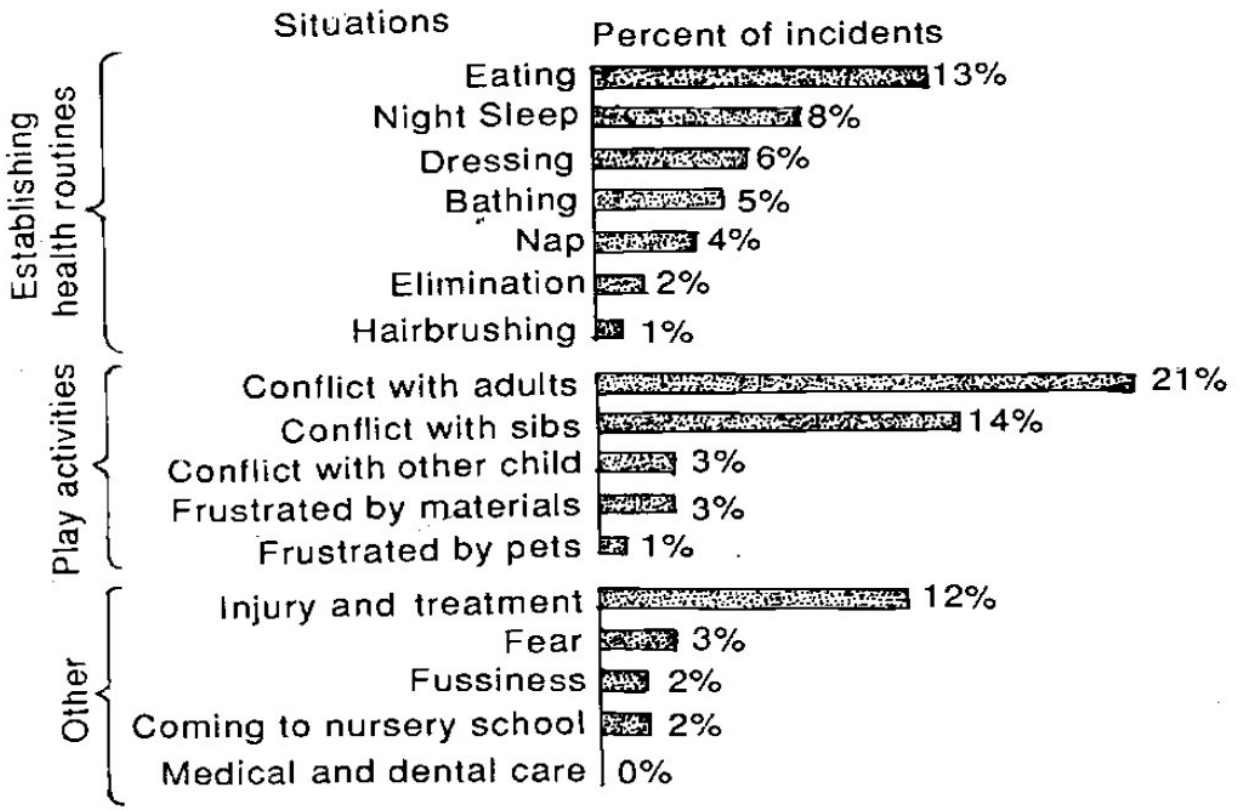
Anger is a more frequent emotional response in childhood that fear. Anger reactions increase with age whereas fear decreases. The child gradually realizes that there is no need for fear, whereas anger is the best way to fulfil his desires and get the attention of others.

The environments of home and that of the school play an important role in determining the intensity and frequency of a child's anger. Tempertantrums are frequent in the presence of guests. Boys at every age are more angry than girls. Children who are more subjected to an autocratic child rearing practice tend to show more of anger than do the children who are brought up in a permissive atmosphere.

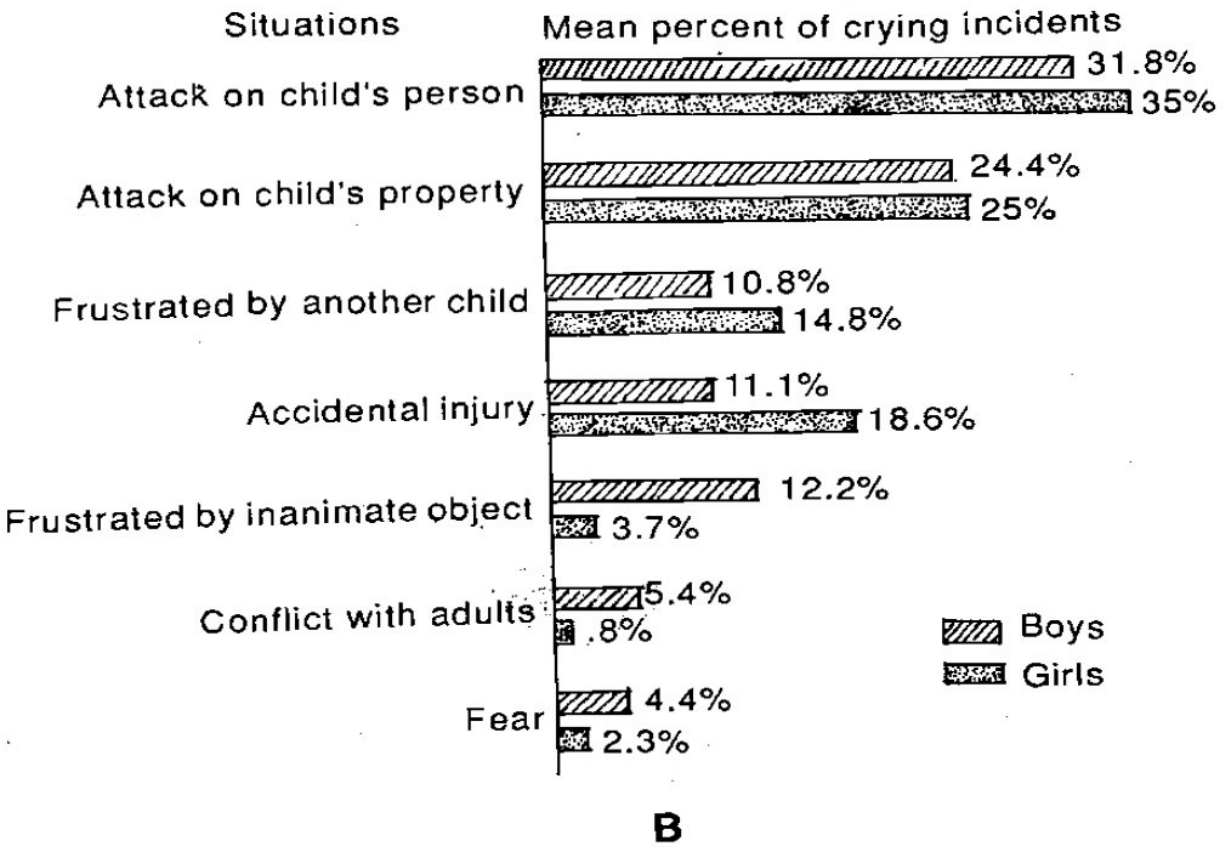
Robert Bridges has developed the trends in expression of anger. The Diagrams which are based on situation causing crying among nursery school children at home and at school.

In general, situations which rise to give anger are those involving body restraint, interference with the childs movement : blocking of activities already in progress; denial of wishes, plans, and purposes; the child's thwarting wants to carry out intentions.

Children may become angry for various reasons. From the point of view of development, children under one year become angry when there are disturbing movements, minor physical discomforts, delayed feeding, or they are being put to bed forcibly. They seek attention drawing behaviour, or they



A



B

The immediate situations causing crying among preschool-aged children (A) in the home and (B) in the nursery.

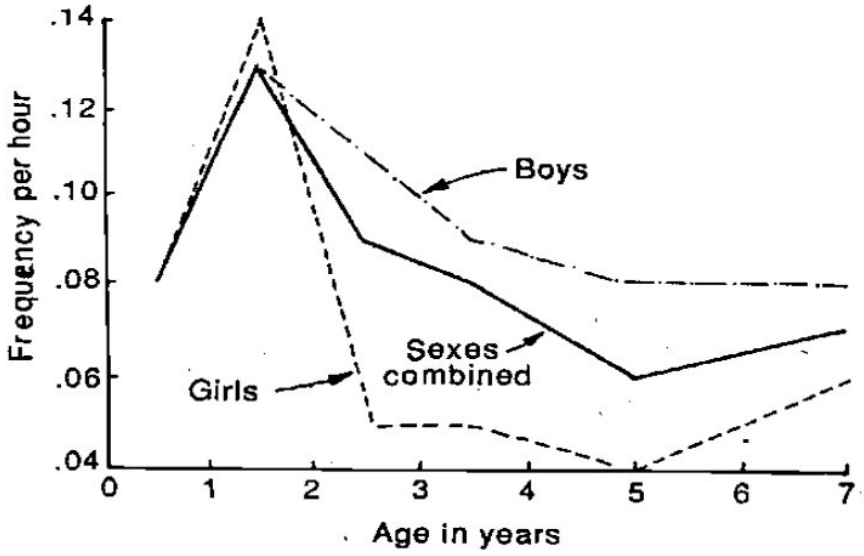
are not given food whenever they want. Between the first and second year, the causes of anger include : not permitted to do certain activities as desired, adults try to help children forcibly, inability to express desire followed by asking the child to eat when he is to play, strict toilet training, punishment, frustration during the 3rd year of development. During 4th year and onwards when the child's activities are prevented by others, the child is unable to share possession, desires to posses someone by else's things, disagreement with play-mates, refusal of help adults, refusal to do small tasks, objections to some particular way of dressing etc. the child expresses anger. Later on criticisms or denial of ego by others, insult to self or conscience becomes the causes of anger.

Table 2. Situations Provocative of Anger

Sl. No.	*Situations*	*First Appearance*	*Peak Frequency*
1.	Hampering movements	Form the moment of birth	Under one year
2.	Minor physical discomforts (wet clothes etc.)	Under one year	-do-
3.	Impatience at having to wait for feeding	-do-	-do-
4.	Thwarting of movements of withdrawal	Under one year	Under one year
5.	Being put to bed forcibly	-do-	-do-
6.	Objections to specific kinds of food	-do-	-do-
7.	A general desire for attention	-do-	-do-
8.	Desire for food between meals	-do-	-do-
9.	Not permitted to carry out desired activity	One year one year 11 months	One year-one year 11 months
10.	Adult assistance forced upon the child	-do-	-do-
11.	Inability to make desires understood	-do-	-do-
12.	Forcibly taken to meals when the child wished to play	One year-one year 11 months	Two years-two years 11 months
13.	Routine physical habits interfered with	-do-	-do-
14.	Resentment at punishment	-do-	-do-
15.	Resentment at having to take logical consequences of one's own act	One year-one year 11 months	-do-
16.	Unsuccessful attempt to manipulate some object	-do-	Two-years-Two years 11 months
17.	Mother's inpatience at child's slowness	Two years-Two years 11 months	-do-
18.	Desire to share in the activity of others prevented	One year-one	Three years-three years 11 months
19.	Unwillingness to share possessions	One year-one year 11 months	-do-
20.	Desire for someone else's possessions	-do-	-do-
21.	Disagreements with playmates	Under one year	Three years and above
22.	Refusal of adult help to perform activities	One year-one year 11 months	Four years and above
23.	Refusal to perform some small task	Two years-Two year 11 months	Four years and above
24.	Objection to some particular article of clothing	One year-one year 11 months	-do-

Very young babies respond with anger to mild discomforts, interferences with physical activities, activities connected with physical care and dressing. If his possessions are interfered with or he does not get as much attention as he wants to get, has gets irritated and angry. Preschool children get angry when their toys do not work. Older children get angry when teased or ridiculed for no fault of theirs.

The general reaction in such a situation is anger or temper tantrum, which decreases with age and at first 3 years it remains at 68 percent level for boys and at 62 percent for girls. In anger, the baby cries, screams, kicks, arches his back, struggles and twists his whole body. The peak in these responses come around age 3 but the decline in frequency and intensity is slower for boys than for girls. Older children use verbal attacks when they get angry and replace bodily attacks. He may refuse doing some tasks, or does these as badly as possible when he is angry. In general, boys are more aggressive than girls in early childhood.



The frequency of anger outbursts at various levels.

Anger ranges from mild stage to annoyance, irritation, hatred, resentment and jealousy. It results out of a blow to one's self esteem or interferences with its purposes, threat to one's sense of values. Whether an individual child will be angry or not depends upon his past experiences nature of situations, his sense of security, his capabilities, his competence etc. There are some children who are anger prone. They have faced cumulative frustrations since quite early in life. In some cases teachers might project their own behaviour on children and induce anger.

There is a change in the causation of anger with age and as well as change in the reaction to angry situations. Goodenough (1931) found that

temper tantrum reached a peak around the third year after which it declined in frequency and intensity. The use of language provides the child with a new tool to express his anger more subtly. In school the child expresses his anger by being noisy, disrupting the class, engaging in passive sabotage, asking questions just to embarrash teachers and annoying him. Sears has shown if the teachers try to suppress aggression through counter agression or threat or using punitive measures, it leads to increase of anger in children. The ways the children under these circumstances use are dubions and hard to understand. The anger is displaced *i.e.*, cruelty to animals, meanness, prejudice formation.

There are of course, situations where a little anger is necessary for self actualisation. A person becomes aggressive to himself because he failed, and then laboured hard to succeed. Aggressiveness as a trait for a masculine personality. Hence, anger as such is not bad per se. Its worth depends upon its orientation. Guiding anger to success behaviour is more desirable than supressing it. Punishment for anger leads to more of anger.

Instead, if it is possible to build sense of security in the children, chanalise his competencies in a way that it would achieve the goal by reducing a too high aspiration. These are two of the constructive approaches to reduce anger. Criticisms of behaviour can be made even without insulting the child or hurting the child in the classroom instead of using buldozer type of criticism which aggravate the situation. Criticism should be constructive and be directed at the behaviour but not to the child followed by creating a sense of confidence in him that he will do well.

When children become too angry and too frequently, there is a need to analyse it more carefully. Diagnostic approach is necessary than retaliation. Sometimes a child does poor in school to express his hostility towards his parents. Therefore, it is not necessary to have too many restraints in home and in school. Many times anger is reinforced because parents encourage children to get what they want by becoming angry. Similarly Crow and Crow (1956) stated a teacher who meets temper with temper, besides giving public proof of his lack of self-confidence and self-control is not going to be effective in dealing with either offense or offender.

Anger can be reduced by using the following devices :

1. Aggressive responses can be eliminated by using social reinforcement *i.e.*, praise, patting for positive reactions.
2. Aggressive behaviour can be extinguished by discontinuing reinforcement *i.e.* extinction procedure.
3. Rechannalising his responses to constructive activities.

4. Ignore the behaviour when it appears.
5. Building a sense of security and positive self concept among children.
6. Accepting their feelings in early childhood.

Anger can be turned to useful purpose if a teacher can ask himself and encourage pupils to ask themselves, soon after anger, 'why did I go mad ?' 'Why did make me angry ?' Such a self enquiry makes valuable contributions for dissipating anger.

JEALOUSY

Jealousy is a normal response to loss of affection. It is an outgrowth of anger or attitude of resentment. Jealousy is expressed in an outburst similar to anger or temper tantrum.

In young children jealousy is seen when there is the birth of a sibling. Because the older child thinks he can no longer get the affection and attention from the parents any more and he feels neglected. Hence he becomes resentful toward both mother and the new baby. Similarly the young child is jealous of the older one because of the privileges given to older ones.

Jealousy arises out of a social cause. It involves people especially for whom the child has some liking or affection. In young children jealousy is seen when there is birth of a sibling. The older child thinks that he can no longer get the affection and attention from the parents any more and he feels neglected. Hence, he becomes resentful towards both mother and the new baby. Similarly, the young child is jealous of the older one because of the privileges given to older ones.

Parental favouritism for the attractive, affectionate or gifted child creates jealousy behaviour in children. According to Jersild competitive attitude of parents *i.e.* comparing one child's performance with another, is responsible for developing jealousy in children. When the child enters the school he becomes jealous of classmates, and jealousy becomes flared up when teachers compare pupils with each other. On the other hand, one is jealous of another if he excels in athletics; if some one is more popular than himself. Girls are often jealous of boys in their classes. The child is also jealous of other children if they have greater material possession *i.e.*, more toys, more clothes etc.

Jealousy is expressed in mild annoyance and as well as in extreme hostility.

Reactions of very young children including active attention seeking from parents, finger sucking, verbal aggression towards the baby and parents. These reactions may be direct and indirect. Direct reactions include hitting, kicking, biting, pushing, punching, or scratching the person whose

attention he craves or the child about whom he is jealous. Indirect responses include infantile behaviour like bedwetting, thumbsucking, general naughtiness, destructiveness, name calling, venting feeling on toys or animals. Among older children jealousy responses are more varied and indirect than those among younger children.

Two out of three jealous children are girls. There are also age differences in jealousy *i.e.* peak occurs at age 3 and another peak at eleven. More girls show jealousy at an early age and more boys at a later age. There is more jealousy in higher intellectual levels than the lower. Jealousy is more in girl-girl combination than in boy-boy or boy-girl combination in the family. Inconsistency in the application of discipline tends to increase jealousy. But if the mother pays less attention to children her children are less likely to show jealousy.

JOY, PLEASURE, AND DELIGHT

It is satisfactory expression of drives within the children, undifferentiated at the beginning. Boys on the whole, tend to be more overtly happy than the girls. Mainly pleasant emotions appear from physical wellbeing, cooing, babbling, standing, walking, running, overcoming an obstacle, comics etc.

Table 3. Situations in relation to the first appearance of laughter and smiling

Sl. No.	*Situations*	*Laughter*	*First appearance of smiling*
I.	*Laughter or Pleasure*		
1.	Satisfaction after hunger has been fully appeared		26th day
2.	Bright coloured objects (as moving tassels of bright colours hung over the craddle)	5th week	23rd day
3.	Hearing musical sounds (as the piano)	Eighth week	
4.	Joy at familiar and pleasing impressions (as the face of mother)	Six to nine weeks	
5.	Sight of toys	End of eight month (Hatzer)	
6.	Awakening from sleep	End of eight month (Hatzer)	
II.	*The Social Smile*		
7.	Smile of the familiar adult		26th day
8.	Sight of a friendly person	End of second month	
9.	Chirrupping and talking to the child	Three months	Two Months (Washburn)

10. Friendly nodding of adult		Sixth Month
11. Laughter at mirror image of oneself	8 month	
III. Laughter of Defeat or Mild Thwarting		
12. Peak-a-boo (cloth between examiner and child)	4-6 months	2-4 months
13. Rhythmical kneedrop	5 month	2-4 months
14. Threatening head (sudden booing near face of child)	4 months	4 months
15. Elevator play (sudden rising and lowering of child)	6 months	4 months
16. Tickling	6 months	4 months
17. Rhythmical hand clapping	5 months	5 months
18. Sudden appearance	6-11 months	5 months
19. Sumbling on the floor, while sitting	8 months	
20. Unexpected sound (adult imitating birds and animals)	9 months	
21. Effort to stand with support	9-12 months	
22. Strange, masked faces	10-11 months	
23. Playful disobedience or defiance of adults	10-11 months	
24. Nervous, self-conscious laughter at being noticed	10-11 months	

Understanding of emotion, and its dynamics are very crucial for a classroom teacher. Especially, if there is emotionally disturbed child in a classroom much of the teacher's time is spent to control him than to man ıge the classroom problems. A teacher must not only know what and why of emotion but how to handle such critical cases. Details of emotional problems are described below.

FACTORS ASSOCIATED WITH EMOTION

Factors which are responsible for development of emotion are many and varied. It ranges from secretion of glands to parental child rearing practices as well to effects of peers, school, cultural and health of the children and his experiences etc. Continued frustrations in school, in life situations, rejection by parents, double discipline, broken homes, sibling rivarly do constitute significant dimensions which have been already discussed in the text. Deprivation of psychological activities and negative emotional reactions in emotional situations are common. Parental directions or training to children's as to how to handle emotions are lacking in our country. Hence, there are many emotional outbursts.

First born children, and children who are single are noted for constant affection and as such suffer from overprotection. Children in large families

are neglected and have feelings of depression, inferiority and insecurity. Sibling jealousy, parental negligence, and discrimination contribute significantly to emotional development. At the same time, there are sex roles, and cultural imperatives which help children to show emotional behaviours in order to conform to role expectations. The male child behaves as a male and the female as a female.

Maturation plays a dominat role in emotion. With increase in age memory improves and ability to imagine increases. These lead to new dimensions in emotional response. The endocrine system also helps to regulate bodily functions and soon after birth the adrenal gland increase in size rapidly upto 5 and from age 10 to 12 it becomes slow. These influence mood states.

Environment such as a healthy emotional climate is a physical and psychological setting in which, the child feels safe, develops trust in others, and build a sense of confidence and trust. Childhood experiences both in family and community with genuine affection and happiness set the tone for healthy emotional development.

COGNITION

Every emotion has a cognitive component and every thought is influenced by emotional factors. Both emotion and thought one intimately in dialectical unity. Feelings reinforce ideas and ideas in turn reinforce feelings. Emotions are characterised by specific cognitive meanings supplemented by facial expressions, voice tone, and body gestures. It is not possible to learn to control emotion. A person who experiences fear cannot eliminate fear it self. He knows how to cope with it. I am afraid, what should 1 do ?

LANGUAGE AND COMMUNICATION SKILLS

Children learn variety of ways to let their feelings be known. With language and verbal skills they talk more about their feelings. Until age 7 or 8 most children are frank to talk about their feelings. As they grow they learn to control their feelings and to be more discreet about expressing them.

SOCIALISATION

Children's emotion through spontaneous are influenced by their social interaction. Child expresses emotion freely when there is some one who is to listen to him. Models help them to learn emotion and express in socially accepted ways. Children who are forced to suppress their emotion are usually emotionally disturbed. Emotional deprivation suppress the child's overall development. Children who are deprived of positive emotional interactions

seldom develop self esteem and are self centred and are demanding and appathetic. These deprivations lead to hostility and aggression.

PERSONALITY AND TEMPERAMENT

She is an angry child, he is a hostile boy, she is a happy girl. These statements reflected that children's emotions are a reflection of their personality. They are also a reflection of internal states. Hence, emotional expressions differ according to personality characteristics and temperament which vary with time, place and circumstances.

MOTIVATION

Emotion and motivation one intimately related. With emotion there is usually an impulse to work or act. Feelings are also essential which act as motions for action. They are bound together in human interaction.

BEHAVIOUR PROBLEMS IN CHILDHOOD

As children grow their behaviour changes. Child's behaviour in each stage is marked and changed by his own personality. At the age of two, for every thing the child says "No". This is a healthy sign because the child is beginning to act as an individual.

A behaviour problem is some form of behaviour that is not appropriate to the child's age and development. Thumb sucking is not a problem for a child of 12 months but certainly it is, if seen at the age of five years. It usually indicates that something is wrong.

Sometimes the reasons for the child's behaviour problems can be easily understood. A three years old who refuses to eat solid food after the arrival of a new baby is using this to attract the attention. But in many instances the reasons lie in deepseated emotions and the child's behaviour is baffling to his parents. A child who feels that his older brother outshines him may wet his bed in the unconscious hope that he will again be treated with the special attention a baby receives, or as a way of showing anger at not having his parent's esteem. That's why it is always desirable to know what underlies behaviour problem than treating the problem only. It is as if treating scarlet fever by putting make-up over the rash.

There are various problems which parents might face and which require special attention for a healthy personality development.

Eating problems are seen at about age two. At this point it is better to keep the child in humour and see that he eats, rather than forcing him to eat something. This latter instance may be associated with punishment and become more severe to deal with. Sleep problems are seen because of reluctance to leave the family, fear of darkness, nightmares etc. A provision

of a night high takes care of many of the minor sleep problem, but if it is a sign of negativism, then it has to be dealt with care.

Discipline problems are common to all children in some degree. The children beginning from age 2 test their parents to see how much they can do away with. But a child who is defiant, disobedient, and even aggressive poses a serious problem. These appear as a reaction against overstrict discipline.

Bedwetting may be seen as sign of emotional disturbance but it can be reduced by not making this an important issue. A relaxed home atmosphere, providing the child with plenty of normal interests and activities, the problem is gradually reduced. Undue over praise for not wetting the bed should also be avoided. Leaving aside the medical reasons, the emotional problems responsible for bedwetting can be taken care of parents. Scolding or spanking him will make him only more upset and lessable to regain bladder control. Most children take the natural pride in acquiring grown-up habits and are likely to be just as concerned as their parents about the problem of bed wetting.

Irrational fears are seen in all children. Temper-tantrums are quite common in between 11-2 and 3 years. Nervous habits such as thumb sucking and nail biting after the age of five are seen because of emotional problems. These can be removed by using reconditioning technique. The child who always day-dreams needs serious help.

Sex problems depend upon the attitude of parents. If they strongly disapprove the normal curiosity of the child, they may both increase his curiosity and drive underground. Therefore, many of the problems arise due to wrong understanding of the problem by the parents. The chapter on Social Development will specify besides the measures described above, the attitudes and behaviours of parents to words rearing children.

IMPLICATIONS

Among the instances of infantile emotional behaviour the most common problems are temper tantrums, jealousy, resentment, dependency, over dependence, not only among infants but among grown up children. Perhaps this is due to the fact that our schools emphasize intellectual growth at the cost of affective growth. The teacher should be acquainted with the emotional growth of children. They should build up atmosphere for security and self-acceptance.

Education aims at balanced development of personality where emotions occupy a significant place. Further, child's learning is directly related to the emotional life of the pupils. Continued tensions upset the individual and distract the children from the learning task.

Children many times imitate aggressive models and become aggressive. They feel inferior because of imagined frustrations or failures. They become insecured when they do not get enough parental affection in home. But if the child has experienced security in early years of life in home and school he can face the world with confidence and can tolerate frustrations.

School is very important, because many children come from home without any security and it is the teacher's responsibility therefore, to give him security and make him free from emotional stress. It is the responsibility of the teachers to see that no student is faced with a steady diet of fear, failure, and frustration as a result of school activity.

School and teachers should also promote emotional maturity. This is done through (*a*) by giving security (*b*) by helping him to sublimate emotional tension and (*c*) by making the classroom atmosphere free where childs feeling are accepted, tolerated and respected. A sense of human, a little sympathetic understanding will help the children in a long way in developing within him a sense of belongingness to the class, institution and learning. He therefore never entertains any feeling of retaliation and rejection. This child can also develop frustration tolerance.

School and teachers should encourage emotional expression rather than repression. A sense of school spirit, sport, cultural activities are the mediums through which many emotional feelings can be expressed well under control rather than being repressed and forming a body of agrieved feelings which might burst later on.

In order to help children to behave in a matured manner it is necessary for the teachers to be matured also. The teachers should not show signs of emotional immaturity, otherwise the children will imitate. If the teachers are respected, ideal, sound, they act as good models for imitation.

What is obvious here is that teachers should handle the emotion of the children with utmost care so that they develop healthy adjustments in life, learn from instruction, and became socio-emotionally adjusted. Teasing, reprimanding and annoying children result is negative consequences.

Moreover if the school programme is suitable to the pupils they derive joy and feeling of achievement. If the programme is not stimulating and upto this level they certainly face failure and that becomes a cause of annoyance and displeasure. Emotions are constantly involved in the teacher pupil relations at school. There may be under current of anxiety and resentment among competing students. Hence, to do an effective teaching the teacher must be sensitive to the emotions of the children in school as well as his own. He must appreciate the feelings of pupils and save themselves from unnecessary ridicule and embarrashment. The teacher must help the individual child to

realise his potentialities as a person, learn to face reality, accept himself and live comfortably with his thoughts and emotions.

School has significant contribution for emotional development especially through the encounters of success and failure, through self-acceptance and self rejection. Teacher's discriminative attitude contributes to emotional bickerings. Under-achievement sometimes results out of this subjective emotional experiences, that I am not liked, the teacher hates me'. Positive emotions on the hand are so much inspiring that students achieved very high success. There are discepancies in achievement depending upon the emotional issues. Hence, one has to give a great deal of attention to emotion.

Much that influences child's emotional life comes before he goes to school. But we must not assume that his attitudes are completely impervious to any influence. Past emotional experience can be modified to a considerable degree.

Probably the most important factor in a child's life is the affection he receives from others, and the affection he develops for others. The love of parents, the love of a teacher, the love of peers all leave a mark on everything that goes on every day in his life. The child who is accepted will have lot a freedom to try things out, to explore, to make mistakes and learn by that. He will not be fearful. Where there is mutual acceptance there is much room for spontaneous expression. A teacher therefore refrains from displaying obvious favouritism which hurts the feelings of others.

If parents and teachers do not show affection from eary age, the children become quite defensive. As he grows older, the restrictions and restraints, the do's and don'ts seem quite arbitrary and exaggerating to him. He becomes suspicious. He begins to doubt his own worth. He may resort to do all kinds of devices to bolster his self esteem. Responses to lack of affection may take a turn of aggression or very compliant and self-effacing turn. As he grows older such a child may go to great length in his efforts to be all things to all men.

It a child gives much energy to protect himself or vindicate himself, there is very little thing that he can do either at home or in school. Reaction to rejection in school may lead to many behaviours : unwillingness to learn, restlessness, destruction of property, tardiness, absenteism, and the like. A pupil's feeling are bound to be affected. No matter what the teachers do at school or how good they are. Certainly the child will be reminded of his limitations no matter how unpleasant it is. Still if schools attempt to eliminate unwanted frustrations, uncalled for rejection and make the school climate free from tension much of the problem behaviour can be saved and a new attraction will develop between pupils and school. I have on many

occasions said that school drop-out has the major cause in rejection and discriminations by teachers of pupils.

Classroom atmosphere should be meaningful, challenging and realistic. The child must set his goals. For the dull child school work is often a source of frustration rather than challenge. This gifted do sufter because for them there is no challenge. Some teachers are competent in organising the work of the school so that experiences are educationally satisfying. Fear will be reduced with increased security. Learning can occur in an affective climate.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. Outline the development of emotion in children. What are the effects of maturation and learning on emotion ?
2. "Children emotions are characteristically different from adult emotions". Explain.
3. What are the common emotional patterns in childhood ? Explain.
4. What is fear ? How can you reduce fear children ?
5. What is anger ? How can you reduce anger in children ?
6. Write a note on the characteristics of childhood emotion.
7. Write a note on joy, pleasure, delight.

Answer the following questions in 50 words each :

1. Bridges and classification of emotion.
2. Watson and conditioning of fear.
3. Role of school in emotional development.
4. Role of parents in emotional development.
5. Stranger anxiety and separation anxiety.
6. How is jealousy created in children ?
7. What is tamper tantrum ?
8. Causes of anger.
9. Contribution of Robert Bridges to emotion.
10. Method to reducing fear in children.
11. Role of maturation in emotion.
12. Anxiety in children.
13. Method for reducing anger.
14. Social smile.
15. Behaviour problems in children.

Write whether the statements are Ture or False :

1. Child's emotional states are intense.
2. Child's emotions are inherited.
3. Watson's experiment on Albert to show fear emotion is a failure.
4. There is no relation between mental development and emotional development.
5. Anxiety is an internal fear.
6. Jealousy appear at one year of age.

Fill in the blanks :

1. Children emotions in term of duration one.....
2. Children emotions in term of degree one.....
3. Emotions change in.....
4. Pattern of emotions are.....for different types of emotions.
5. *Anger* reactions increase with age whereas fear.....
6. After preschool period fear emotions.....
7. Anger can be reduced by.....their feelings during early childhood.
8. Emotions can be identified from.....expressions.
9. Emotions appear quite.....
10. The first emotional expression is.....excitement.

10

Social Development

The child is not born social. He learns to be social. The process of socialisation continues throughout life beginning from infancy. The child at first is egocentric and only after language and social activities through play etc. are developed he becomes socialised. In the process of making him socialised the family, the school, society, neighbourhood, the culture, the peer group and many other interacting factors play their significant role. Because of these factors or forces, the young child moves from individualisation towards socialisation.

What is understood by the term 'Social development' or its synonym 'Socialisation' ? Mc Guire and Havighurst (1947) defined, 'Socialisation is the process of presenting alternate channels for individual behaviour together with positive and negative sanctions which will lead to acceptance of some and rejection of others. It emphasizes the influence social groups, formal and informal upon the personality of the individual.' This definition although quite comprehensive yet does not make the meaning clear. Socialisation simply refers to a process through which an individual child acquires traits, values and attitudes, beliefs, behaviour in conformity with social norms or standards. In other words, his behaviour is accepted by others as well as appreciated. It is acquired through social cultural conditioning and personal conditioning.

It involves three kinds of processes :

(*a*) The individual behaves according to the norms of his own group.

(*b*) The individual plays appropriate sex roles and other roles and defined by the group, parents, and children etc.

(*c*) He develops proper social attitudes.

A child or pupil who is social in one who behaves in an approved manner, plays the role that society defines for him and has favourable attitudes towards people and social activities. A nonsocial child on the other hand, fails to behave in the above manner in one or more areas of behaviour.

An antisocial on the other hand does just the opposite of what the society expects him to do. He is disobedient, quarrelsome, and destructive.

Social behaviour is learned. This takes from early childhood experiences, and the opportunities given to the child in early childhood for social interaction, the motivation of the child, the willingness to learn from parents, elders, teachers, the methods of making best social contacts. When all these conditions are favourable the child develops socially accepted behaviour patterns. If the child from the beginning of his life is not given opportunities for social contacts then he would face later problems in interpersonal relationships. Infact, children who remain in foster homes have restrictions in social participation. In other cases, the interacting group must be selected, otherwise the child may learn some undersirable traits.

Social development or social learning is a slow process. There are periods of development. It is quite rapid at first. Hence, early experiences are important.

Social development follows a pattern. In the infancy the young child lacks group feeling. He is possessive and egocentric. Then it is followed by sharing and co-operating with others in play. Only in late childhood the child enjoys a group life. Interest in group activities and participation increases in adulthood.

Social development is predictable. The two year old is solitary in his play. He of course imitates others. At 21-2 year of age the child grabs from others and rarely shares them with others. By the time the child reaches third year of development, he engages himself in group play or team spirit is developed. By age 4, he listens to the group influences and respects for group develops, true socialisation begins in school. There may be little variation but it follows this sequence.

In the stage of infancy beginning from birth, the infant has no interest in people. His activities are directed towards satisfaction of the physiological needs. The child at the first 2 months of life does not even distinguish the human voice and other noises. Form the 3rd month, the baby likes the company of others and feels discontented when left alone in the crib or bed.

Smiling is the first social behaviour that appears at the third month. Kicking the bed and waving the hand at the sight of mother or adult figure who is nursing the baby are also seen. They show fear responses to strange persons at around third month.

Around fourth month the baby makes anticipatory responses pays selective attention, discriminates between familiar and unfamiliar persons. At sixth month he grabs his nose, pull's the adult's hair. He imitates the speech sound of others at the 9th month. He responds to adult's no-no sound

or directions. From the fifteenth month the baby shows increasing interest in adults and a desire to be with them. Around second year the child becomes an active member of the family.

With regard to other children in the family the child shows interest in looking, smiling, and reaching out and touching other children. They fight among themselves and become when a toy is taken away by one child. But they start imitating each other during the second year. They adjust and cooperate in play by the time they become three years olds.

But the end of second year and beginning of third year is a strange age. The child hides the face in the lap of the mother when some one offers him something. He refuses to speak. He is self conscious and shy. In case of children suffering from insecurity such behaviours are seen even at later stages. Rivalry and resistant behaviour appear during this period and they dissipate by the third year.

The early socialisation that develops between the infant and the mother is called attachment. Social development is affected by this infant attachment and affiliative experiences. This helps in the development of feeling of security. Attachment is a security blanket in the words of Harlow. In the absence of the mother the child feels separation anxiety. Even the child looks for a mother surrogate.

EARLY CHILDHOOD

From third year the child develops into a distinctly socialised individual. These years *i.e.* 3 to six are called pre-gang age. Social behaviour developed during the preschool stage persist with very little change. At this stage the kind of social experience that the child has is more important than the number of experiences. Nursery school experiences are more beneficial for the social development of children, under the guidance of trained teachers, because in our society younger children are quite often teased by grown up children. As such they develop negative attitudes towards adults which might influence his future adjustment.

With increasing age the total time that the child spends with his peers are more than that he spends with adults. The three year old resists adult influence and wants to be independent. The four and five year old gradually becomes more friendly and cooperative and wants to avoid the displeasure of others. However, children's social attitudes are greatly shaped by the attitudes of teachers.

After age three, the size of the play group increases with age. Children become selective in play. There is an increase of friendly relation with increasing age and there is frequent interactions between them. But through out the years of early childhood, the child is selfcentred in his social

behaviour, although the change takes place from solitary to cooperative play systematically. He soon learns to share and adjust. Negativism or resistant behaviour results out of aggressive discipline and frustrations in early childhood arising out of adult interference and inconsistent discipline. Negativism becomes high at about 1.5 years. Another peak occurs between three to six years and after that it declines rapidly. For boys, another peak occurs at age eleven.

Negativism is a common behaviour but if it occurs repeatedly or quite often it becomes an antisocial character. Children having these traits fail to carry out orders, pretend that they are not listening, quite stubborn in connection with all routine activities, demanding, destructive, and moody. The socially adjusted child expresses negative reaction directly but less adjusted children express it in a diffused and generalised way. Verbal expressions increase replacing physical expressions with increase in age. Negativism as such is not desirable but they certainly contribute to vitality and strong motivation for later adjustment.

Aggression is another such behaviour which is seen during childhood. It reaches its peak between 41-2 and 51-2 years. It is a reaction to frustrating expriences : Physical punishment, discrimination by parents and teachers, unnecessary blame, rejection etc. Verbal reactions to aggression increase with age and physical reactions decrease. Quarrelling is a common characteristic which is seen among children. It is an educational experience for the child. It teaches him what others will and will not tolerate. He soon realises that picking fights makes him unpopular and can lead to physical discomfort and pain. With guidance, he learns that his ends can be achieved by using-pleasant ways *i.e.* co-operation than quarrelling.

At the age of two, children do not display rivalry. At age three some competition appears. By age six most children have a well developed competitive spirit. Rivalry is more common when the children want to draw the attention of a common man or figure. Rivalry exists in all homes due to sibling jealousy. In nursery school all children want to get the attention of the teacher. Teacher's pet or mother's pet is a cause of jealousy. Children brought up by more democratic child training methods becomes more cooperative.

With increase in age the child becomes increasingly anxious to win the approval of others, first of adults and later of individuals his own age. In this process, he often comes in conflict with adult regulations and the codes of the social group. Since his desire is to get attention from others, he tries even the unacceptable ways.

During this period children emerge as individual's by developing their personality traits and self concept. They learn certain values in the Nursery

school. Cultural values are also learnt. At the same time negative self image may be learnt if the child identifies with a model who possesses undesirable traits (Kagan, 1971). The peer group has a significant effect at this stage.

LATE CHILDHOOD

During late childhood the child enters into the school. The individual games gives way to group games. The child's circle of friendship widens. This stage is known as the gang age during which conscience develops rapidly. This is one of the major developmental tasks. Which the children of same age feel and act together. There is a gradual increase in group play from the sixth to the eighth year. There is a gradual change in socialisation also. The child becomes less selfish, less self centered, and less aggressive. Instead, he becomes more cooperative, outgoing, and group conscious. The typical child's gang is a play group which sometimes may lead to mischief making.

The children at six and after have their own sex groups, normally small ones. This group begins to dominate their life. They develop their own mores which protects their own identity as in groups. Boys as a rule from gangs earlier than girls and both as a rule from gangs earlier than girls and both loose a interest in gangs at puberty. The boys and girls crave approval of the group, for their speech, dress and behaviour. Craving for attention stems from insecurity, and is associated with such traits as timidity, jealousy, moodiness, and over dependency. First born girls demand more attention like the only children. At this age level they become oversensitive. This is a common could which every one has it. For boys oversensitiveness reaches the peak at eleven years of age and then drops abruptly. For girls it continues upto puberty.

The children at school age *i.e.* six and seven years, are highly suggestible. They are more loyal to the group and the leader. They engage themselves occasionally in destructive activities. Rivalry and competition are also observed in them. But child soon learns to play the rules of the game. Cooperation and sharing mentality is well developed around 9 to 10 years. They develop also sense of responsibility. Dependency decreases giving rise to increased motor and speech development. Children at this stage should be given responsibility to acquire self confidence and be independent. They develop social insight. This insight also increases with age. The children discover things for themselves and perceive the meaning of the behaviour shown by others. Social insight is a requirement for social adjustment.

Prejudice and negative attitudes are also learned at this stage from home and school. A democratic child rearing practice reduces this prejudice formation to a considerable degree. Sex antagonism continues. They be little

each other's interests, skills, and activities. Strong sex antagonism is seen around fifth to seventh grade *i.e.* 10 to 13 years, which is at the peak. The reasons for this may be cultural as well as maturational. School text books sometimes promoter this antagonism by stating that males are superior to female in different mental abilities etc. which influence the interpersonal attitudes. Children from low SES show more of these antagonistic feelings than the high SES. This arises out of social inadequacy or insecurity. Sex antagonism has adverse effects on social skills and social adjustments.

It can be said that gang life of children helps children to be sociable, to develop a conscience, to learn appropriate social attitudes, to acquire personal independence. It develops self control, fair play, courage and many other social traits. Although gang activities are occasionally mischievious, it depends upon how learning experiences in the gang are planned.

ADOLESCENCE

With puberty there is a change is social attitudes, a decline in interest of group activities, and a tendency to prefer solitude. This stage may rightly be called antisocial stage or a period of disequillibrium. There is marked individual difference in the age of sexual maturing and as such it is difficult to state the characteristic age-specific changes. The children develop a definite self concept, a set of social attitudes, which vary both in positive and negative ways. There is a decrease of sociability, co-operativeness, generocity, popularity etc. There is antagonistic attitude towards everyone. Social insight disappears abruptly. There is more of day dreaming, high sex antagonism, withdrawal from group, resistence to authority, lack of proper communication with teachers and others which are necessary for social development. These are again changed in the positive direction once children enter adulthood and pass away from puberty a adolescence. The early maturity brings with it exaggerated forms of antisocial behaviour. The child becomes overtly aggressive, demanding attention and previleges, rebels against authority, quarrelling type argumentative, and hypersensitive. But gradually with emergence of adulthood such behavioural characteristics are replaced by more positive and stable pattern of behaviour. But it all depends upon how the individual child passes through the stages of socialisation.

An Abstract of Social Development

Stage Infance 0-3 yrs.	Characteristics strong attachment to mother anxiety for strange persons. Separation anxiety if the mother is absent. Beginning of peer interaction. Dependency on parental figures. Immature socialisation skills. Highly egocentric and self centred obedience, and attachment.

Early Childhood 3-6 yrs.	Egocentrism continues. Same sex friendships. Nursery school experience and extended friendships. More peer contact and less parent contact. Conformity to peer group norms. Early sex typed behaviour Aggression, Rivalry, Negativism.
Middle Childhood 6-12 yrs.	Sensitiveness, Self-consciousness, Continued separation of the sexes, Co-operation and empathy increase structured social activities, Social communication, Sex typing behaviour, Respect for authority.
Adolescence 13-16 yrs.	Identity formation, Independence and autonomy. Peer group as agent of socialisation, Conformity to norms, Heterosexual relationships, Development of conscience. Antisocial behaviour due to early pubertal changes.

According to Erickson (1956) socialisation consists of eight stages commonly known as "The Eight stages of Man". Each stage is a psychological cirsis which arises and demands resolution before the next stage is reached. The eight stages are :

1. Learning trust vs. distrust (0-1 or 2 years infancy)	The child well handled, nurtured, loved develops trust, security. Badly handled, he becomes insecure and mistrustful.
2. Learning autonomy vs. shame (1 Yr. to 3 yrs. infancy)	The well parented child emerges as sure of himself, elated and proud rather than ashamed. The child develops a self will, stubborness, negativism.
3. Learning initiative vs. guilt (3 yrs to six year)	This the play age or pre-school years corresponding to early childhood. The child imagines through active play, fantasy, co-operation. He is also fearful, depends upon group.
4. Learning Industry vs. inferiority 6 yr-12 yrs. (Middle Childhood)	School age as is commonly called the child learns to master formal skills of life, relating with peers accoding to rules, progressing from freeplay to play that is elaborately structured by rules and formal team works. He learns self discipline.
5. Learning identity vs. identity diffusion (adolescence) 13 to 20 years	This is a stage of who am I ? There are minor delinquent problems, oscillations self doubts, antisocial thoughts.

6. Learning intimacy vs. isolation (adulthood)	The adults experience true intimacy, genuine and enduring friendship.
7. Learning generativity vs. self absorption	This stage is characterised by marriage, parenthood and creative production.
8. Learning integrity vs. despair	Peak of adjustment, integrity, well defined role in life. The individual feels happy without strain, guilt, regret, or lack of realism. He is proud of his hobbies. If one of the earlier stages is not properly developed, then he may view life with disgust and despair.

Socialisation then is a learning to learn process. It enables human beings to move from the infant state of helplessness to a state of conformity and independent creativity.

FACTORS INFLUENCING SOCIAL DEVELOPMENT

It has been stated earlier that the child becomes socialised because of the influence of a host of factors. Home is the first and foremost influence on the socialisation of the child. Early infantile and emotional relationships between parents and children are responsible for later characteristics. Children identify with parents, interrogate their qualities and display sex appropriate behaviour. Children who are hated, rejected, and illtreated developed antisocial characteristics. Chidren who are over protected develop traits of dependancy and are completely insecured. The culture of the home, the language spoken in the home, the behaviours displayed by parents and elders slowly but surely become a part of the child's personality and socialisation. Hence, what the child is, depends mostly upon how he is brought up in home. How emotion are reacted to ? How are his physiological needs satisfied ? What models he sees to imitate ? All these have significant influence in the process of Socialisation. Effects of maternal care in development of desirable traits have already been discussed.

It has also been found that father contributes significantly to early stimulation and this influences the child's overall emotion, social, and intellectual development. Academic achievement and IQ are affected by the absence of a positive father-son relationship.

The socio-economic status of the home, the language codesused by parents, the nature of the family interaction *i.e.*, broken home, home with double discipline, etc. have contributory effects. Delinquency is more prevalent in areas that are declining and where family life is not stable. The child's ordinal position *i.e.*, whether he is eldest, only, youngest, middle all

these affect his adjustment process. Children from democratic homes usually make the best of social adjustments.

Childhood is quite plastic. There is also a predictable pattern of development. As child grows he becomes more succeptible to group pressure, cultural values than when they were very young. The child spends more time outward than in home. He has the needs to be accepted by others. Hence, when he is rejected by parents, teachers adults he falls on the peer groups and learns their standards of behaviour. The child feels secured when he is accepted by the group.

Culture is one of the powerful socialising agent in the life of an individual. Examples of ancient or tribal societies as well as modern societies substantiate its impact. Margarett Mead one of the famous cultural anthropologist cites the patterns of culture in three tribes : Arapesh, Mundugumor, and Tchambuli. The Arapesh society is one which is not organised. There is loose kinship. There is no feeling of status. People are co-operative. No rigid child rearing system is followed. Any nursing mother can feed the child. The child is weaned by 3rd of 4th year. In such a society children become docile, less aggressive. They love and trust others. There is strong father-son affection and no threat of punishment. The children therefore develop respect for elders and have a sense of guilt. They imitate and develop these qualities. Girls marry at age 10 and stay with their husband. The children in general have no tendency for self assertion, no ago, no striving for achievement.

On the other hand, in the Mundugumor society there is severe sex segregation. No co-operation exists among member of the society. Parents are indifferent and rejecting type towards their children. There is very little breast feeding, irregular feeding, and severe training in discipline. Punishment is used for toilet training. There is strong sibling rivalry. Older children are aggressive towards young. There is father-son hostility. This is a society full of conflicts, competition, jealousy and envy including intense husband-wife conflict. There is little or no parent child relationship. Head hunting and cannibalism are in vogue including severe punishment of children but there is no orderly training of children. It is a highly individualistic society. Boys help the mother and girls help the father. Hence, children develop strong self assertion, ambivalent feelings, split personality, sense of egocentrism or possessiveness, leadership, aggressiveness.

The Tchambuli society is quite different. It is a patriarchal society with a strong organisation. There is sex difference in occupation. There is high stress on ceremony. Woman are important in economics. No rigid discipline is followed. There is casual protection of children mother, but she is quite

generous with regard to breast feeding. There is normal weaving and no rigid toilet training. Women are more aggressive than men. There is sex rivalry between older and younger men. Mother is affectionate to sons a little more than to daughters. Severe discipline in late childhood are followed. Till age 6 or 7 years. Same training is given to both sexes. Afterwords, girls are taught to be sexually aggressive. Men are ceremonial. They stay in home, use make ups to attract women. Women work in the fields. In such a society male children become docile, shy, artistic, feminine, insecured. Aggressive men are considered deviants, neurotics, and hystorical. Hence, it is quite clear from the tribal societies as to how social development of children are patterned by the culture in which the child lives.

Contemporary society also tells the same story. The Japanese society is a mixture of medieval and industrialised culture with a rigid class system. The economy of the state is under state control. The family system is patriarchal. There is rigid toilet training, maternal indulgence, overfeeding of children, and weanning at 2-3 years. From third year the male child is exposed to aggressive training. Girls are trained in docility. There is strong family indentification and child care. As a result, the children develop complete obedience to authority, they are polite; they show difference to authority and power. They are secured and selfassertive. The females develop docility and passivity.

On the other hand, in America we find a strong individualistic society with open class system, competition, high moral and legal code. Maternal authority and influence care quite strong. Aggression and competitions are encouraged. Weaning takes place in the first year. Sibling rivalry is strong. Love and indulgence of parents for children are seen in early years. Father dominates in theory, but mother works in reality. The children in this society become more success oriented with a strong status drive, sense of authority, status, and pride. There is strong sense of personal drive for power, sense of shame and belief in fair mindedness.

In Germany, the social structure is in between. It is an industrialised society. It is authoritarian and patriarchal. There is much stress on masculinity, aggression, rigid and regularised training and habits. Regular toilet training and punishment for wrong actions are emphasized by parents. Sibling rivalry is quite common. Boys are aggressive and girls are docile. Maternal love and paternal discipline are existent. The children develop strong sense authority, sense of guilt, dual identification with parents, are ambivalent, and possess an intense drive for power. Ego and security develop in strong discipline.

In our culture child rearing system varies from state to state, and class to class. As such, it is difficult to draw and distinct line regarding the

influence of child rearing practice and effect of culture. But on the whole children in our culture become docile, submissive, less aggressive, more external *i.e.*, having faith in luck, chance, fate etc. than on themselves, have a lower level of aspiration, are more dependent and have less striving for success. In case of poor families, children become insecured and aggressive due to severe frustrations : social economic etc. Further, the family life is often characterised by a mixture of discipline system to permit any clear model for the child. Socialisation and personality development are negatively affected because of inconsistent values which are fast emerging in a transitional phase of agrarian culture to industrialisation. Social development in short is the subjective aspect of culture which are integrated the behaviour pattern of the child.

PEERS AND ADULTS

Child's social behaviour are affected and influenced by the peers and adults in the school, in the neighbourhood. Even pre-school children imitate the pattern of social behaviour of their peers to get social acceptance. They become more mature by imitating the behaviour of adults. Attitudes which are learned in the group are sometimes slightly changed in the peer contact. Social behaviour is quite consistent unless there is very adverse situations in life. By the end of childhood the child has acquired many social attitudes from his parents, teachers, and peer groups from his personal experiences, and from books, and other medias of communication and contact. Negative attitudes are also learned the same way when the child enters school. He begins to reap the rewards or suffer the ills which flow from the first six years of life.

Peers have significant effect on child's learning bacause they give approval and attention, they show affection, they provide model. But the amount of effect depends upon the degree of intimacy between them, the tendency to submit or dominate, the ability to cooperate etc. Imitation is easy in the peer group which can be used in either way.

Twins spend more time together, have more interests in common in outside companionship as compared to other siblings. They also imitate each other and show similar feelings toward each other.

Family size also affects the social and personality development of children. While small families secure greater economic advantage they do produce problems of over protection and occasional tensions in the child. Joint or large families provide less economic advantage, but ensure greater ease of weaning from parental influence. Social adjustment as well as independence are greater because the child develops greater degree of co-operation. At the same time, due to inconsistent relationships there may be

rejection, hostility, and unhealthy traits.

Education and occupation of parents have significant effects on social development of children in so far as they provide models for observation and imitation. Working mothers have different effects on the child's development than non-working mothers because of the time spent on childcare.

Urbanisation and modernisation can have a desirable as well as undesirable influence. It provides greater stimulation at the same time greater diversion for undesirable habits, insecurity, lost of identity etc. Malnutrition of the child influences his social development. Malnourished children are apathetically listless, inactive, withdrawing type, who generally avoid group activities. They lack confidence and optimism. There is a high incidence of feeling of inferiority in these children.

Intelligence as a factor of social development has significant influence. Children whose intellectual development is rapid are socially well adjusted too. They develop social insight which enables them to interact more appropriately in social situations as well as in self-adjustment. High intelligent and high active children are normally more popular in school and respected. Low intelligent children carry a stigma with them and are hated. Consequently they develop negative self concepts and traits.

Although by adult standards young children's behaviour in social situation appear to be unsocial, but it is often not so. Parents and teachers overlook the social and only attend to the unsocial.

Secondly adults must show right kinds of attitudes, tolerance and understanding of the unsocial behaviour of young children. The child has to be taught social behaviour. Mere tolerance is not enough.

The child needs guidance and help to learn how to act in a socially approved manner. He should be given demonstrations in real life situations. All the needs of children are to be simultaneously satisfied with proper guidance.

Socialisation begins at home but is taught in schools. Habits and character are crystallised in school. Character education or socialisation is very much emphasized in our schools. It should be a part of school curriculum. The teachers and parents occupy crucial finger posts at the cross road of socialisation of the child. The schools should therefore be a playhouse for such development in addition to its knowledge giving function.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. Describe the social development of the child during early childhood.

2. Describe the social development of the child during late childhood.
3. What factors are associated with social development ?
4. What are the role of peers and adults in social development ?

Write whether the statements are True or False :

1. The child is born social.
2. Social behaviour is learned.
3. Social learning is a slow process.
4. Social development is predictable.
5. Smiling is the first social bahaviour that appear in the third month.
6. Age 3 to 6 are called progress age.
7. After age 3, the size of the play group increases.
8. Negativism is antisocial in character.
9. Rivalry appears at ages five to six.
10. With increase in age the child becomes extremly anxious.

Fill in the blanks :

1. The children at age 6/7 are highly.....
2. Learning Trust vs. Distrust appears between.....years.
3. Learning autonomy vs. shame appears between.....years.
4. Initiative vs. guilt appear for.....years.
5. Industry vs. uniformity appear from.....years.
6. Children are quite.....
7. There is a predictable.....in development.
8. Socialisations begins at home but taught in.....
9. Egocentrism is not an index of.....
10. Foundation of socialisation is laid in.....childhood.

11

Play in Childhood

The UN Declaration of the rights of the child has stated that "The child shall have full opportunity for play and recreation, which should be directed to the same purpose as education; society and the public authorities shall endeavour to promote the enjoyment of this Right".

Play is a natural occupation of childhood and an instrument of learning. It is carried out for its own sake. It is spontaneous and innate in all human beings. People say it is a safety value against all frustration and a window to the child's mind. Play is a natural occupation of childhood and an instrument of learning.

Play is a very curious activity. Practically every form of psychological activity is initially enacted in play (Piaget, 1968b). Erickson (1950) has written that he considers play to be the most self-healing activity engaged in by children.

Play is an agency for socialization. Piaget believes that the child during the preoperational stage remains engaged in various forms of play and imitational activities. Through the medium of these activities he becomes socialised in his speech and action, children do play with a free will. In this context, Gullick's concept of play is very appropriate. He defined, "play is what we do, when we are free to do, what we will". Free play, of course, decreases with age.

THEORIES OF PLAY

Surplus energy theory

There are various theoretical formulations regarding the concept and value of play. Regardless of the origin of the theory, it is true that babies squeal and kick, children skip and jump, run and play balls for no other reason but to work off surplus energy. Both Schiller and Spencer, are associated with this theory. It is true that children spend their surplus energy

through play but this theory does not explain why play interests from age in the growing child.

Children continue to play even after exhaustion. Sick children who donot have surplus energy also play. It therefore seems unwarranted to accept that play has a surplus energy component which does not have experimental support.

The recreational theory of play

Lazaraus and Sthainthel formulated the recreation theory of play. Play is a recreation after hard days labour which freshes the individual. What about young children ? They play in school in their recreation period which has a significant value derived from the word recreate *i.e.*, come with a fresh mind to take up creative work. This is basically related to adult life although children enjoy recreation time as fun.

Preparatory for life theory

Gross regarded play as a preparation for future life. This concept of play is very popular. He considered further that it is an instinctive desire on the part of every child to prepare for the arduous tasks in adult life. For example, the little girl is playing with the doll is preparing how to care for the baby. It is true the child learns much through play but he does play to learn either consciously or unconsciously. Hence, the instinctive preparation theory of play does not seem warranted at present. Me Dougall called this is instinctive theory of play.

Recapitulation theory

Stanley Hall, the father of child psychology was the proponent of the recapitulation theory of play. According to the interpretation, the child learns the racial experiences of the past which is alluring and attractive. He believes, that through play one develops the motor capacities, impulses, and fundamental forms of our past heritage. For some time this theory influenced the elementary curriculum. But doubts arose, if acquired characteristics can ever be inherited. Because of this doubt, the theory lost faith among the scientists of the present century.

Relaxation theory

Relaxation is the main function of play. As such Patrick said that play relieves fatigue which results from performing daily tasks of life. He said that daily works and worries in modern civilization puts severe strain upon the adults and brings about rapid fatigue. Relief is obtained through play. Hence, the relaxation theory came into existence. The theory appears very appealing but experimental evidences are needed to support this interpretation.

John Dewey believes that play can be explained in terms of the basic nature of organisms. All living organisms are by nature active. Because of inter-organic stimuli, the organism is in a constant state of action. Activity is very essence of life according to Dewey. The only thing necessary is to state the conditions under which organic activity takes this or that form. In this sense, developmental views appear most acceptable.

FACTORS OF PLAY

Play is pleasurable because the attitude toward it is favourable. It involves freedom and is a highly motivated form of activity. While children in all parts of the world and society play and love to play there are certain factors which influence it. These factors are : age, intelligence, environment etc.

For example, certain ontogenetic trends may be observed in plays of children. A baby finds pleasure in kicking, waving his arms; later on he gests pleasure in cooing blowing bubbles and so on. As the child grows more older he becomes more social in his play and he engages himself in more and varied activities. With increase in age a child becomes more selective in play and as such the variety of play decreases.

Sex

Sex differences is also observed in play and is more prominent during 8 to 10 years of age. Children around this age choose playmates of same age and sex. During adolescence boys engage in more competitive games and skill activities.

Age

Age is also a factor determining play activities in children. There are 4 basic stages of play. Parents should know and recognise these stages so that they do not expect more of their child than he is ready for.

The infant and toddler play alone. If there is another child in the room they do not play. By age two he will play with a child of his age but there is no real contact between them even though they may be playing using the same toy. This is known as parallel play.

Between age 3 and 4 the child engages himself in cooperative play group. Organised play appears when the child is grade one or two. At this age children play games with rules and involving team work.

Health

Healthier children have more active play. They take part in games and sports compared to weaker ones. It is also other way around. Play, sports games increases physical agility.

Intelligence

Bright children at each age are more active than less intelligent ones. Their play shows greater ingenuity , intellectual, constructive and have a balance between play and academic.

SES

Children coming from higher or upper socio-economic strata can afford to play games etc. which have become expensive over the years where as children from low SES and rural areas play less than high SES and urban children.

Leisure time

Amount of play time depends upon primarily on the family's economic status, involvement on household duties, and out of school time available.

Value of Play

Play in childhood is satisfying and pleasant. Besides the affective values, play makes the child physically stronger. The blood circulates more freely and the elimination of waste matters becomes greater. Muscles become more developed, motor skill increases, resistence to diseases decreases, agility and body control are increased. In other words, play has tremendous physical values which are beneficial to children.

Thinking capacity increase through manipulation of play materials. The child gets new ideas, becomes inspired, his vocabulary increases because of verbal communication among playmates and in describing materials associated with play. There are creative play materials to increase thinking in children. After a little play, the child concentrates much better in his studies. Play has thus educative value for the child.

Play is essentially social. The child gets pleasure from being in a group. He learns through play the value of cooperation, realistic competition and initiative for achieving success. He adopts himself to many situations and groups. He internalizes rules and regulations. Good play habits help the child to overcome timidity, shyness, moodiness, senstiveness and irritability. It provides an outlet for emotional satisfaction and avoid day dreaming and phantasy.

In other words, play has both socialising and stabilising influencing emotion. In view of the later, it can be stated that play has a therapeutic value. Play help the child to express his pent up emotions in socially accepted ways and with approval of others. Fantasies or make believe plays serve as outlets for anxieties. Many of the frustrations and unfulfilled desires are freely expressed in play in a sublimated form and as such relieves the child from tension and anxiety.

Above all, play helps the child to learn some social and moral values. He learns to toe the mark more quickly and more completely in play than in any other method. He expresses his whole personality during play. The baby who habitually smiles through his tears when he falls down experimenting with the new motor activity of walking yet continues to preserve, is the youth who fights to win but smiles even when he lost the game and like an adult who is self-reliant in the face of defeat. An individual who is in harmony with others develops an integrated personality. Play helps the child in doing this.

Play offers an outlet to express natural instincts and emotions. It prepares children to be able to express themselves. Play has therapeutic value and it acts as a cathars is for release of pent-up-feelings. It enables the child to control the emotion, and distinguish between fantasy and reality.

Free and spontaneous paly are mostly found in early childhood. For the most part these plays have no restrictions in time and rules. But as soon as the child becomes older these plays seem to lose their popularity and more competitive games are introduced. Boys are more active and at same time destructive in such play compared to girls who display greater coordination and less destructive mentality.

Dramatic plays occur between age 0.5 or 2 years of age and 5.5 years of age. Bright children and usually girls enjoy dramatic play much more than low intelligent and poor ability children. Since reasoning ability begins to develop early in the more intelligent children they begin to spend less time on Dramatic play. Dramatic plays are also known as make believe plays. About the time the child is ready for school or reaches the school daydreaming replaces make believe play. Daydream is at height during puberty. The degree of satisfaction or enjoyment from play that the child derives depends upon the nature of play activities available to meet his personal need and values.

Role of play in development has been recognised. It is said that a child in play is a scientist in his laboratory. While playing he is observing and learning the world around him. While playing with colours he understands two colours are mixed to produce a third one. He while arranging blocks understands that unbalanced thing's fall-*i.e.*, gravity from play experience. They put so much energy that play becomes direct route to learning.

Play helps him to practice whatever is taught in the class. If he is taught counting, arithmatic he works it through play with marbles, sticks, stones. The child prepares a house using sand. His power of observation and imagination are increase play becomes thereby an essential part of learning process. He connects the world of knowledge with the world of play.

Playing with others helps the child develop social taste. All children benefit from this but it is particularly helpful to the only child.

Play also helps develop the child's body, both his strength and coordination. He learns to achieve his movements better.

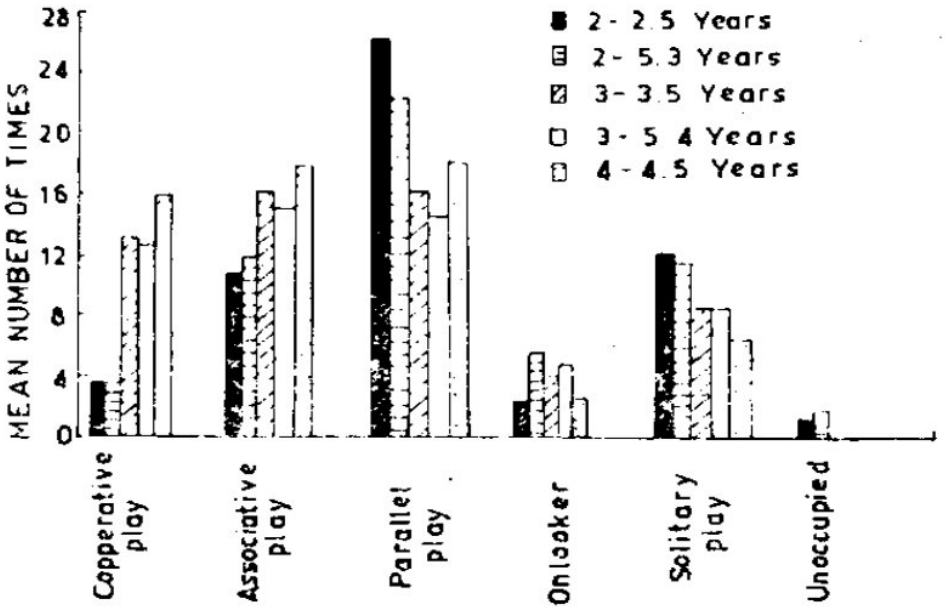
Play is a royal road to the child's conscious and unconscious inner world. If we want to understand his inner world and help him with it we must learn to walk this road. A child does not play spontaneously only to while away the time although we think so. The play is motivated by inner processes, desires, problems and anxieties. Besides, play has a positive effect on the development of socio-emotional characteristics.

CHARACTERISTIC OF CHILD-PLAY

Play follows a pattern of development. In early childhood, children play by looking at people, involve themselves with motor activities, and then play with toys. Irrespective of culture, by age 4 to 5 they become interested in playing with children of their own age group.

In spite of the fact that there is a general pattern, yet play is influenced by traditions. Certain sex appropriate plays are prevalent inspite of the children's preferences. The type of play also differs in relation to socio-economic status of the family.

Play activities decrease in number with increase in age. Average number of play that children have per week gives us a better idea about the above age-play relationship. At age 8 years the mean number of play is 40.11 per week and at age 20 years the mean drops to 17.71 per week. Play activities involving other children also decrease with age. The total time



Social Participation Among Pre-school Children (Parten, 1932)

spend in play decreases with age. On the contrary, the total time spent in a single play increases with age. For example, at age 2 years children normally spend about 6 to 7 minutes on a specific play but when the reach age 5 years, the average time for a specific play comes to 12 to 13 minutes. In other words, as children become older they do not change from play to play but devote more time in a single play.

Childhood play is informal and spontaneous. The child plays regardless of place, time and type of toy. Later on he needs special places, time, play group and gradually becomes more formal.

Similarly with increase in age physical play decreases. The child becomes more involved in listening to radio, reading novels, indoor games etc.

Sometimes the child daydreams. Daydream thus becomes a wishful play. In case of poorly adjusted child, daydream becomes a substitute for constructive play. In other words, in play really there is more of ego satisfaction and relief as one finds in daydreaming. It is most satisfying to children when life at school or in home becomes most ego threatening and monotonous.

Plays is influenced by tradition. Young children imitate the play of older children. It appears they have traditionally inherited to play specific type of play on the basis of culture, caste, sex, etc. The number of playmates decrease with age.

Stages of play in development

Exploratory Stage. Until babies reach age 3 months or more, they look around people, objects, random grabing of objects. There after hands and arms came under voluntary control and they can examine everything they reach.

Toy Stage. It begins in 1st year and reaches peak around 5 and 6 years. Between 2 and 3 years they think their toys can think, grasp, talk, feel. Toy play is solitary. Hence they decrease with age and children look for companion. Toy play is baby play.

Play Stage. Children enter to school. Play increases, science alone with toys but mostly with classmates, agemates in games, sports, hobbies and more matured forms of play.

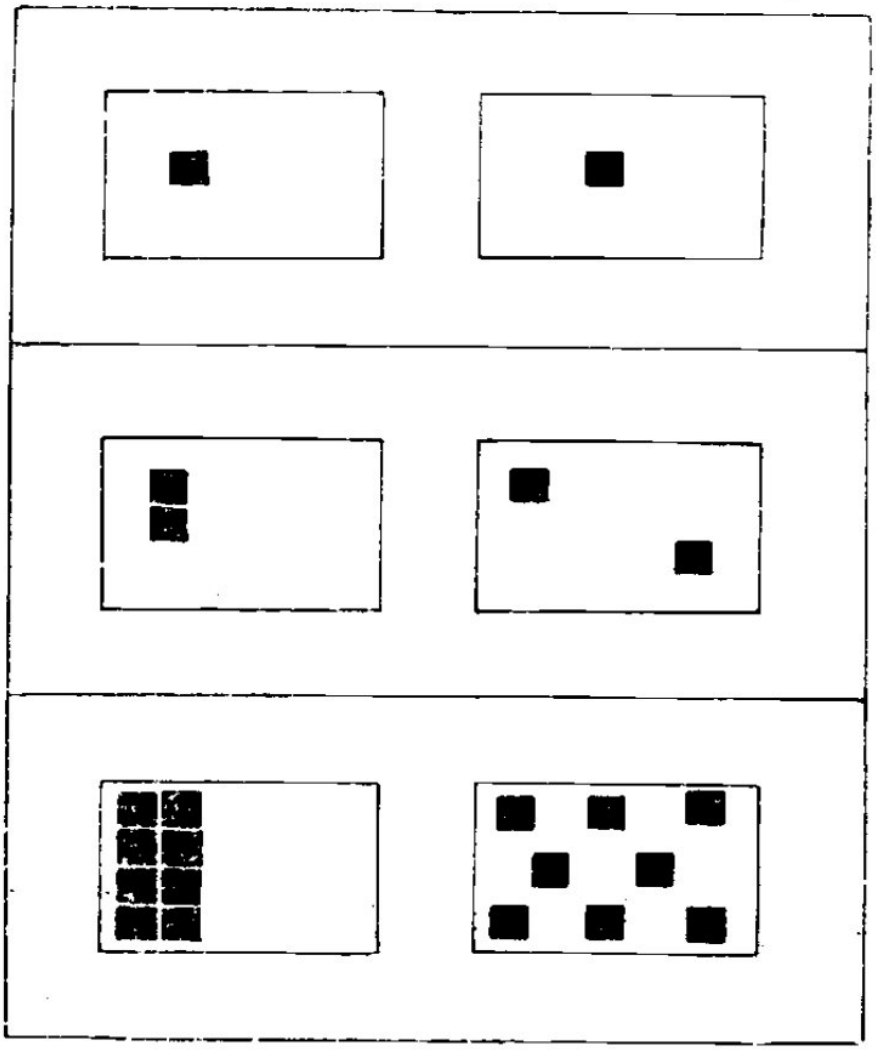
Day dream stage. As children reach puberty, they engage themselves in daydreams usually of martyr type *i.e.*, they ridicule themselves in play.

THINKING IS CHILD'S PLAY

Piaget considered the child to be very active, experimenting and explorative. His activities reflect greater dynamism and curiosity for which he thought, child's thinking can be developed more through play than any other medium.

Froebel and Montessori the two well known educators also looked at play in children from these view points. Play is not trivial. It is highly serious and has deep significance for development of intellect. Play is a way of learning. It is not merely a relaxation.

A child at play is a scientist in his laboratory. He is investigating the world around him and learning new facts about it. The toddler trying to balance one block over the other is studying gravity. If a child plays with finger paints or water colours, he finds out the mixture of two colours giving rise to another colour. These are first hand experiences. For example, when child is in the elementary school he can conserve the concept of area by using play materials. The diagram given here illustrates the concept of conservation.



(Conservation of Area)

There are two table mats and sixteen playing cards. In phase one, the two cards are placed one on each mat. The child brings one card places it on the top of the other and says it is same. Then he places two cards in one, close to each other and two in separate places in another mat. By means of direct comparison he comes to know no matter how the two cards are

arranged the area covered on the mat is same. When the number of cards are eight in each, spread in different order, the child conceives these as same if he has reached the stage of concrete operations. He does this by manipulation and playful comparison. Many such materials can be used for intellectual playful comparison. Many such materials can be used for intellectual development. It gives to the child infact, the way of connecting what he has learned and what is the reality.

Child's play during the first two years of life is mostly through sensorimotor experience including imitation of motor responses. Manipulation of concrete objects and grouping appear gradually during the period of 7-11 years and play provides enough situations for experimentation and assimilation. It is through innumerable varieties of play experiences involving objects and people that the child gradually assimilates the realities of the world around him. Symbolic play appears gradually after the end of the sensory motor stage. Symbolic play is at its peak during the pre-conceptual stage (2-4 years). Doll play fulfils the emotional needs of the child. The symbolic games are of three types. Type-I includes such things as pretending to be asleep and making the doll sleep. In Type II the child makes use of his body to represent other things. For example, the child may crawl and say "I am a tiger". Type III games are more complex. A whole act is directed by the child through toys, *i.e.* how to take a bath, preparing a dish etc. It does include compensatory play. He compensates or fulfils some of his ambition through "doll play". During pre-conceptual stage (4-7) the child's play are more socially oriented. During 7-11, children need more of outdoor games, skills. Playing with sand, creating a bridge, tunnels etc. help the child to develop his thinking ability and creativity.

This suggests that in schools, teachers would encourage children to preparing creative toys, which would promote creation, through imaginative and experimental play and arts. The play room in a house must have enough space and toys as the child has to identify and classify various toys. As the children grow it is difficult to provide play equipments which enable the child to practice the skills already acquired.

Educational games and play games as techniques and exercises should be happily blended in teaching different curriculum subjects. There should be scope for projects and group work.

The values already discussed above make it obligatory of reflect on the educational significance of play. Over almost 100 years ago Froebel said, "play is the highest achievement of child development, of human development, at this stage, since it is the spontaneous, expression, according to the necessity of its own nature, of the child's inner being...Play at this stage of life is not a trivial pursuit, it is a serious occupation and has a deep significance". He

introduced various forms of play like activities for the young children. While in school, these children played with activities like paper folding, mat weaving, clay modelling, symbolic games, music and developed their imaginative and creative talents. This kind of approach to play also is currently in vogue in many nursery and kindergarten schools. Piagetian concepts have also been brought to the level of play like activities to which children are exposed and they learn the concept of form, number, and vocabulary also becomes large enough.

'Education through the senses' introduced by Montessorie also stresses the significance of play for children. She believed that the child must use the didactic materials in spontaneous play. The teacher of course, gives some guidance but in most cases the pupils find their own choice and improve their thought through these materials.

Although there is a basic difference in two approaches of Froebel and Montessorie, the facts remain that play-way in education is a basic principle. In early childhood, the child can learn much through doll play, spontaneous play, make believe play, constructive play materials and symbolic plays. The progressive nursery schools cater for all these and give a lot of freedom to child to develop thinking and conceptual abilities through play.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. Discuss the importance of play in life of children.
2. What are the characteristics of child's play ?
3. 'Thinking is child's play'? Explain.
4. What are the various theories of play ? What factors are associated with child's play ?
5. What are the various types of play ? How do they differ at different stages of development ?
6. What are educational significance of childhood play ?

Wirte the contributions of the following to play within 50 words each :

1. Stanley Hall
2. Gross
3. Patrick
4. Dewey
5. Schiller and Spencer
6. Meaning of play
7. Recapitulation theory
8. Relaxation theory
9. Surplus energy theory
10. Therapeutic value of play

Write whether the following statements are True or False :

1. Thinking is child's play.
2. There is no difference in play of boys and girls in early childhood.
3. Socialisation takes place through play.
4. Play time increases with increase in age.
5. Play has no meaning for the child.

Fill in the blanks :

1. With increase in age number of play activity .....
2. With increase in age time spent in a specific play .....
3. Play differs at different ..... of development.
4. There is ..... in type of play with increase in age.
5. .....defined play initially.
6. .....regarded play as a preparation for future life.
7. .....talked of recapitulation theory of play.
8. .....only plays alone.
9. Childhood play is informal and.....
10. Play is.....for social development.

12

Children's Interests

Interest is an organismic condition that results in a desire for further stimulation from a particular type of object, idea or experience. How do then interest emerge ? How can we know them ? What are the types of interests ? Are they related to general behaviour ? Observations of individual difference in interests date back to as early as Plato's comment in the Republic "No two persons are born exactly alike, but each differs from each in natural endowments, one being suited for one occupation and another for another" Formal observation on interest began in the 20th century.

Strong (1955) conceived interests as an aspect of consciousness similar to feeling. It has three characteristics : Persistent attention, feeling, activity and direction. Interests are also characterised by intensity and duration. Interests have been designated operationally as vocational, educational or personal depending upon the measures of interest. It is an expression or likes and dislikes, preferences of choices.

The child's interests in certain activities are knwon from the things he choses to do. If he is not interested in certain activities no amount of training or force can help him to get things done. Before the age of two, a child shows little spontaneous interest in dressing himself, handling buttons but later insists on doing these things. A child's interests are closely related to his abilities and as the child becomes older he acquires certain new interests. The range of children's interest is quite restricted compared to the interest they acquire later on. An interest is a learned motive. The child indentifies his well being with this.

METHOD OF OBSERVING CHILDREN'S INTEREST

How does one know the interests of children ? The child's interest can be determined by various methods broadly characterised as testing and observation. At the early childhood stage it is observation that helps one to know about interest because the child cannot answer to formalised tests. His activities will speak of his interests but it is always better to supplement

observation or use varieties of observational techniques. Hurlock (1972) suggested the following techniques :

Observation of Activities

One can observe the children in play. What objects he prefers to play with; the objects he buys; the activities in which the child is spontaneously engaged. Inferences about his interests can be made easily from these samples of behaviour.

Question

The child by nature is curious for many things. After the age of 3 years, he starts asking series of questions, regarding plants, animals, human beings or anything that he sees in the environment. The nature of the question, the frequency of a particular question indicates the type of interest the child has. Parents by encouraging the child for asking questions can easily know what the child's interests are.

Conversation

After speech develops the child plays with his age mates, talks to them; talks with elders; listens and participates in family conversation. In his conversation he expresses certain likes and dislikes. If one closely watches the conversation of the child which is very clear, spontaneous, and seldom defensive, one can deduce the type of interest that he has.

Reading

Another way is, analysis of the reading materials after the child enters into school. He becomes interested in reading various types of books. One can observe very dispassionately the type of books the child is reading other than his text, whether novel books, story books cartoons, travels etc. Reading materials are really great indicators of interest of the child. If the child enters into a book shop what does he select will depend upon his interest and therefore his selection indicates his interests.

Drawings

Childhood stage is the most formative period of life during which many things come in. In his free time, the child draws sketches in pencil, in chalks, plays with clay and prepares toys. Hence, from the type of drawing one can infer the interest of the child because it is interest that manifests in action. Drawings are sublimated reactions of childhood frustrations but at the same time are considered interest indicators. The time spent on drawing also provides clues for interest measurement.

Wishes

There is a proverb "if wishes were horses then beggars would ride upon them". The wishes expressed by children are mostly imaginary than real. But when you ask the child what would you do if you get some money. The child then comes up with certain wishes. These are his interests. Hence, one can know childhood interests by observation of various forms of children activities.

At the elementary level the childhood interest are more egocentric and this continues upto sixth grade. After this interests become social. At this stage one can directly ask the child to write down what are the things in which they are interested. This is a direct approach to measure interests. Standardised interest inventories are available, but they primarily measure vocational interests.

REPORT ABOUT INTEREST

When they are asked to write about their interests one can easily draw inferences about the interest patterns of those children.

Standardised interest inventories can be given to children after they gain the working reading knowledge and written expression. These are Kuder Preference Record and Strong Interest Blanks.

When pupils were asked their interest in school, the junior and senior high school age children less often mentioned academic subjects than did the younger children. Older children mentioned sports, industrial and mechanical arts, intellectual self improvement, vocational preparation and relations with other persons of their own age. Young children give a great deal of emphasis to people and relationships with people. Older children's interests are influenced to a great extent by what happens to be available in their environment. As they move through school there is a decline on interest in the schools academic programme and greater interest in social contacts.

DEVELOPMENT OF CHILDREN'S INTEREST

The child is not born will all interests. Interest develop through learning and experience. The child learns various interests by trial and error processes; by identifying with a person he likes, generally peers or adults, and by guidance and direction.

Children's interest parallel their physical and motor development. Interests like other characteristics undergo changes. It changes from simple play to games and sports with involve rules and skilled movements. Acquiring new interests depends upon his readiness to learn and the opportunities available. On many occasions interests become limited bacause of physical handicap, pressure of academic, cultural demands, the emotional

experiences of the child with other objects, persons and activities. Persistence on how long and how frequently and individual works on a particular problem tells us about his interests.

There is individual difference in the interest patterns of children. Very bright children have different interests from that of dulones. Children coming from rural homes, slums, low SES homes have different interest patterns. Development of interest depends upon readiness to learn, his mental capacity, and physical development.

Moreover, the opportunities available for the child are also important. The first born child has more range of interests than later borns. The later borns mostly imitate the siblings. Interests increase in case of good family, large family, good neighbourhood, good peer groups. Interests change with age. Childhood interests are different from that of adolescence period. Interests are rather general and specific as well.

During early childhood the interests of children are egocentric. Gradually contacts with peer groups increase. His interests become socialised. He is more influenced by his friends in developing interests and other environmental pressures.

TYPES OF INTERESTS

Human Body

The baby is interested more in himself and his own activities upto age 3½ years. He is interested also in his own products; urines, feces etc. Before they attain school age, their interests in sex difference begins to grow, and in the latter parts of childhood it reaches a peak. They become interested in genitalia and other sex characteristics at the onset of puberty.

At the beginning the child is interested in the external parts of the body but gradually he explores the internal systems, their names, functions which he gets by exploring his own body and asking questions to others. A sick child becomes more interested in health but in normal cases, by adolescence the child becomes interested in health, appearance, and related activities. Interest in health becomes an obsession in most cases.

Appearance

The young child is very little concerned about his appearance. Boys, however, are more interested in sex appropriateness of appearance. They play with their own sexmates. Boys and girls appear masculine or faminine by using appropriate dresses. The peer group has lot of pressure in this regard. Of course, peer group pressures are reinforced by social acceptance or rejection.

Clothes

Clothes satisfy the interest of the child to a very great extent. The baby satisfies his sense of autonomy by selecting the types of clothes. He selects clothes that gives the feel that he is growing up. He selects attention getting clothes, bright, coloured, new or ornamental. At times he tries to maintain his individuality by wearing clothes like his peer group but with different colour. Before they reach adolescence, they do show the interest in sex appropriate clothes.

Names

The child accepts his name as he accepts his body. Gradually the child becomes interested in his name. He likes his names if social reactions are favourable. Children have a strong interest in their nicknames. Nicknames and pet names become focal points of interest.

They dislike old names, common names, good long names, short names, and sex in-appropriate names.

Religion

Religious practice is more often seen in younger children and religious faith is seen among the grown ups. For development of his interest in religion the home is more responsible than any thing else. Regardless of religious belief every child is curious to know who is God ? Where is heaven ? How do you get that ? His concept of religion changes as he develops. Their belief also vary depending upon training and experience in home and outside. They show interest in religious stories, prayer, idols, and attend religious functions.

Sex

Sex interest becomes more strong after they enter school and have more intimate contacts. The child until by puberty spends most of the time in sex interests. It is assessed through his curious questions and activities. The preschool child asks more questions about sex, origin of babies etc.

Status Symbols

Status symbols are prestige symbols. It differs for various age groups and social groups. The name of the school becomes a prestige symbol for attracting children's interests. A status symbol gives the child satisfaction and attention he craves. The child becomes interested in these status symbols which are concrete and visible. He is not interested in club membership or family background as such unless is helps him to grow.

In early childhood material possessions are the most universal status symbols. The child understands the values of toys, clothes, and other

possessions. The child is interested in the father's occupation and relate it to his economic status by the time the child reaches fourth and fifth grade. Each year children become interested in role and status and these play a great role in social acceptance. Girls are more interested in status symbols than boys. From early childhood, children change their emphasis on quantity of status symbols *i.e.* toys and possessions, to quality when they become older.

When he reaches age six, he explores his own sex organs. Exploration of sex interest may take various forms. They play with members of the same sex, and obtain many incorrect information about sex life.

School

The young child becomes interested in school but as he spends more time in school, his interest declines. His interest in play, games and sport increases. He develops disinterest in teacher and home work interest in school not only changes but children develop specific interest either in academics or in extra curricular activities.

Decline in interest in school is because of various factors. The influence of parents is quite great in developing the interest in school and in school subjects. Young children's activities are also influenced by siblings and peer attitudes. Teacher pupil relationships, and emotional climate in school contributes to children's interest to a significant degree. Sex appropriateness in interest is also seen among boys and girls in school. Boys like many subjects such as : reading, arts, social activities, language etc. Girls on the other hand like these subjects than mathematics and science. Truancy is an expression of negative interest in school. Underachievement and interest in school and school phobia result out of negative interests.

Vocational Interest

Children development their interest in future vocations by reading stories, visiting films, looking at others, hearing people talk of vocations and so on. Vocational interests, undergo changes quite often in early childhood because it is not based on reason but emotional identification. It is related to mental abilities of children. But around secondary school stage stability in realistic vocational interests are seen rather than fantasy choices. Prestige value of occupations, his own attitudes, interest and aspirations in addition to cultural stereotypes influence vocational choice. However, three distinct patterns are seen in the vocational interests of children. Fantasy choices continue into the age of 11 or 12 years. Choices and interests become sensitive from 11 to 12 to end of high school period. After the age of 17 interests in vocations or choices of vocation become more realistic and are based on various considerations.

A teacher should know the interests of each pupil in the school. Instruction should be related and should begin at the point of interest of the child. Unless instruction is related to child's interest it is difficult to gain much, it is not enough to channel learning through the interests of children but broaden the interests of children. Teachers can use optimum of sensory stimulation in a learning situation. Vocational literature can be supplied to boys and girls. Teachers can point out vocational aspects of the subject matter taught. Field trips offer opportunities for observation of people working at various jobs. School can contribute quite effectively for promoting children's interests in school and other activities arranging them in a co-ordinated programme.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. What is interest ? How does it develop ?
2. Describe the methods of ascertaining childhood interests.
3. What are the various types of interest that children displays ?

Write short notes on the following within 50 words each :

1. Vocational Interest
2. School and interest development
3. Implications of childhood interests
4. Hurlock's contribution
5. Strong's interest Blank
6. Question
7. Conversation
8. Reading
9. Drawings
10. Wishes

Write whether the statements are True or False :

1. Strong conceived interest as an aspect akin to feeling.
2. An interest is a learned motive.
3. Children's interest parallel their physical and motor development.
4. The baby's is interested in himself and his body upto age 3½ years.
5. Sex interest becomes more strong after they enter schools and have more intimate contacts.
6. Interest in others decline in schools.
7. After age 17 interests in vocations become more realistic.
8. In early childhood material possessions are the most important status symbols.

13

Development of Intelligence

Since intelligence is related to so many aspects of behaviour and psychological growth, it is of interest to parents and teachers also to promote the welfare of children. What is intelligence any way ? What does an IQ 130 mean ? Are bright children abnormal in any way ? Are children with very large head brighter than other boys and girls ?

Intelligence is first of all a descriptive concept—meaning brightness, brainy, and the like that was a smart things to do, that was a stupid things to do many such remarks.

But what is really intelligence ? Intelligence is what the intelligence tests measure. It is a reasonable definition which does not serve any purpose.

Probably no area of psychology has been the subject of so much controversy as that of intelligence. Psychologists have not agreed upon the basic concept and nature of intelligence. The first idea of defining and measuring intelligence was done by Alfred Binet, who at the turn of the present century was asked by the French Govt. to investigate the causes of retardation in the schools of Paris. Binet conceived intelligence as the sine qua non of scholastic achievement. Terman (1921) defined "intelligence is the capacity for abstract thinking" although Binet did not really define intelligence in any cut and dry manner. For Binet, "it is Judgement or common sense, initiative, the ability to adapt oneself and capacity to learn". Wechsler's (1958) definition of intelligence runs as follows. "Intelligence operationally defined as the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with the environment". For Ravens, it is a capacity for logical thinking and abstract reasoning. One of the operational definition of intelligence was given by Stoddard (1941) which is "Intelligence is the ability to undertake activities that are characterised by difficulty, complexity, abstractness, economy, adaptiveness to a goal, social value, and the emergence of originals, and that it includes the ability to maintain such as activities under conditions that demand concentration of energy and resistance to emotional forces."

NATURE OF INTELLIGENCE

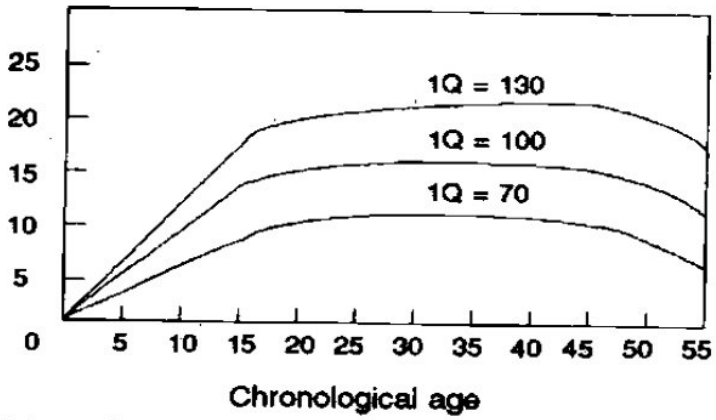
Spearman (1904) stated that in intelligence, there is a general factor of ability ('g') which is found in all performance varying from individual to individual and a large number of specific abilities ('s') which operates in certain performance but not in others. Hence, the nature of intelligence is explained interms of 'g' and 's'. This is known as two factor theory of intelligence. Thurstone (1938) proposed a set of factors known under the concept 'Primary Abilities' (PMA). These abilities are : verbal comprehension, word fluency, number, object associations, memory, perceptual speed and induction, and general reasoning. While the nature of intelligence is limited to seven primary factors, Guilford (1956) conceived hypothetically 120 factors of which a great majority are not yet identified. Thorndike (1927) conceived intelligence as abstract, practical and social. Thorndike defined intelligence in terms of the test; completion, arithmetic, vocabulary and directions (CAVD). This concept of intelligence was very much used by educationists in theory and practice.

The British psychologist, Vernon (1950) conceived intelligence in a different way. He gave a hierarchical nature of intelligence with Spearman's 'G' at the top. The next factors are verbal educational abilities and practical mechanical aptitudes. These were further subdivided into minor factors. The American Psychologist Hebb (1948), a professor of Psychology at the University of McGill talked of three kinds of intelligence, A, B, C, Intelligence 'A' innate neither observable nor measurable. 'B' measures school and related works : 'C' is measured in an intelligence test. Intelligence, 'A' is responsible for the development of 'Schemata'. Cognitive abilities are reflected in intelligence 'B'. Early experience is important in the development of 'intelligence'. The Piagetian concept of intellectual development was not psychometrically measured intelligence but it is one that explains intelligence in terms of assimilation and accomodation and the resulting schemata.

Raymond Cattell's views on fluid and Crystallised intelligence is a synthesis of the British and American view points. Fluid intelligence is a general relation perceiving capacity which operated in all fields, Crystallised general intelligence is represented by those cognitive performances in which habits become crystallised from the application of some prior, more fundamental general ability to these fields. Before 15-20 years of age individual differences between fluid and Crystallised intelligence reflect cultural opportunity and interest. Among adults it reflects 'Age'. Recently Das (1995) suggested PASS Theory of IQ, and Sternberg (1994) a triarchic theory of intelligence considering this as a planning process. This is a brief presentation of the nature of intelligence which is in fact, much varied and extended.

DEVELOPMENT OF INTELLIGENCE

Intelligence does not continue throughout the entire period of one's life. It begins to slow down in rate during the early teens reaches its peak somewhere in the middle twenties. The general shape of the curve is given in Fig. below.

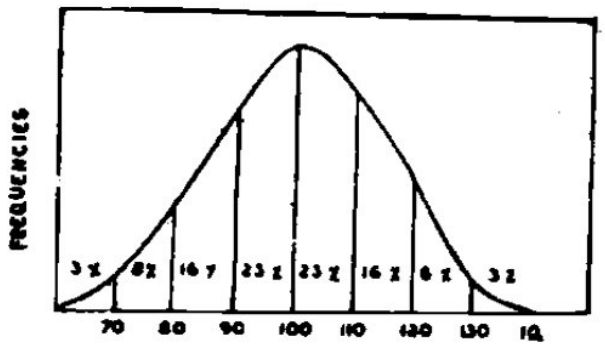


Nature of Mental Growth Curve For Three IQ Levels

It is said that nearly 1/3rd intelligence is developed by age three, 1/3rd intelligence is developed by 6-10, and the remaining 1/3rd by age 16-18. After that it takes a flat rate. From the practical point of view of learning ability and effectiveness of behaviour, the experience gained by older individuals compensate the decline in intelligence if any, after its optimal development around age 16-18. Therefore, the early experience is very vital for depressing or accelerating development of intelligence.

Range of individual difference in I.Q

The distribution of intelligence is fairly normal. The distribution of intelligence obtained from Stanford-Binet Intelligence tests has been calibrated with mean as 100 and SD as 16 show in the figure given below. For Wechsler, the mean IQ is 100 and SD is 15. Deviation IQ is calculated along these lines.



Distribution of IQ in the Population

There are current many tests to measure intelligence in children.

Measurement of Intelligence

Stanford-Binet Intelligence Scale. In about 1890 the French Psychologist Alfred Binet bacame interested in investigating reasoning and judgement. The original scale came up in 1904 which was modified in 1908, and 1911 and later by Terman in 1910 and in 1916, the second revision of the Stanford Binet scale was produced. The second revision of the Stanford Binet scale under the leadership of Terman and Merril came up in 1937 and the third devision was published in 1960 having a single form. The most radical change in the 1960 revision was in the IQ tables which gives deviation or standard score IQs. This was a departure from the previous method of MA/ CA X 100. The revised IQ is a standard score with a mean of 100 and a standard deviation of 16.

This is a verbal test and scoring is done for every six months. This is a very reliable and valid test but it is not culture free. It is administered to individuals from age two onwards.

WECHSLER SCALES

Wechsler's first scale of intelligence was developed primarily for adults. The test which was known as Wechsler Bellevue scale was changed as Wechsler Adult Intelligence Scale (WAIS) measuring intelligence from 16 to 75 age. It has eleven subtests. The verbal subtests are six and performance tests are five. Both the scales are combined to make a full scale.

The Wechsler Intelligence Scale for children (WISC) was developed in 1949 and a revised WISC-R was published in 1974. In the WISCR there are 10 basic tests and two alternates.

Verbal	Performance
General information	Picture completion
General comprehension	Picture arrangement
Arithmatic	Block design
Similarities	Object Assembly
Vocabulary	Coding or Mazes
Digit span (Alternate)	(Alternate)

This WISC-R is meant for use with children 6½ to 16½ years. There is a Wechsler Preschool and Primary scale of intelligence. (WPPSI) published in 1967 meant 4 to 6 year olds having six verbal tests with one alternate (Sentence) and five performance tests.

Raw scores on each subtest are converted into scaled scores. The mean in 100 and the SD is 16. The scales are highly reliable and valid and are always above 90. The scores indicate certain degree of intellectual functioning.

CULTURE FAIR TEST

Culture fair tests are nonlanguage tests. In earlier period the term "culture free" was used to denote this but this has been dropped from the literature.

One of the first attempt was made by Cattell to prepare the culture fair intelligence scale. This test is based upon the premise that general intelligence is a matter of seeing relationship in other things with which we have to deal, that the ability to see relationships can be tested with simple diagramatic or pictorial material and that for a test to be usable in different cultures the pictures are universal and not pertaining to any cultural group.

Another "Culture fair" test was developed in Great Britain by Raven (1938) is known under the brand name "Progressive Matrices." It is a nonverbal test series requiring the subject to solve problems presented in Abstract figures and designs. There are three forms of the scale.

Standard Progressive Matrices-containing set A, B, C, D, E, each having 12 matrices is meant for adults ranging from age 11½ onwards. Coloured Progressive Matrices containing sets A, Ab, and B each having 12 matrices are meant for children betwen ad 5 to 11½. Advanced Progressive Matrices Part 11 with 12 matrices and Part 11 with 24 matrices are meant for quick assessment of individual's ability. The tests are fairly reliable and valid and are widely used as measures of general intelligence and reasoning this is a group as well as individually as administered test.

PIAGETIAN SCALE

One test that has been prepared based on Piagetian approach is the concept assessment Kit-Conservation Kit. It is meant for children for four to seven years old and measures the qualitative change in thinking about physical objects that a child attains in moving from the preoperational stage to the stage of concrete operations.

The child is shown two physical objects such as two glasses of water. One object is then changed in appearance. The child has attained conservation when he knows that the quantity remains same even though it looks different. The younger child has attained conservation when he knows that the quantity remains same even though it looks different. The younger child attends to perceptions while the older child can over ride perceptions to make logical conclusion with concerte objects. This test has 3 forms Form A, Form B, and Form C. Form A and B have both six subjects. Two dimensional space, Number, Substance, Continuous quantity, Weight and discontinuous quantity. Form C has the above six subtests and the test on area and length. The statistical information available on the test area generally and indicate this as a promissing instrument.

FACTORS AFFECTING INTELLIGENCE

Heredity

The role of heredity and environment on intelligence has been discussed as examples of the general problem of nature vs. nurture and shall not be repeated here excepting stating broad generalisations. The general evidence goes in favour that intelligence is inherited and the influence of environment is contributory to the tune of 20 per cent.

Age

Age curves of intelligence have always been a question of great importance. Studies of Bayley (1955) and Terman and Merril (1937) have shown that there is improvement in mean scores until the late teens or early twenties. Our knowledge about Indian child is limited as studies in India are test centered than child or norm centered.

Culture

Responses in a psychological test is influenced and coloured by culture in which the individual lives. Even there are cultures where time is not considered important. Hence, intelligence test having a speed factor and time component is likely to show cultural variations in measured test scores than the culture fairness of the test developed. Culture affects through child reading, in providing early experience but within limits of heredity.

Rural Urban Difference

Rural children as a group score lower than urban children on intelligence tests. Terman and Merril observed wide difference among rural-urban children between 15 to 18 years of age by using Stanford-Binet test of intelligence. The difference was as great as 12.2 points of IQ. On the WISC the rural children scored less than the Urban children and the difference was large in the performance scale. In our studies (Panda, 1981) rural children also scored less in Raven's progressive matrices test than urban children.

Socio-economics Status

Socio-economic status is highly linked with urban rural origin. It is true that interactions in lower class homes are restricted, impoverished and as such there is the adverse effect in the development of intelligence. The test scores become low because children are used to such testing in lower class homes. They can't in many cases understand the language of the items and as such they score low and give evidence of low intelligence. Since 40 to 50 per cent Indians are below the poverty line this has large implications for Indian people.

Deprivation and malnutrition are concommitant effects of low SES and thereby affects adversely the development of intelligence. Even though the child inherits intelligence, because of early malnutrition, lack of stimulation, emotional and general deprivation intelligence scores are depressed. It is a vicious circular notion but the facts remain that intelligence can develop well under favourable conditions of nourishment than otherwise within the limits of heredity.

Use of Intelligence Test

In recent years intelligence has not been accepted as the sole predictor of learning and achievement. It explains however, nearly 50 per cent of the total variation in learning. It permits greater understanding of pupil behaviours and ability in school.

Intelligence is being used alongwith adaptive behaviour scores for tracking children into special schools and special classes. The imbeciles and idiots are denied admission to school or any academic programme they can't learn.

Intelligence scores tell the teacher what the child could do, not what he will do since motivation, emotional blocking, work habits, teacher behaviour etc. are related to learning. Inspite of these, there is a strong relationship between IQ and school learning.

It is true that the measures used for assessing intelligence may have wide limitations for giving a correct score regarding the intelligence level of a child because of measurement errors, cultural variation, socio-economic factors etc. but there is nothing wrong with the concept of IQ and its use. It still remains as the greatest predictor of learning, if not sole predictor.

Intelligence test which measure verbal and quantitative ability separately offer a promise for diagnosis of learning difficulties as well as offer a scope for applying remediation. Factorial measures enable us to fair point on the weakness of a given factor or factors.

In the field of intelligence, a strong notion persists *i.e.* intelligence remains relatively constant over the years, a dull child becomes a dull adult, a gifted child becomes gifted etc. This does not mean that if determined efforts are made changes in IQ will not be made. There is a considerable empirical evidence pointing out IQ changes due to interaction of environment especially during the early years of life and as a result of continuous and comprehensive enrichment programme. Hence, IQ does not remain exactly constant over the years.

Correlations between IQ of children with their own IQ at age 16 are given below for showing that IQ is not always constant over the years

although wide variability is also not expected.

Age	*Boys*	*Girls*
7	.58	.54
8	.64	.58
9	.58	.53
10	.74	.70
11	.75	.73
12	.79	.79
13	.78	.81
14	.83	.82
15	.90	.91

This indicates increased stability after age 14 or 15. The relation between child's intelligence at 1 with that of 16 is zero. Only after 4th year one can expert some degree of consistancy.

Teachers and parents need to concentrate on providing each child which a psychologically enriched environment further which the child can develop his maximum potential and attain self actualisation. They should also not expect dramatic effects *i.e.* a dull child becoming light or an average child becoming gifted. It develops within reasonable limits but a good environment definitely prevents depression of inherited ability. This should be the consolation for us even if we cannot increase the substantially as IQ is relatively constant.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. What is intelligence ? How does it develop in children ?
2. What is the role of heredity environment on the development of intelligence ?
3. What is the significance of intelligence ?
4. What are M.A. & IQ ? How intelligence is measured ?
5. What is the nature of intelligence ?

Write within 50 words each :

1. Stoddard's view on intelligence.
2. Raven's view on intelligence.
3. Spearman's 'g' and 's' factor.
4. Thurstone's Primary Mental Abilities.
5. Hebb's ABC intelligence.
6. Deviation IQ.
7. MA and IQ.
8. Race and IQ.
9. SES and IQ.
10. Rural/urban and IQ.

Write whether the statements are True or False

1. Terman defined intelligence as capacity for abstract thinking.
2. Raven develop progressive matrices test.
3. For Binet intelligence is a judgement the ability to adapt one self and capacity to learn.
4. Wecshler thought intelligence is a global capacity to act purposefully, to think rationally and to deal effectively with environment.
5. Measurement of intelligence by using tests are not that accurate so far real intelligence of the individual is concerned.
6. Das developed the planning process concept of intelligence.
7. Triarchic theory of intelligence is recently developed by Sternberg.

14

Intellectual Development

Jean Piaget (1896-1980), born in Switzerland is known throughout the world for his contributions to intellectual development. He is a biologist by training. But he was a philosopher, logician, psychologist and an educator. His researches and theorizing of intellectual development are based on observations of his own children : Laurent, Jacqueline, and Lucienne. Piaget calls himself as a genetic expistemologist. He has an outstanding record of achievement.

At the age of 10, he published his first research article on "Albino Sparrow" in the journal of Natural History of Neuchatel. He was immediately invited by the Director of the Geneva Museum of Natural History to join as a Curator, which was withdrawn when his age was discovered.

As a University student majoring in Biology he became interested in Psychology. He studied in the psychological laboratories at the University of Zurich in 1918 and in the experimental laboratory of Binet in Paris from 1919 to 1921. His first major work was published during 1924-1932. The first notable book came out in 1928. "The Judgement and Reasoning in the Child" which brought him wide reputation both in USA and Europe. From 1929 to 1939 he formulated his concepts of 'Grouping' and published the book. "The Child's Conception of Number" in 1941. "The Child's Conception of Space" was published in 1948 and "The Child's Conception of geometry" was published in 1960 followed by the early growth of logic in 1964. Piaget is a genetic epistemologist who was concerned with nature of knowledge, the structure and processes by which it is acquired. Piaget argued "that much of our knowledge comes not from without but from within by the forces of our own logic...a fact often forgotten in education."

Piaget was strongly influenced, by his training as a biologist. As such he makes constant reference to the interaction between an active organism and the environment. According to him intellectual activities are adaptive. Intelligence is seen as an aspect of biological adaptation. It helps the child to cope, to organise and to reorganise thought and action. Piaget describes

this adaptation as a balance between assimilation and accomodation. This dual process determines intellectual development throughout life.

Assimilation means 'incorporation and organization of experience into existing schemata', something new is interpreted in terms of a past experience with which the individual is familiar. For example, a young child while playing catches a ball and relates the experience to a 'grasping' schema. In a classroom situation the child who understands and follows what the teacher is telling is really assimilating the incoming information into his won schema of learning. The child fits unfamiliar stimuli into his own available mental structure or oganization *i.e.* all flying objects are 'birds'. Hence, assimilation is somewhat similar to the concept of generalisation.

For intellectual development, a child must also be capable of adapting its schemata to accomodate perceptions, stimuli, and inputs which were previously impossible to assimilate. It involves the formation of a new schemata. It depends on the ability of the child to change his schema or structure in order to adapt to the new environment.

For example, suppose a four year child who expects to see girls dressed in skirts and boys in pants', sees a child with both long hair and pant playing with a toy. He will probably perceive this person as a girl and accommodate to the situation.

Imitation of parent's behaviour is the most clear example of accomodation.

Assimilation and accomodation are complementary to each other. Succintly speaking assimilation is the force which makes one want to act and think in terms of past experience. On the contrary, accomodation is the force which makes one to modify action and thought to meet demands of new or changed situation. The concept of a balance between the two theoretical constructs is central to Piaget's theory of intellectual development.

Piaget's theory is both genetic and hierarchical. He believes that mental development is a process that begins the day the infant is born and intellectual behaviour at any age evolves directly from prior levels of behaviour. The roots of all intellectual development are in early sensori-motor behaviour.

Piaget divides the entire period of intellectual development into four basic stages :

1. Sensori-motor period (0-2 yrs)
2. Preoperational period (2-7 yrs)
   (*a*) Preconceptual (2-4)
   (*b*) Intuitive (4-7)
3. Concrete operations (7-11)
4. Formal operations (12 +)

It may appear from this categorisation that the stages are specific. But Piaget uses the term 'stage' or 'period' in a more wider sense and for ease of recognition. The age specifications are not fixed boundaries rather these are approximations. It simply suggests that all stages of development subsequent to the initial stage incorporate all previous stages. This is the sequence of events which is important rather than the ages which are suggested.

SENSORI-MOTOR PERIOD

Piaget uses the term 'Sensori-motor' to describe this period because it involves co-ordination of sensory perceptions and motor movements. This period is sub-divided into six stages through which progressively complex pattern of intellectual behaviour appears.

Reflex (0-1 month)

During this stage an infant's motor responses are largely innate reflex actions; such as; sucking movements to nipple become more prominent, Grasping, crying, movement of arms, trunk, head also appear regardless of stimuli. The infant assimilates all stimuli through reflex activities. Just after a few weeks of birth one can observe simple accomodation in children. For example, the infant begins to search for the nipple if it cannot be seen. At birth he has no awareness about the permanence of objects. Further he is unable to differentiate between himself and the environment. The child is completely egocentric.

Primary Circular Reaction (1-4 months)

The child after one month of post-natal life begins to make simple co-ordinated movements between hand and mouth. Simple activities appear repeatedly such as : repetitive sucking, closing and opening of the fists, fingering the bed etc. The child does these activities without any intent or purpose. Thumb-sucking becomes habitual. Eyes follow the moving objects. Such co-ordination implies accomodation, on the part of the child. Yet the child's activities lack purpose or deliberate intention.

Secondary Circular Reaction (4-8 months)

After about four months of age an infant makes purposeful movements to achieve a simple aim and actions like grasping are extended to shaking and pulling. Movements of the hand, eye and mouth are co-ordinated. The child repeats responses which produce interesting results *e.g.* the child repeatedly kicks his legs in order to produce a swinging movement in a toy suspended over his crib. Child's behaviour becomes increasingly oriented

forward objects and events beyond his body. Intentionality appears at this stage and there are clear rigns to sustain and repeat acts. Piaget calls this act as reproductive assimilation *i.e.* the infant tries to reproduce events that are unique to him. Children look for objects or toys in places where he predicts they have fallen. He develops awareness of permanence of objects. But the child still remains egocentric. He sees himself as the primary cause of all activity.

Co-ordination of Secondary Circular reactions (8-12 months)

The child now is able to solve simple problems. He uses a response already learned to obtain a specific goal object. For example, he moves away the pillow in order to obtain a toy hidden behind it. The child establishes means-end-relationships. He begins to see that other objects in the environment as sources of activity (causality). He selects certain means or ways of responding before initiating the final behaviour. In other words, he demonstrates the ability of anticipation or provision and meaning of certain events. In the previous-stage actions of the child were always dependent on the immediate actions in the environment. Jacqueline would cry when alcohol is put on the cut, not before it. The child acquires constancy of shape and size of objects. Learning that an object continues to exist in space even if it cannot be seen makes an important step forward in mental development of the child. It indicates the beginning of reasoning and anticipatory tendencies.

Tertiary Circular reactions (12-18 months)

In the beginning of second year of life the child attains higher level of operations. He begins to form new schemata to solve new problems. The child engages in active experimentation and exploration and the balance shifts from assimilation to accommodation.

The child begins to experiment and through a trial and error process develops new means. Piaget describes this active trial-and error experimentation as the tertiary reaction or a stage of problem solving behaviour. For example, the childhood previously knocked the pillow with his feet to get the toy may now do the same with his feet or use a rattle to push it down. The child varies his movements instead of repeating something mechanically or in a stereotyped fashion. The child begins to manifest the constructive original elements that Piaget regards as characteristic of intelligence. When a rattle is hidden in 'A', it is searched for in A; when it is hidden in 'B', it is searched for in B. Thus elementary problem solving behaviours appear in children at this stage of development.

Mental Combinations

Between 18 and 24 months, the child shows evidence of symbolic or representational behaviour. In a very elementary fashion he begins to represent sensori-motor movements in mental acts. Piaget calls this stage the stage of mental combinations. It is characterised by "invention of new means through internal mental combinations." When the child wishes to obtain some end for which he has no habitual available means, he invents one. He does this by internal experimentation and not by overt trial and error process. For example, when Lucienne plays with a doll carriage where handle comes to the height of her face, she rolls it over the carpet by pushing it. When she comes against a wall, she pulls walking backward. Since this position is not comfortable, she takes a pause, turns back pushes the carriage.

The dual process of representation and invention are basic development of this stage. The child is able to use imaginary manipulation of reality. The child imitates the behaviour of others and begins to show conceptual symbolic behaviour. As a result of Piaget's observations of cognitive processes in infants, Ricciuti, (1965) has tried to examine the mental development of children. One year old infants recognised similarities among objects, suggesting the presence of primitive conceptual skill. When a tray containing 4 yellow cubes and four gray balls are kept in a scattered manner the one year old could touch successively either the yellow cubes or 4 gray balls but when objects are subtle, infants do not display this primitive conceptual behaviour or grouping. This study suggests certain individual difference in rate of conceptual growth of children but the basic pattern or sequence which Piaget emphasized remained the same. Form here on the child moves into the preoperational period during language and cognitive skills develop.

PREOPERATIONAL PERIOD

This stage is sometimes referred to as 'preconceptual' or beginning of symbolization in thinking. The term preconceptual was used because the infant is only capable of forming a concept of single object rather than a class of objects. The period includes the age range of 2 to 4 years.

During this period the child constructs symbols, uses language, and indulges in make-believe play. He begins to develop imagery, distinguishes between 'words' and 'things'. The range of cognitive functioning and thinking are expanded. Play and imitation begin to appear although the child cannot immediately construct such operations. The child does not understand the nature of classes and class memberships. He regards every object or situation as an 'instance'. He does not have the ability to understand the

dimensionality of an object. For example, he takes a 'red pen' as 'red pen'. He does not understand that 'red' is one of the colours and 'pen' is one type of article used for writing. When young children during this age range are given toys sort out, it was found that they only sort them on the basis of similarity or superficial quality. They cannot give a verbalisation that accurately describes the grouping. Neither the child follows a deductive or inductive method in his thinking activities.

Preconceptual thought is extremely concrete and strikingly egocentric. The child thinks everything in terms of his own point of view and does not regard other opinions as valid. For example, you ask a young child of 4 years, what does the moon do ? The child simply says that the moon follows him (egocentrism).

Egocentrism is a major hindrance to cognitive development. The child of 4 to 6 does not reflect on his thoughts. He never questions his thinking even when contradictory evidence exist. Egocentrism or self centeredness is not intent but the child is unaware that he is egocentric and consequently never tries to resolve it. Around 6-7 egocentric thought begins to give way to social pressure and the child begins to accommodate others. Interaction with pears and playmates dissolve egocentrism.

In the area of language and thinking also the child tends to display egocentric attitudes and centration. The child at this stage makes little attempt to adapt his speech to the needs and interest of his listeners. The preschool child's thinking tends to be static, focusing at one feature at a time. He is unable to combine various features into integrative patterns. This is known as centration. Centration means the child's habit of attending to one salient aspect of a problem neglecting other ones, thus distorting reasoning. For example, you put water of equal quantity in two indentical tall thin vase. If the contents of one of these is poured into a broad jar, the child will deny that the quantities are identical. Instead, he will say that the tall vase has more water. This means, he has centered only on height and failed to decenter that width and height both determine the amount of water.

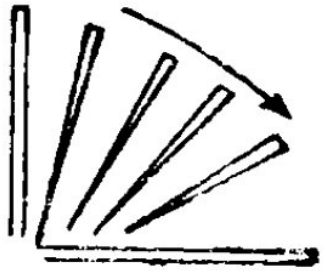
The child knows at age 4 that 9 is greater than 7 but when we put 9 dots close in one line and seven dots far apart in another line, the child of 4 invariably says that the second line contains more dots. This is because the child is unable to decenter and his perceptual evaluation dominate the cognitive evaluation. This behaviour pattern continues upto age 6-7.

1st line	000000000	.....(9)
Second Line	0000000	.....(7)

Piaget also uses the term transductive reasoning to describe that the child during this stage fluctuates in his reasoning from the particular to the

particular without logical sequence and generalization *e.g.* 'I have not had my sleep, so it is not morning'. In this case the child argues by implication that occurrence sleep is followed by occurrence of morning even though the two events are not related to each other.

Further, if a pencil is held upright and allowed to fall, there are series of changes. But even after noticing the fall, the preoperational child cannot reproduce the steps. This transductive reasoning hinders the cognitive growth and does not enable the child to follow transformation.



At this age children are unaware of the inconsistencies in their thinking. Two common forms of transductive thought are identified by Piaget. These are Juxta position and syncretism. In syncretism, the child fails to relate various observations into a consistent whole. For example, a child at this age may say, an aeroplane flies because it has engine and it is heavy; a bird flies because it has wings and it is light. Similarly in juxta position children display drawing the pictures of various parts of bicycle and putting them in a non-function relationship. Such behaviour indicating indiscriminate relationships are examples of Juxta position. The children are often selfish and difficult at this stage.

During age 4 to 7 there is decrease of gross absurdity in thinking and reasoning. The child conceptualises more. He has now some ideas of classes or concepts. He groups objects by similarity. He uses the words 'some', 'all' but still his ability for logical thought is limited. He continues to centre and cannot conserve problems. For him tall = big = more are same and convey the same meaning.

One of the most important characteristics of this stage is irreversibility. Reversibility means the ability of the child to maintain equivalence in spite of change in the perceptual field. If A=B, then B must be equal to A. But child at this stage cannot conceive of this reversible operations. Another example can be used to illustrate this phenomenon. A child is shown two rows of 8 coins each.

0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0

He agress that they are same. Then one of the line is stretched.

0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0

Now the child says, these are different. He cannot maintain equivalence of number in the face of perceptual change. In other words the child during

ages 4-7 does not develop a concept of invariance. His thinking is still dominated by perceptual process. He fails to realise that if water is poured back to the thinner and taller container it will be same as original. In reversible thinking the individual can retrace these steps mentally and arrive at the conclusion that the amount of water has not been changed.

The child's understanding at this stage is restricted to his own perception and his comprehension of objects is still based on single salient perceptual aspects of a stimulus. He intuitively equates the height of a container with the amount of liquid it can hold as if he had learned an equation that reads long = big = tall = more.

Many of these changes in conceptualisation and ability to group objects are related to his language abilities at this age and these are very important in verbal mediation, concept formation, and problem solving. Gradually the child's thought processes are liberated from perceptual dominance and become less centered.

Conservation is the conceptualization that the amount or quantity remains same regardless of any change in shape or position. Conservation of number appears around age 6-7 years. So also conservation of substance begins to appear towards the end of 7th year. Various attempts have been made to increase the ability of the child to conserve through instruction and using various reinforcement techniques. But Piaget always states 'experience is the key'. It comes through exposure, manipulation but not by teaching the child how to conserve. Children remaining at home give evidence of conservation almost around the same age as school going children, across all cultures. Qualitatively the thought of the pre-operational child is different from that of the sensori-motor child.

According to Piaget language serves three consequences to mental development.

(*i*) The child exchanges his ideas with other persons which helps the *socialization process.*

(*ii*) There is the beginning of thought and the child thinks internally by using words and signs.

(*iii*) There is internalization of action and actions become more symbolic rather than perceptual-motor.

Piaget further observes that there are two types of speech :

(*a*) Egocentric Speech

(*b*) Socialised Speech

From age 2 to 4 the child lacks communicative speech. His speech is egocentrics. He speaks in the presence of others but not necessarily to others. The child repeatedly uses 'I' 'I Say', 'I have', 'I am' etc. in his communication

with others. But between age 4 to 7 language becomes intercommunicative. Children clearly exchange ideas. Use of 'you', 'she', 'he', 'they' are added while conversing with others. Speech becomes socialised. Language facilitates logical thought. In deaf and mute children logical thought starts a bit late or at an interval of 1 to 2 years delay.

SOCIALISATION OF BEHAVIOUR

Behaviour is considerd social when it involves clear exchanges of ideas and the child's socialization begins when the child starts initiating other people. At age 2 the child reproduces imitations even when the persons or objects are not present. During pre-operational period the child plays games with rules, and makes verbal communication with others. While in play he shows development of co-operative behaviour, awareness, and observance of rules. As a result of social activity, especially sharing and playing with other children and linguistic development the child slowly gains awareness of alternative points of view. His thought processes become liberated from perceptual dominance.

CONCRETE OPERATIONS (7-11)

During this period the child's reasoning process becomes logical in relation to concrete operations or objects or persons. His thought processes are no longer perception-bound, egocentric and transductive. Instead, children are able to understand transformation. It is not the final stage in thought development because the child is still restricted to concrete as opposed to abstract thinking.

Piaget believes that the child after age seven is able to classify objects on the basis of similarities, classify ideas into a logical systems or ordered system. Upto the age of about seven years a child quite easily picks out all the red counters from a set of counters of different colours. In doing so, he performs an external action with concrete objects. A time comes when he thinks of a set of red counters in the absence of any counter physically in front of him. This stage of affairs is called internalisation of a concept.

The most important systems or concepts of classifications a child is capable of handling are described below :

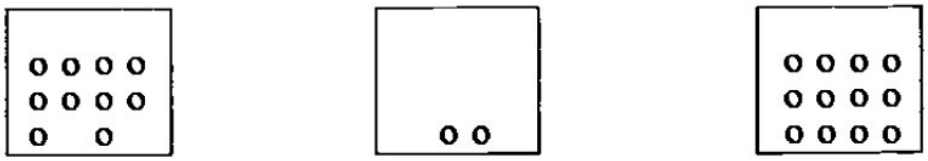
CLASSIFICATION

An example will illustrate the operation clearly. A child is shown a box containing 13 wooden beads of which 11 were brown and 2 are white. The child is given two other box and is asked to put them in the separate boxes. When the child does this, he shows the ability to classify.

Once this is done, the child is asked, 'Are there, more Wooden beads or more brown beads ?' At ages :

2-7 years the child says more brown beads

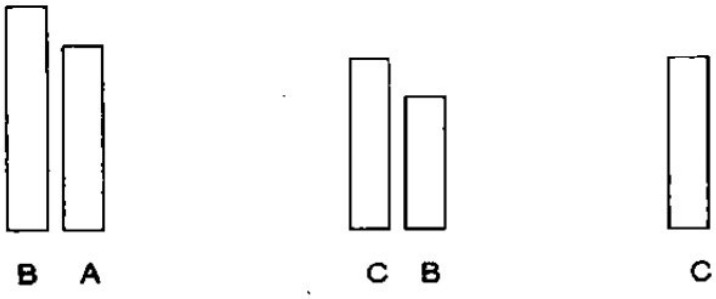
7-11 years the child says more wooden beads



At the concrete operation stage the child can simultaneously consider two kinds of classes or comparisons. Since the concrete operational child has the ability to decenter, he makes classifications correct. Similarly the child develops classifications concepts like odd and even numbers; animals, plants, mathematical concepts like sets or Venn diagrams.

SERIATION

This refers to placing related objects in their correct order or succession. In other words, it is the ability of the child to mentally arrange elements according to increasing or decreasing size. For example, if we show to the pre-operational child two pencils of different length A, B, he can visually comapre and say 'A' is shorter than 'B'. If he is then shown 'B' & 'C' while 'A' is hidden, he can say 'B' is shorter than 'C'. If the child is asked to compare 'A' and 'C' while 'A' is hidden, the pre-operational child cannot answer because he does not see the objects.



But the child in concrete operations stage will say A B, B C, hence AC. He can mentally order the events. Seriation learning like conservation typically occurs at different age levels in an invariant sequences. Some of the milestones in seriation are :

Seriation of length-age 7

Seriation of weigth-age 9

Seriation of volume-age 12

Analogus to concept of seriation is the concept of equivalence : A = B, B = C, Hence A = C. In primary school much time is devoted to seriation

exercises in mathematics, history (sequence of dates), Geography (weather recording) and Nature study (growth).

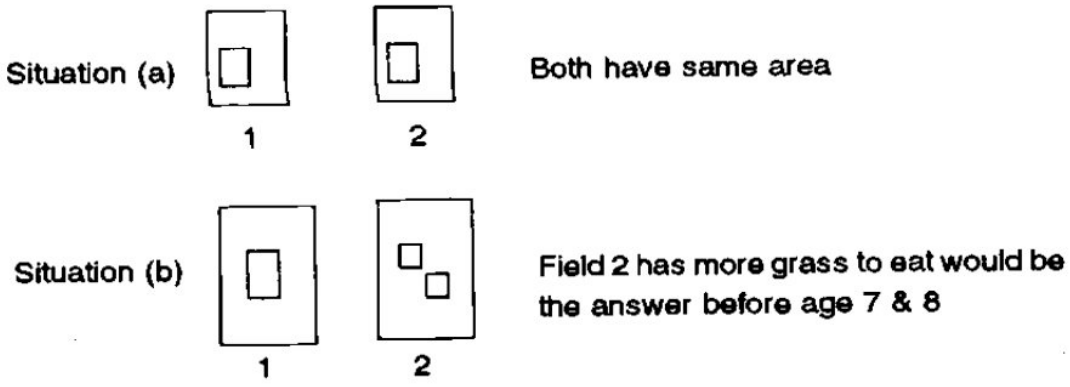
REVERSIBILITY

Concrete operational thought is reversible. For example, a child is shown three balls of the same size each of a different colour (ABC). The balls are placed in a cylinder in the order of ABC. The pre-operational child will say, that will exist from the bottom of the cylinder in the same order ABC. The cylinder is rotated 180. He will say, the order will be same ABC. He is surprised when he finds them in CBA order. But the concrete operation child has no trouble with the above problem. He can rotate it back and forth and bring the balls into ABC order. The child after age 7 acquires the ability for reversible operations which indicates a higher level of intellectual functioning.

CONSERVATION OF AREA

The term conservation has been explained earlier. It has also been stated that conservation of number develops towards the 6th year of age and conservation of substance is seen by the end of seventh year of development. In reality, however, conservation with exception to that for volume are all seen during the period of concrete operations.

Conservation of area for example, appears around age 7 to 8 and that of weight around 9-10. But volume conservation remains until 11 and 12. An illustration would make the concept more clear. For example, in a typical situation, the child of 7 and 8 years of age is asked which cow in the following situations has more grass to eat ?



But the 7 and 8 years old will say both areas are same.

Conservation of volume

Let us take case of volume conservation. Water was poured into two beakers of same size and the child said water in both beakers are same (situation 1).

Situation 1 Situation 2

In situation 2, when water from one of the beakers was emptied and poured into a narrower breaker, the child under age 11 or 12 years invariably said that it is more in the new beaker. In other words, even though the child at 11 years has shown reversibility, equivalence, decentering characteristics in other areas of conceptualizations his volume conservation still remains to be developed after age 11 and 12. However, many of the internalizations are complete before age 11.

MENTAL REPRESENTATIONS

It is only during age 7 to 11, the child develops the capacity of internalization or mental representations. He can describe the whole sequence of events of any act *i.e.* going to the market and coming back, which was not possible at age 4.

CASUALITY

Piaget says that the child does not understand the relationship between time and speed until age 10 to 11. Generally if we ask a child below age 10 years, which one of the two cars moves faster ? The child say (a) the one that overtakes or (b) the one that reaches the goal first. The child does not consider the points of starting and whether the path is shorter than the other before age 10 or 11 years. In other words, the concept appears a bit late in the process of development.

GROUPINGS

Piaget believes that the concrete operational child gives evidence of grouping or the ability to generalise. Five such structures or groupings are mentioned as the characteristics of the concrete operational child.

(*i*) Law of combination, composition or closure : Two distinct classes may be combined to form a comprehensive class which includes both the previously distinct classes *e.g.*, all boys and all girls = all children or A + B = B.

(*ii*) Law of inversion : For each operation there is an opposite operation which annuls it, or two classes combined to form a comprehensive class may be separated *e.g.* all children – all boys = all girls.

(*iii*) Law of associativity : If several operations are to be combined then order in which they appear is of no value. A + (B + C) = A + B + C.

(*iv*) Law of identity : When the operation is combined with its opposite it is annulled *e.g.* travel 5 miles East and then 5 miles back to West, then one is back to the starting point.
or A – A = O

(*v*) Law to Tautology : With exception of combination of numbers *e.g.* 3 + 2 = 5 whenever a class is combined with the same class it remains the same class *e.g.* all girls plus girls = all girls. In other words a classification which is not changed.

Piaget devised many ingenious experiments to demonstrate how children perform these operations. From these experiments he concluded that after age 7, the child's thought is considered reversible. But at the stage of concrete operations some children continually find verbal reasoning difficult and even at age 11 cannot cope with all conceptual problems.

FORMAL OPERATIONS (12 +)

The child's cognitive structure reaches maturity during this period. After this period there is not qualitative change in the cognitive development, only quantitative variations take place.

Concrete operational chidren cannot deal with complex verbal problems, hypothetical problems, or problems involving future. The child in the formal operation period can deal with the past, present, and future, and that too both at verbal and non-verbal levels. The child after age 11 years is able to :

(*a*) organise data
(*b*) reason scientifically
(*c*) generate hypothesis

All these abilities are applicable to the following conceptual categories of problems :

(*i*) Combinatorial thought
(*ii*) Complex verbal problems
(*iii*) Hypothetical problems
(*iv*) Propositions
(*v*) Conservation of movement.

COMBINATORIAL THOUGHT

Before age 12 the child cannot visualise and understand partwhole relationships. He does not think of all possibilities. For example, in a given situation 5 different type of liquids are kept in 1, 2, 3, products yellow colour 4 and 5 contain bleaching. The child is asked to produce yellow colour. The child during 7 to 11 do mix two liquids at a time and leave the problem and

goes. But after age 12, children test all possibilities until 'yellow' solution is arrived at.

VERBAL PROBLEMS

It happens so that children prior to age 12 fail to solve problems of verbal nature *e.g.* Bina is fairer than Rita : Rita is darker than Sima; who is the darkest of the three ? It is for this reason many of the arithmetic books do not contain problems of this nature.

HYPOTHETICAL PROBLEM

The formal operation child has the ability to derive logical solutions from assumptions which has a greater validity *e.g.* suppose cola is while. The concrete operational child will say no it is black and stops thinking.

The formal operational child will start with this assumption and go ahead. Thought is selfconsciously deductive and resembles a scientist. It may not fit reality.

PROPOSITION

Around age 13, the child comprehends the concepts of proportion, ratio, etc. For example, he understands that an increase in both sides will keep the balance equal.

$$W/L = 2W/2L$$

ABSTRACT RULES

Formal thought is rational and systematic. What number is 30 less than 3 times itself ? If you ask the formal operational child this question then he will say.

$$X + 30 = 3X$$
$$30 = 3X - X$$
$$\therefore \quad X = 15$$

In other words, he can set up an equation to come to an answer.

CONSERVATION OF MOVEMENT

Movement conservation appears late in development and almost concurrently with that of volume. For example, a pendulum can be made swing faster or slower by adjusting the length of the string holding it. The shorter is the string the faster is the movement. The child under 12 emphasizes on the weight of the pendulum to control the speed but the child after 1 concentrates on the length keeping the weight same. By age 15, the child becomes sure that the length is the only factor affecting the speed or movement.

It is seen that instead of blind trial error activity, the child takes a rational outlook towards problems. This is the principal component of formal

operations. And Piaget's observations of the sequences in cognitive development seem to be essentially correct.

IMPLICATIONS

Piaget's contributions to learning and thinking are not gross literary speculations. Teachers in primary school will recognise in Piaget some valuable contributions for educational practice. Secondary school teachers who also resisted change in curriculum content with equal tenacity find Piaget quite useful and pragmatic. The Plowden Committee came very nearer to the idea of a break around age of 12-13 between primary schooling and secondary curriculum.

More specifically stated, Piaget does not propagate that intellectual development can be accelerated greatly by any kind of training or instruction. But at the same time he believes in proving opportunities for the child to explore and experiment upon. Teacher's duty, Piaget conceives, is to provide the opportunities.

Activity methods in primary school lay stress on the importance of children manipulating objects with widely differing properties of colour, shape, form etc. This together with discovery, classification, construction and analysis of materials becomes essential for natural development of concrete reasoning. Adaptation becomes a painfully slow process but is a gradual process and a child moves forward by small incremental steps when previous experience is assimilated.

At the secondary stage teachers should take every opportunity to point out similarities, equivalents, opposites, relationships and other group structures of increasing complexity. It is not simply a question of maturation, that standards of thinking will improve naturally as pupils approach the sixteenth years of age. It is a slow structural process and there must be a match between curriculum and cognitive development of the child.

When of course, the effect of direct teaching cognitive skills is open to question; teachers can use analytical questionning and setting individual work in the form of graded exercises and thought provoking problems.

Piaget stresses the educational significance of learning in a social context. He believes that group discussion on a common problem, provided children have some idea of experience about it, is invaluable in the development of formal reasoning and logical argument. He emphatically suggests that teachers should not be authoritarian in their approach to lead discussion. They should listen patiently and suggest alternative approaches and draw attention to gross examples of illogical thinking.

Replications of Piaget's experiments and suggestion indicate that his theory of child development is basically valid. Although most of the findings are based on Piaget's observation of his own intelligent children, yet this is in many ways most productive and least provocative of all his writings. He was most active till the last moment of his life.

Gross (1974) stated, "There is a paramount obligation for every practising teacher, whatever be his subject, in or out of school, directly or indirectly, to promote and develop standards of thinking and reasoning. If both school and home fail in this, the young adolescent is left defenseless against the onslaught of subtle defectors and persuadors with powerful channels of mass communication at their disposal."

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. Describe Piaget's veiws on pre-operational development of children.
2. Describe Piaget's views on sensori-motor development of children.
3. Describe Piaget's views on concrete operational development of children.
4. Describe Piaget's view on formal operational development of children.
5. What implications Piaget has for teachers and parents ?

Write short notes on the following within 50 words each :

1. Schemata
2. Egocentrism
3. Classification
4. Transductive reasoning
5. Mental combination
6. Groupings
7. Conservation
8. Irreversibility
9. Seriation
10. Syncretism
11. Socialised Speech
12. Assimilation
13. Accommodation
14. Tertiary circular reaction
15. Preconceptual thought.

Write whether statements are True or False :

1. Rational thinking appears in sensory-motor stage.
2. By age 12 all logical thinking is complete.
3. Child's thinking is influenced by play.
4. Number concepts appear in age 2½ years.
5. Egocentrism is an indicator of formal thinking.

Fill in the blanks :

1. Jean Piaget is well known for his contributions to.....development of children.
2. Conservation of area appears.....age.
3. Mental combination is a characteristic of the.....child.
4. Seriation appears at age.....
5. Cognitive development is.....specific not age specific.
6. There is a decrease in gross absurdity in thinking and reasoning during the period.....
7. Conservation of volume appears at age.....
8. All boys and all girls are.....
9. A + (B + C) = ...
10. Combinatorial thought appears at age.....

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Development of Creativity

In every society, there are children who are considered to be creative. Francis Galton, a British Bio-Genetist who got interested in psychology of individual difference, first talked about creativity or creative imagination in 1869. Due to the influence of behaviourism, the term creativity was not even mentioned in any literature upto 1930. Few passing references by Slowen (1930) and Guilford (1930) did appear. Educationists and Psychologists were bogged down on the concept of intelligence and their interest was diverted to creativity when the factor analytic studies of Guilford identified divergent thinking ability of children and others. Wallas (1945) continued to describe creativity as synonymous with creative thinking involving the stages of preparation, incubation, illumination, and verification.

After 1950 the situation become different. Oshborn (1953) analysed the anecdotes of eminent people and published a book on Applied Imagination and immediately after World War II established a Creative Education Foundation in U.S.A. which is now located at Buffalo Descriptive and qualitative research began since then in the area of creativity.

Torrance one of the giants in creativity research mentioned that during 1959-60 there were 2 articles as against 121 in 1971-72 and 1250 in 1976. Guilford, in his Presidential Address to American Psychological Association in 1973 observed that the average pages in Educational Psychology books discussing creativity was 10.6 as against 27.8 in the text books of 1973 and at present it is an important area of research having immense educational relevance. The journal of Creative Behaviour got started in 1967. In recent years, the teacher-education programmes have greatly increased emphasis on creative education approaches within all subject disciplines (Parnes, 1976).

Who is then a creative child ? Or better say What is creativity ? Although there is no university accepted unequivocal definition of creativity, yet creativity means an ability to create, a multidimensional concept having its genesis in Guilford's 'Structure of Intellect'.

Originally the term meant an ability for good aesthetic sense, ability to make reflective discussions and capacity for taking initiative in addition to introversion and intuitiveness. Guilford, (1952) in his book 'The Nature of Human Intelligence' described creativity in terms of divergent thinking and production and transformational ability. These abilities include fluency, flexibility, originality and elaboration or redefinition.

CHARACTERISTICS OF A CREATIVE CHILD

A creative child is one who gives evidence of being fluent, flexible original and elaborative.

Let us understand what these terms mean operationally. Fluency means the frequency with which ideas come to one's mind after a question is put. For example, a child is asked, tell me how many things you know those are solid, flexible and coloured. One can just count the number and find out his ideational fluency. Associational fluency is known by asking the child to tell the opposites, synonyms, homonyms, find relationships between different objects. Expressional fluency is observed by asking an individual child to complete a sentence using *e.g.* W–c–e–n (We can eat nuts. Willie comes every night, Weary cats evade nothing etc.)

Flexibility has a different connotative meaning. It is not the number but variety of responses that a child makes. For example, child is asked, tell me the use of Brick. It this is a question and the child answers, building a house, using a paper weight, putting it under legs of a cot to rise the height, powdering it to make some art on the floor etc., then these responses give evidence of flexibility. But if he answers building road, building house, building staircase etc. these become indicators of fluency because here functions do not change.

Adaptive flexibility or originality or uniqueness of response is another characteristic. This is measured by telling sotries before the children and asking them to give the title. In one of the stories, for example, a child was told "There was a woman who do not talk with her husband for long. She was operated. Then she talked so much that her husband got bored and then he had to undergo operation so that he can listen to everything that she tells loudly. Only then peace prevailed in the house" and they were asked to give a little to this story. Many titles were given such as : 'A Man and His Wife'. 'Talking and Hearing'. Medicine Triumphs, but these were not original or unique. The child who worte 'Happiness through Deafness, Operation-Peace of mind. The Deaf Man and the Dumb Woman' certainly proved their originality.

Elaboration or redefinition is the fourth characteristic but a minor one in terms of its inter-relationship with other creativity scores and its load on

the total score of creativity. It indicates the expansion of an idea by listening to an abbreviated form. No true score can be given but qualitatively one can infer the divergent thinking ability from this.

It appears that Guilford's approach to defining creativity is heavily leaned toward the processes but it does include evaluation of products emphasized by Lehman and Dennis (1972).

My own hunch is, when people talk of mental ability, be it IQ or creativity etc. they loose sight of an important aspect *i.e.* behavioural and affective side of the person. A creative person has certain behavioural characteristics other than the intellectual or cognitive characteristics. He is self-confident, self-assertive, socially bold, humourous, happy, impulsive and sensitive. In conceptualisation of creativity, therefore, an integrated personality product process approach is necessary but which has seldom been under-taken.

Torrance (1966) who has spent decades in creativity research stated "Creativity is a process of being sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so on : indentifying the difficulty, searching for solutions, making guesses or fomulating hypotheses about the deficiencies, testing and retesting these hypotheses and possibly modifying and retesting them : and finally communicating the result".

It appears, therefore, that like most behaviour, creative activity represents to some extent learned skills. There may be limitations set on these skills by heredity but through learning and within limitation or heredity creativity can be boosted. A major breakthrough in this direction has been to identify the talent and then manipulate through intervention to boost it.

GROWTH OF CREATIVITY

Kilpatrick (1900) using inkblots on children reading in grades 1 through 6 observed that the number of objects reported decreased with increase in grade level with a marked slum in grade IV, corresponding to age 8. Simson (1972) used a non-verbal method of testing imagination and asked children to use dots in making any thing. Mean number of figures drawn decreased at grade 4 and 8. Lehman (1953) observed the peak period of achievement of various professionals and concluded that superior creativity usually reaches its peak around the thirties and thereafter declines gradually. All these studies are isolated attempts.

Torrance (1962, 1963) investigated the development of creative thinking abilities in American school children. Discontinuities in development was observed at ages 5, 9, 13, 17. His study in 1967 across cultural groups included children of grades 1 through 6. There is a decline in the varbal and

figural ability measured by Torrance's test of creative thinking, at grade four. Negro children in grade 1 were at a lower level than White children, From grade 2 onwards the fugural ability of Negro children become either superior to that of White children or at least equal. Verbal ability showed a slower growth rate. Children of Samoa did not show development of creative ability beyond grade 3. German children showed increased growth from grade 1 through 5th with high rate in 3, 4, 5 followed by a decline at grade 6 and thereafter. Children in Australia showed slow but linear increase in the growth of creativity especially on the verbal TTCT scores. Observation of creativity scores of Norwegian and Indian children in general point out that peak period in creativity development occurs around 5/6th grade followed by a decline. Although discontinuities in development is a marked feature of creativity yet such a generalisation is tentative in the absence of research investigations in the line.

Torrance's cross-sectional studies showed that upto age 16 there is a steady increase in creativity scores in the U.S. culture with decreased scores at age 5, 9, 12 and 17. But Kogan (1973) said it is quite premature to talk about declines in creative ability over ages when the various tests used to measure creativity is saturated with 'g'. Whatever decline has been observed in cross-sectional studies may simply be the products of decline in other intellective functions *i.e.* intelligence and cognitive style.

MEASUREMENT OF CREATIVITY

How do we then identify or measure creativity in children ? Measurement of creativity has created a real problem and five standard tests are currently available of which two are quite well known.

(*a*) Torrance Test of Creative Thinking

(*b*) Wallach and Kogan Test of Creative Behaviour.

Guilford's test of Divergent Thinking, Getzel's and Jacksons' creativity indices, and Mednick's Remote Association Test (RAT) were in use for some time but these tests correlated quite high with the Torrance and Wallach and Kogan and also are not very comprehensive in their way to be in the field. For example, Remote Association Test of Mednick as a measure of creativity is not warranted in terms of the research evidences that exist on this test and has not received unequivocal acceptance. Not only the theoretical rationale behind RAT is unsound but the findings reported are mixed. It has same pitfalls as any verbal test of IQ *i.e.* its culture specificity. Only the constructors of the test (Mednick and Mednick, 1964) have reported positive findings.

Torrance, Professor and Head of Educational Psychology at the University of Georgia, U.S.A. has developed a test to measure creativity. This has two parts : Verbal and Non-Verbal.

The Verbal Sub-tests include :

(*a*) Ask and Guess questions
(*b*) Product Improvement Tasks
(*c*) Unusual Uses
(*d*) Just Suppose questions
(*e*) Unusual Questions etc.

The Non-Verbal sub-tests are :

(*a*) Picture Construction
(*b*) Complete the Figures
(*c*) Parallel Line Test.

The whole manual discusses the details of these tests but let us take a few examples to know how the tests look like. In ask and Guess games the children are shown pictures. The pictures in an elf like animal which is busy in looking its reflection on water. The child is asked to tell or write the number of questions relating to what. How and why of the situation and its consequences ?

In the product improvement test there is a folding type of toy of an elephant and the child is asked to join it in any way to produce a new animal. The unusual use test includes asking the child to tell the use of paper box which nobody knows. If the sky will fall what will happen ? In all these tests fluency, flexibility, originality and elaborations are measured. These scores a derived separately for verbal and non-verbal test. The test is presented in booklet form. Torrance's test as a reliable and valid test has strong merits and applicability.

Using this test Yamamotto (1964) and Torrance (1962) reported that the relationships between intelligence and creativity is near zero or sometimes negative when IQ is 120 or more : within the IQ range of the average or normal (90-100) the relationship between creativity and school achievement is not large enough. IQ and creativity are different constructs although points of similarities could be observed in the test items of both. Wallach (1970) has supported this conclusion.

Wallach and Kogan based their test on the formation of associative elements into combination which are related to creative behaviour. The items are graded from simple to complex. The child answers the questions like a play situation under verbal and non-verbal condition. In the verbal part for example, the number of objects that you know, what use you can make of newspaper ? What meanings you can get from the following lines ? It mostly measures originality and fluency. In Wallach test one does not count the wrong responses to determine the creativity score, whereas in Torrance it is given zero.

Using Wallach Test Ward (1968) observed the creativity-IQ relationship is .03 justifying their independence than interdependence with reference to the upper range of IQ. In other words, a child who is high intelligent is not usually and necessarily a high creative child. Search for independent measure of creativity is still progress.

Jackson and Messick (1972) suggested that tests of creativity should have unusualness, appropriateness, transformation, and condensed description but the available tests only tap the first two of the abilities.

The next question that arises is what about Indian conditions ? Can we with any degree of certainty measures creativity in our children. The answer is yes. Professor Baquer Mehdi (1973) has developed a test of creative thinking with verbal and non-verbal components and standardised it on Indian students. The verbal test has sub-tests (*a*) what would happen or consequences 4 mts. (*b*) Unusual use test using a stone, stick and water, 5 mts. (*c*) New Relationship tests 5 mts. air, water, three house etc. (*d*) Product improvement 6 mts. Scoring is done according to Torrance guide lines. The test has been standardised on rural and urban children.

In the non-verbal part we find (*a*) Picture Construction 10 mts. (*b*) Incomplete figures 15 mts. Triangles and eclipses 10 mts. These tests combined together, give us an index of creativity, having no or little relationship with IQ. This test can be used more effectively in identifying creative children in our schools.

Here again one may ask should we search for talents using an IQ test, a creativity test or take school achievement marks ? Creativity test may be used because Intelligence accounts for a minor portion of variation in creative performance and by itself is no means an adequate measure of creativity. Further, there is also little relationship between creativity and achievement, whatever may be the pitfalls in measurement. That is why since 1963, in U.S.A. National Talent Organisation has awarded scholarships for Creative Talents in Arts and Science and I would feel that we may do the same once we have a good instrument. The NCERT NTS examination is a step in this direction.

DEVELOPMENT OF CREATIVITY

It is possible to develop or boost creative talents in children ? If so, what implications it has, for educational practice and inservice teacher preparation ?

Creativity is an innovation in education said William (1973) Director of National Schools Project in Minnesota. Although the term creativity was used by early educators such as Froebel and Pestalozzi in the 19th Century and it appeared quite frequently in the educational parlance during the progressive educational movement of the thirties, yet it remained for the

educational psychologists of the sixties to outline training strategies for improving creativity in children.

Osborn (1957) introduced the technique of Brain storming. Sydney Parnes was a strong advocate of this technique. This is a very simple procedure. The teacher simply encourages the pupils to ask as many questions as possible, however, absurd or unreal these may be. In group situation this may not be very effective said Torrance but when the teacher asks pupils to ask questions orally it has been found to be quite effective. Writing of questions or ideas those come up may not be stressed as children might forget something while answering.

Torrance and Myers (1963) advocated among many others the technique of active search or hypothesis formulating approach which ultimately proved to be inferior to the creative reading approach for stimulating creativity. In the creative reading technique pupils are told. "When you read you think of the various use of reading materials, you think how best you can apply, think in any possible manner when you come across any idea. Do not read with a mind to have negative criticism but with an open mind to think of alternative". This type of instruction to reading can be given by teachers and parents interested in creative educational process at no cost.

We must know that learning does not occur only in a cognitive environment but in an emotional climate where reward, acceptance and tolerance prevail. Torrance recommended that teachers can encourage the pupils to ask more questions and recognise their merits, reward them, tolerate disagreements, accept child's imagination, understand the social value of his questions and do not create any kind of repressive atmosphere in the classroom. These are a few inexpensive had outs for a classroom teacher.

The concept of idea books introduced by Torrance is another innovation in the field. These books contain 50 to 100 pages, each page having a picture and instructions for pupils to write down what they think about it. For example, if the picture is of an incomplete animal, the child is required to name the animal and describe the characteristics. This exercise is available for children at various grades and is a profitable investment for promoting and developing the talents of children.

Synectics is another such exercise. Familiar things are presented as if they are unfamiliar. Children are asked to respond *e.g.* Did you read down ? Can you read a clock upside down ? It is difficult but can you ? Gorden (1961) called it a creative problem solving approach or deferred judgement but it has been a quite effective technique in classroom management of creative talents.

Davis (1969) has presented four techniques in his book "Thinking Creatively : a guide to Creative imagination" which are more appropriate from the points of view of classroom theacher : These are :

(*a*) **Part changing method**. The child is told about chalk. You see it has colour, shape, size. Think of a chalk that has 15 colours, 10 shapes, 5 sizes. Change each part and think of creating something original. You can take any object and run this exercise.

(*b*) **Checker Board.** It is similar to cross word puzzle. In one side for example, the characteristics of one individual is written and the other side has the educational situation. The student is asked to fill up the type of technique that is to be followed to teach him. This can be done using different games and can become a routine exercise.

(*c*) **Checklist.** Seven characteristics such as : colours area, size, new/old. add/substract, rearrangement, new model are written in a paper. The children are asked to use these dimensions when they describle books, vehicles etc.

(*d*) **Finding something similar.** Here the child told that your school has no large space for cars to park. But parents come with their cars. Where can they park ? While thinking of the plans please keep in mind how books are arranged in a book store, shoes are kept in a shoe shop, how ants/bees live etc. The child then can possibly try to think of a multistoried garrage. Many such exercise can be thrown open to the pupils in a classroom to activate the creative thinking process.

PAKSA

This technique was developed by J.W. Taylor (1961) and refers to the Pack Corp Scientific Approach in honour of the Packaging Corporation of America. This is a modification of other techniques. The technique consists of nine steps :

1. **Pick a Problem.** Define your problem in writing. State what's wrong-what needs fixing. State your objective and what result you seek.

2. **Get knowledge.** Get known facts. Get new knowledge. Study written references. Experiment, explore, research deeply and broadly. Talk with informal people. Check your findings and put them in writing.

3. **Organise knowledge.** Put your information into understandable form. Sort it, organise it and write it.

4. **Refine knowledge.** Screen knowledge for relationship and principles. Match fact against fact. Look for similarities, differences, analogies cause and effect, combinations, patterns, apply stimulating questions, if new ideas still are slow in coming to mind.

5. **Digest.** Let the conscious mind its "second wind". Put the subconscious to work, Relax, take up another problem. Work at a hobby or enjoy some mild deversion-until refreshed. Then....,

6. **Produce Ideas.** Ad lib or concentrate anew on your problem until ideas begin to emerge. As they occur, don't stop judge them, produce them write them. Build up as many alternatives as you can.

7. **Rework Ideas.** Check your new ideas for flaws. Examine each idea objectively, question it, challenge it, test it, rework it, improve it, follow it through.

8. **Put Ideas to Work.** If the approval and acceptance of others are required, sell your ideas. Plan each sale. Allow enough time. Get participation. Use "Samples", Stress customers interest. If new methods and skills are involved, teach them.

9. **Repeat the Process.** Until it becomes a natural habit.

10. **Role of a Teacher.** A teacher must encourage children not to give traditional answers, rather should give some whimsical answers which are somtimes good.

- Prize rather than punish their individuality;
- Recognize the talents even though the views are not one's own or they are not within the camp;
- Be cautious in editing what the child writes lest he may be offerded;
- Provide just suppose activities ;
- Encourage them to record their ideas whenever they come;
- Provide materials (fairly tales) which development their imagination; and allow children to have sometimes day dreams and accept their natural tendency to be different from adults.

My own observations have convinced me that an old head pandit busy throughout the day in private tutions can only cause tension and despair in a child, raise the child body temperature through his anticipated presence, and frowning eyes, can see that the child rote memorises the whole curriculum within a month's time and go through it over again. He will certainly miss the target of making the child learn far lass making him creative.

Torrance stated often-"it does indeed seem possible to teach children to think creatively. The most successful approaches seem to be those that involve both cognitive and emotional functioning, provide adequate structures and motivation, and give opportunities for involvement, practice and interaction with teachers and other children. Motivating and facilitating

certainly make a difference in creative functioning but differences seem to be greatest and most predictable when deliberate teaching is involved. Teachers, through their behaviour in an instructional setting can make a lot of difference in the cognitive and affective life of children but they must be sure of their objectives, whether they count to foster creativity in pupils or their own self-fulfilling prophecy''.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. Describe the characteristics of a creative child.
2. Outline the growth of creativity in children. How can creativity be developed ?
3. What steps can be used to promote creativity ? Give examples.
4. Define creativity and explain the process and product approach.
5. Explain with example PAKSA technique.

Write notes on the following within 50 words each :

1. Synectics
2. Brain storming
3. Paksa
4. Concept of creativity.
5. Torrance Test of Creative thinking.
6. Wallach and Kogan Test of Creative thinking.
7. Role of teacher
8. Checker Board
9. Checklist
10. Finding something similar.
11. Part changing method.

Write whether the statements are True or False :

1. Creativity is a process.
2. Creativity and intelligence are same but in different terms.
3. Synectics is not useful for creative thinking.
4. It is possible to teach children think creatively.
5. Teachers and Parents should promote uniformity in children.

Fill in the blanks :

1. .....is the originator of creativity research.
2. .....wrote ''the nature of Human intelligence''.
3. .....is the most important characteristic of creativity.
4. .....introduced the concept of brain storming.
5. .....introduced the concept of idea books.

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Language Development

Language is a form of communication. It is one of the main things that distinguishes human baby from an animal. The form of language may be written, spoken, sign language etc. Speech is a form of language in which articulate words or sounds are used to convey meanings and thoughts. In fact simple vocalisation is not considered as speech unless it is associated with some meaning or objects or persons *i.e.* da, da must refer to one person, not to all men. Pronounciability is the second criterion of speech. In other words, the baby, must clearly pronounce the words so that these are clearly understood by others.

Speech a kind of behaviour that helps the child to move from a world of egocentrism to a world of socialised relationship. The child with a better language is able to establish better social relationship in play, in neighbourhood and in small groups. The child feels more secure when he develops a command over language. He expresses his thoughts, feelings and attitudes more freely.

Learning to speak is a long and complex process. The baby does not utter a single word until the age of one year or a little more. In the early phase *i.e.* prior to using words the baby babbles, cries, makes explosive sounds for communication.

In early days most vocalisation takes the form of crying. With increase in age crying decreases and speech increases to convey feelings. Following crying, the child makes explosive sounds commonly "cooing". Babbling appears around 6 months, although it depends upon the development of his vocal mechanism, and his incentive to use it for speaking out. Babbling is considered as 'play speech' but it lays in foundation for later development.

Speech is a skill and like all other skills it is learned. The learning of speech or language is closely associated with corresponding developments in speech organs, mouth development, and ability of the child to associate sounds or words with meaningful events, objects, and persons. Although rudimentary speech appears before 12 months yet, speech readiness appear

between 12 and 18 months in most babies. The baby learns the language by imitating the speech sound of others or models, associates meaning with words following the conditioning and reinforcement systems but a major part of the speech also occurs through insight and contiguity. On the basis of various language studies, it seems that speech or language has two different aspects : language production and language comprehension. It can be clearly stated that insight and understanding play a role in language comprehension; and conditioning, reinforcement, imitation are more related to language production. There is in fact, a vast difference between the two processes. The child understands more than he can speak.

Lenneberg has outlined the development milestones in language development which is given below. This gives a clear picture of language acquisition from pre-speech stage to the period when language is well established.

STAGES OF LANGUAGE DEVELOPMENT

Period at the end of	*Vocalisation and Language*
3 months	The child cries less. He smiles when some one talks before him. He produces 'cooing' a sound which is vowel like in character. The 'cooing' lasts for about 10-12 seconds.
4 months	The baby responds to human sounds more definitely. He turns his head. His eyes seem to look for the speaker. He occasionally produces some chuckling sounds.
5 months	The child utters some consonants sounds although they are acoustically much different from sounds of matured language.
6 months	Babbling vocal sounds become quite common. This appears when child sees something or hears some sounds. Most common sounds are ma, mu, da, or di.
8 months	Reduplication becomes frequent. Intonations become distinct. Speech or utterances signal some kind of activity.
10 months	The baby tries to imitate sounds but he does not become successful. He tries to differentiate between words which is seen from differential adjustments. Usually the first word is acquired by all children at this age irrespective of culture.
12 months	The child's speech become holophrastic or syncretic. He uses single words to express complex intentions. He understands some words, simple commands (show me your hand, show me your eyes etc.) He frequently uses 'mama', 'dada' and quite clearly too. The average vocabulary is 3 words.
18 months	The child begins to combine words *i.e.* where papa, see ball, eat cake etc. The child has acquired a vocabulary of at least

	3 and less than 50 words, but on the average it is 22. Words may include thank you, come here, but there is little ability of the child to join any of the lexical items into spontaneous two item phrases. His ability to understand progress quite rapidly.
24 months	The child has a vocabulary of more than 50 words. He is now able to join two words and make a phrase. He can name almost many things in the nearby environment. He becomes more interested in communicating using language. He uses only nouns and verbs but no prepositions, and conjunctions. His speech is more or less telegraphic. Inflections are also absent in his speech. His vocabulary exceeds 50 words by this age, the average being 272 words.
30 months	Everday the child learns new words. He does not babble any more. Each utterance is meaningful and purposive. He becomes frustrated when others fail to understand him. He uses sentences consisting of two to five words. The child repeats adult language or what is called as echolaliac speech. Sentences and phrases have characteristics of child grammar. Omissions are noticed in repetition. For example, the child hears, "I can see a cow" but utters 'see Cow'. The child's speech is not very intelligible by this age. However, the following semantic relations are typical in early speech.
Identification	—See Ball
Location	—Book there
Repetition	—More milk
Non-existence	—All gone
Negation	—Not wolf
Possession	—My ball
Question	—Where Papa ?
	The child at this age seems to understand that is said to him.
3 years	Vocabulary of children at this age is almost at a level of 1000 words. Nearly 80 per cent of what children say are understood by others. Grammatical mistakes continue. The child begins to use a few prepositions (in, on, under); Copulars (is are); and infections (ed, ing, etc.) Morphemes improve gradually over the next two years. Average vocabulary is 896 words.
4 years	Language is well established. The child's use of syntax are slightly different from adults but soon the child learns to use correct language in style, form, and grammar. Actually the difference between child's and an adult's language at this stage is more in style and less in grammar. Average vocabulary for the 4 year old is 1540 words, and the average vocabulary for the 5 year old is 2000 words.

During School Years

The young child makes dramatic progress in acquiring grammatical competence and semantic knowledge between the time he beings to use two-word sentence at the age of 18 months and age of 4 to 5 years, within this period of 30 months he essentially achieves mastery of complex structure of native language which is reflected in both comprehension and production of sentences. This is seen among the nursery school children. However, mastery of syntax and semantics appear long after the nursery school.

Between the age of 5 to 7 years of grammatical rules are incompletely developed *i.e.* use of have; nominalizations *i.e.* using a verb as a noun, *e.g.* walking is a good exercise; and use of conjunctions *i.e.* if, so. Redundancy in language also decreases gradually.

Psycholinguists have explained language in terms of deep and surface structure instead of following the traditional method of language acquisition. According to them the six year old can understand the sentence in which subjects of the deep and surface structure are same but not when they are incongruent *i.e.* 'Lucy was impossible to seek'. It was impossible to see Lucy'. After age 9, they have little difficulty in understanding these variations in sentence.

Comprehension of passive forms *i.e.* 'the cart is pulled by the bullock' develops relatively late. The five year olds never use passive forms in spontaneous speech. Only when they reach age 7 and are given some examples of passive forms, they can use passive forms in speech. This too, is possible only in 50 per cent of cases. Longitudinal studies have shown that syntax are complete between the age of 5-14 years. Children use greater variety of grammatical patterns, variety of words, and their mean length of sentences increase in number and complexity. Significant changes in language acquisition occur mostly at two different periods : Between 5-7 years and between 11-12 years corresponding to cognitive development.

At the semantic level, children use words in their vocabulary, rapidly. But even at age 8, the child still confuses the meaning of 'ask' and 'tell'. He gradually uses the connectives : because, therefore, but, although, etc., beginning from the elementary school years. At about age six, because, then, therefore, are used to express time relations than explaining the causal relationships. All the three words are used as if they are semantically the same. Understanding of 'But', 'Although' become perfect only at age 11.

Piaget pointed out that the complex meaning and relationships are understood only after age 11 and 12. Language becomes first perceptual and then cognitive. To illustrate this Piaget has explained how the meanings of the words brother, sister, girl are not properly understood by 5 year old but

after age 9, children understand the meanings and relationships quite clearly. At age 5, the child says, sister is a girl I know, brother is a boy. But at age 9 or above they understand the relationships, that they are born from same parents, live in the same house etc.

Before age seven, children do not apply the meaning of certain words in double way. Words infact have both physical and psychological meanings. For example, bright, hard, soft, sweet cold can be applied to describe physical objects. The same words can also be applied to describe human beings, thoughts and actions. Psychological meaning depends upon the level of cognitive development. Therefore, Piaget said that language development is really complete only during the period of formal operations. Higher form of syntax and semantics in language can only appear after age 11 or 12.

DEVELOPMENT OF LANGUAGE HABIT

Every child learns that the words have specific meanings. Learning to pronounce a word may be relatively easy but to comprehend the meaning of word that has more than one meaning is really difficult for the child.

Attachment of meaning or understanding the meaning of words follows the technique of conditioning. At first, the child makes random circulatory responses. He utters words and listens and then repeats. In the second situation or thereafter, he hears others saying a word and he repeats *i.e.* he utters by listening to the speech sound of others. Subsequently, he hears someone telling a word and simultaneously the person or object is present. In this situation of simultaneously occurrence, the child associates the word with the concrete object or person. When he sees the same object or person and nobody says anything, yet spontaneously he utters the 'word' that he has learned to associate. By this way he attaches meaning to a word. All meanings are first learned in connection with specific object or person. It is only later he generalises the meaning to similar situations.

As the child becomes older he is able to learn abstract words and abstract relationships.

SPEECH DEFECTS

Defects in speech appear either due to malformations of the speech organs or due to emotional disturbances. Some of the common speech disorders are mentioned below.

Lisping

This consists of letter-sound substitution, Children, while pronouncing 'Simple Simon' pronounce, 'Thimple Thimon'; 'Red Rose' as wed wose'. This happens due to defective teeth, jaw or fascination for using 'Baby

speech', In other words, children due to one or other reason substitute the for 's' or 'z', 'w' for 'r' and so on. Soon after their permanent teeth appear, their lisping decreases. In rare cases due to organic defects or space between teeth lisping may be seen.

Stammering and Stuttering

Stuttering is a kind of repetitive speech. It results out of failure of speech muscles to co-ordinate. Sometimes it appears that the person does not know suddenly what to say, often accompanied by stammering. There is check of speech followed by sudden speech which then is followed by no speech and so on. Children when asked to say something before the class they sutter but they can sing fairly well. Between age 21-2 to 31-2 stuttering is due to lack of correlation between thought and language. Later on, it appears due to poor vocabulary, overprotective parents, dominant and over anxious parents. These factors are responsible for its persistence.

Stammering is a type of stuttering *i.e.* tonic stuttering. This means prolongation of the sound of the opening letter of a word *i.e.* b....bath. Stuttering real refers to repetition of the letter b-b-b-b-bath. Tonic stuttering or stammering occurs when a child cannot get a word out. Some children have problems with certain consonants and not in another. Clonic stuttering is the repetition of the same sound over and over again. Instead of saying bath he will say b-b-b-b-bath. The speech therapist handles such cases and cures them.

Stuttering is a form of speech impediment which is common in preschool children. The most complicated task the child faces during preschool year is the process of learning to talk. The child during age 2 to 3 years has so much to say and his vocabulary does not permit to do, lapses into stuttering. Stuttering is seen more in boys and less in girls. Early stuttering disappears if the parents do not make an issues of it and if they let the child finish his utterances without correcting him, or calling attention to his difficulties or otherwise interrupting him.

The child who stutters is under serious mental strain. Parental pressure to force a child speak well confused coherant speech leading to stuttering. A child who is shy among strangers is unable to get his words out. Embarrashment is also a cause of stuttering. Private worries *e.g.* death or divorce in a family, left-right confusion, change in the family etc. also cause stuttering in children. Stuttering is not consciously produced by the child. Hence, it is useless to keep silence the child who stutters.

To treat stuttering, build his sense of security and self confidence. Do not press him to talk. Listen him patiently and with interest. Talk with the

child in calm manner. Join him in play where much talking is not involved. Stuttering under these conditions disappear. Security blanket offer comfort to children.

Secondary stuttering persisting into the school years is serious enough to demand professional help.

Slurring

Sometimes the speech of the child is not clear. This indistinctness or slurring is due to inactivity of the lips, paralysis of vocal organs, timidity, excitement or fear for strangers etc. It mostly appears during post school years. Slurring can be corrected if the child opens his mouth while speaking so that sounds can come out. They speak so fast that no body can understand what they speak.

Cluttering

Cluttering is a rapid, confused, and jumbled type of speech. It is akin to stuttering. But the more one tries to control it, the more of it you shall have. Children whose speech development has been delayed give more evidence of cluttering.

Speech defects besides lisping, are more common in boys than among girls. Mc Carthy attributes, this to greater insecurity among boys than that in girls.

FACTORS ASSOCIATED WITH LANGUAGE DEVELOPMENT

There are various view points whether language is inherited, acquired by imitation or due to socio-cultural conditioning although the fact remains that language is the basis of communication and there is universality in the pattern of language acquisition. The rate in which language is developed, however, is influenced by some background factors.

Health

When the child suffers from severe and prolonged illness during the first two years of life, language development is impaired. Illness not only delays the development of speech organs but isolation and seclusion confines communication with adults concurrently.

Intelligence Level

There is a strong relationship between intelligence and language development. Babblings at an early age are better predictor of child's intelligence. Children of high intelligence show better linguistic competence both in vocabulary, length of sentences uttered, and correctness of sentence structure.

Socio-Economic Status (SES)

Children who are born in upper socio-economic class families talk sooner, talk better and talk more than those of lower group children. The latter group of children suffer from listening elaborative language, suffer from under and over stimulation, and commit more articulation errors. The relationship between SES and language ability is well established and the gap in language competence and production becomes more between high and low SES groups as age advances.

Sex

Boys lag behind girls in learning to talk. Compared to girls the mean length of sentences uttered by boys is less. The comprehension vocabulary is also small in case of boys. Boys commit more grammatical errors and their pronunciation is less accurate. Sex difference in favour of girls remain and become quite pronounced with every increase in age.

Family

A healthy, stimulating and rewarding environment facilitates language development, particularly the relationship between mother and child. In contrast, the children reared in institutions are slow in learning to talk, and remain retarded in language development throughout thier lives. This happens primarily because of lack of adequate adult contact and personal relationship in the institutional set up.

Twins and triplets relatively slow in speech development. Those who are only children they are definitely superior in linguistic skill. Children from bilingual homes, in general, have greater difficulty than those from monolingual homes in learning languages. Rate of language acquisition is obviously influenced by the degree to which the child's language leads directly to rewarding or gratifying goal states. In other words, family interactions are quite important in language development of children.

TECHNIQUES FOR ACCELERATING LANGUAGE DEVELOPMENT

Children vary greatly in rate of language development. So chronological age is a poor index of linguistic competence. According to Brown (1958) the best index of language development is MLU or mean length of utterances. Certain techniques have been suggested to accelerate the rate of vocabulary growth, and language comprehension in children during eary childhood years.

Schlanger (1967) has stated as well as established experimentally that :

(*a*) telling stories to children, exposing them to different play things, naming objects before them, describing various objects;

(*b*) acquainting children with different concrete objects and teaching words; and

(*c*) encouraging children to play, and communicate with playmates verbally etc. have been effective in accelerating the rate of language acquisition in children.

Stearns and Spicker (1966) developed some of language lessons and these lessons were given to children everyday during school hours. The children were told how to construct a sentence with prepositions, connectives, conjunctions, verbs etc. They were helped to describe the food during the dining hours. They were taken in field trips and were assisted to describe what they see. It was found that such training through well structured lessons increased the MLU of the children in the training group. The Russian Psychologist Luria (1957), has supported such a stand in the acquisition of language.

Montessorie technique of playing with materials or sensory training enables the child to speak and increase his working vocabulary. Smith (1965) examined the effect of an intervention programme on language acquisition. He gave language lessons to the experimental group children three times a week for months and each session lasted for 45 minutes. The children responded through verbal and motor activities. It is found that language training has helped the experimental group to increase by 6.75 months compared to their actual age. The children who were not given training were 44 months below their CA in language acquisition.

Bernstein (1967), one of the most noted British Social Scientist emphasized the role of parents in the language development of children. He firmly believed that children who live in families where, parents use restricted language code, homes are crowded, there is more of over stimulation, parents punish children than explaining things to them, the children's language becomes inferior compared to children whose parents speak elaborative language and explain things to them. For example, instead of saying 'stop', 'Idiot', or giving a 'slap', to children, if the parents say ''This activity is bad, If you are doing this, you are going to loose yourself, If you do away with this, others will be pleased. By this the child is exposed to different words, expressions and he tries to acquire a few out of them.

The following is a very good example of how a lower class mother and middle calss mother interacted with their children and how the middle class mother's use of elaborative code is helpful for the development of language ability in children.

While travelling in a bus the mothers instructed the child in the following way :

Low SES Mother	*Middle SES Mother*
Mother — Hold on tight	Mother — Hold on tight, Darling.
Son — Why ?	Son — Why ?
Mother — Hold on tight	Mother — If you don't, you will be thrown forward and you will fall.
Son — Why ?	Son — Why ?
Mother — You may fall	Mother — Because if the bus stops suddenly you will jirk forward on to the seat in front.
Son — Why ?	Son — Why ?
Mother — I told you to hold on tight. Did not I ?	Mother — Now darling, hold on tightly. Don't make a fuss.

Bernstein (1967) suggests if the parents especially the mother handles the child's curiosity questions, thinking, and reasoning abilities by encouragement, explanatory answers, use variety of language to answer, then the language abilities of the child is accelerated. Hess and Shipman (1965) extended this kind of reasoning and confirmed the findings of Bernstein. In fact, American studies have shown that a daily 15-20 minute session on language training in school has been productive in improving the language skill among the low SES and deprived children. Russian experiments on the other hand, emphasized that concentrated individualised language training helps the child to offset ill effects of early deprivation in language development.

For effective language development, minimal stimulation in homes is required. This enables the child to listen early, to discriminate the sounds clearly, and to verbalise these.

In case, there is over crowding or over stimulation, the above functions necessary for acquisition of words are impaired. The technique of modelling has been suggested for improving language. The child can imitate the model and learn the language of the model which is being rewarded in his presence.

Bereiter and Engleman (1966) have suggested the drill technique for improving language among children. The techniques is repetition of certain sentences graded in order of difficulty by the teacher and continuous exercise by the children. After prolonged practice children seem to use sentences and words quite correctly and acquire different language skills. This programme has drawn the attention of educationists involved in compensatory programmes with disadvantaged children.

IMPLICATIONS

We are witnessing now the greatest change in the history of language teaching; advances in linguistic science, new techniques of teaching, invention

and mass production of recording and viewing equipments, and extraordinary interest in learning languages. The significance of linguistic advances to language teaching has become very clear. Since World War II, this problem is being faced rather squarely. Instead of emphasizing the grammar-translation method and direct method that were prevalent in Europe for language learning, linguists insisted on the imitation and memorization of basic coversational sentences as spoken by native speakers. They provided the descriptions of intonation, pronunciation, morphology, and syntax that constitute the structure of language, which gradually emerge as one learns the basic sentences and variations. The powerful idea of pattern practice was developed. Subsequently tape recorders and audio devices made it possible to provide authentic spoken models for oral-aural practice in homes. This brought linguistic approach to high level of effectiveness.

To-day the linguistic approach for teaching language consists of :

(*a*) Basic conversational sentences for memorisation.
(*b*) Structural notes to help the students perceive and produce speech sentence pattern of the Foreign language.
(*c*) Pattern-practice exercise.
(*d*) Laboratory materials for oral-aural practice out of class.
(*e*) Opportunity for use of the language in communication rather than in translation (ef. Lado, R, 1964, P-6).

The ability to speak a language is not enough to help one to teach a language. One must know the structure of language. This is what a linguist is capable of doing. More important is, one must know the linguistic facts our the language of the children in-order to help them to learn the target language.

A teacher has to know why in English, spelling does not coincide with pronunciation. Also he must know developmental psychology of language learning, so that teaching of language will be effective. They must have a knowledge of not only of the phonology *i.e.* sound system, morphology *i.e.* pattern or part of words, syntax, but also how they are developmentally related to processes of growth and speech organs, and developmental milestones and learning environments, the speech errors due to emotional and embarrashing situations. Whether it is the linguistic approach, teaching of grammar, the drill technique, the reinforcement system/contiguity theory or more than one technique are involved in language learning, it needs to be clarified through a scientific approach. A suggested approach based upon available information, is given here, for use by teachers and others who are interested in language teaching.

What steps for improving language development of the preschools are to followed ? It must be remembered that a child learns from a good speech

model. Adults should use clear, and concise words slowly. Parents should encourage children to have both verbal and non-verbal communication. They must ask children to talk about something. They must ask questions, ask them to describe toys, picture, books, pets, and encourage them to do so. Encourage listening and attention skills. Nursery rhymes are useful in this regard. Parents should encourage children to speak to them and act out to directions. They should develop self expression. Use exact terminology and talk at the level of the children. Correct the child criticism. These suggestions have been experimented and found effective in helping the preschoolers to learn language by (Landreth 1972).

PRINCIPLES OF LANGUAGE TEACHING

(*a*) Teach listening and speaking first, reading and writing next. Writing does not represent intonation, rhythm, stress, and structures etc. and transfer from audio to visual learning is greater. Good models of speech should be available for language teaching.

(*b*) Have the students memorize basic conventional sentences accurately. This principle has psychological and linguistic justification.

(*c*) Encourage the students to use the patterns learnt in practice so that it becomes a habit.

(*d*) Teach sound system structurally by demonstration, imitation, contrasts, and encourage children to produce speech than simply comprehending it. Practice will increase fluency and flexibility.

(*e*) Keep the vocabulary load to a minimum while students are mastering sound system and grammatical patterns, because it is not the vocabulary that constitutes language but the pattern, sound contrast, and the sequences.

(*f*) Teach the patterns gradually in cumulative grades and steps. Language acquisition is a complex habit and it has to be acquired slowly *i.e.* Begin with sentences (not words), teaching requests, greetings, introduce subsentences, structured words, modification structures; Add new elements to previous pattern *i.e.* after you teach the pattern 'do you understand'; you can teach, what, when, where questions; follow the principles of programming.

(*g*) Avoid teaching language through translation. Psychologically the process of translation is more complex and unnecessary because it presupposes conceptual understanding of both languages.

(*h*) Teach the language as it is true of the educated native speakers of the language not in terms of what it outh to be. If communicate the intention of the speaker.

(*i*) Quantity and permanence of learning are dependent on practice.

Hence, it encourage child for practising language, linguistics have also emphasized practice through memorisation and pattern practice. Experiments show 85 per cent should be for practice.

(*j*) Skinnerians believe that shaping and promptings are necessary for helping child to respond. Hence, give articulatory or other hints to help the students to articulate response.

(*k*) Give immediate reward or appreciation when language learning is upto the mark.

(*l*) Teach the meaning of language as it exists in a particular culture where the language is spoken natively.

REVIEW EXERCISES

Answer the following questions within 500 words each :

1. Describe the nature of language development during preschool year.
2. Describe the techniques of accelerating language development.
3. What factors are associated with language development ?
4. What are the principles of language teaching ?
5. What are the various speech defects ? What remedial steps can be taken to reduce these defects ?
6. How would you teach language to a preschool child ?
7. What is stuttering ? How can you reduce its occurrence ?
8. Outline the varius stages of language development.
9. Outline the stages of language development of children during school years. What are the educational implications in studying language development ?
10. Mention the contributions of Lenneberg to our understanding of language development in children.

Write the contributions of the following within 50 words each :

1. Stearns and Spicker
2. Montessorie
3. Bernstein
4. Schlanger
5. Bereiter and Engleman

Write about the following in about 50 words :

1. Echolaliac speech
2. Elaborated code
3. Egocentric speech
4. Socialised speech
5. Speech pathology
6. Stuttering
7. Stammering
8. Lisping
9. Cluttering
10. Parent's role in language.

Write whether the statements are True or False :

1. Non-verbal language appear after birth.
2. Language is a medium of communication.
3. Maturation has no role in language development.
4. Language and speech development are different.
5. Language is inherited.

Fill in the blanks :

1. Between age 12 and 18 months the child is able to utter.....type of language.
2. Girls are.....to boys in language development.
3. Language is an aid to.....
4. Bilingualism at home.....acquisition of language.
5. Vocabulary is.....in boys than in girls.
6. .....Drill technique to improve language was suggested by Bereiter and Engleman.
7. .....suggested use of elaborated code.
8. .....suggested use of sensory training.
9. Speech defects are :..... common in.....than among girls.
10. Stammering is otherwise known as.....stuttering.