

A-1 □ Human Growth and Development

Unit - 1 : Approaches to Human Development

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1.1 Introduction

This course exposes student teachers to the study of child and human development in order to gain a better understanding about variations and the influence of socio-cultural-political realities on development. A critical understanding of theoretical perspectives of development would aid in their application in teaching learning process. Through close observation of children in their natural environments the teacher trainee would be able to situate their theoretical knowledge within realistic frames. This course would also be able to equip the trainees to reflect and critique the normative notions of childhood and adolescence.

1.2 Objectives

After studying the Unit 1 the student-teacher will be able to -

- Explain the process of development from the pre-natal period to adulthood
- Analyze the typical development of children from birth to five years of age
- Comprehend the different domains of human development

1.3 Human Developments As A Discipline From Infancy To Adulthood

Human development is a multifaceted process and involves different aspects. **One aspect** involves biological and physical development. The size and complexity of the human

body change dramatically between conception and maturity.

Another aspect involves cognitive or intellectual abilities and processes. What children know, learn and can remember changes greatly as they grow with the time.

A third aspect involves social behavior and relationships. A newborn has limited ability to participate in social interactions but before reaching adulthood the child forms many relationships and knows how to behave appropriately in a variety of social situations. All the different facets of development are inter related.

Child development is the scientific study of how and why children change over time. Although development is a continuous process it can be broadly divided into five periods

- a. The prenatal period - Conception to birth
- b. Infancy and toddlerhood -Birth to age 3
- c. The preschool period -Ages 3 to 6
- d. Middle childhood / the school years - Ages 6 to 12
- e. Adolescence - Age 12 to adulthood

Influences on Development: What Makes Change Occur?

Each child inherits certain genetic potential from the parents. Although the gene set the limits for particular behavior, it is the environment that determines where within those limits the behavior will be expressed. Major environmental influences include :

- i. Culture-the impact of Indian values
- ii. Race
- iii. Social class - the influence of wealth, poverty, middle-class status
- iv. Ethnicity-the impact of common language, religion, or national origin
- v. Key people in the child's life - parents, peers, relatives, heroes and others who exert a powerful influence,
- vi. The media - information and attitudes conveyed to children on TV, over the radio, and through books, magazines, newspapers, records, tapes and CDs
- vii. Unpredictable life events - the unexpected turns (sudden wealth or poverty, the loss of a parent, sudden disability and other factors) in life can alter the course of the child's life

Stages of Prenatal Development

The word prenatal literally means 'before birth'. It is now recognized that the prenatal organism is vulnerable to a variety of factors that can influence the course of its development. This period is extremely important as the periods of prenatal development

undergoes a systematic series of sequential changes to become increasingly complex and differentiated.

Over the period of the ten lunar months (usually about 280 days) of prenatal development, the new organism shows many varieties of change. Changes in the kinds, number, position, size and shapes of cells, tissues, and somatic systems occur.

Prenatal development includes three periods and these periods are a continuous phase of development:

The period of the zygote / period of ovum, which is sometimes called the germinal period, includes approximately the first two weeks of life, extending from fertilization until the fertilized ovum, or zygote, proceeds down the fallopian tube and becomes implanted on the wall of the uterus.

The period of the embryo extends from the second gestational week to the end of the eighth gestational week. After implantation, the developing baby is called an embryo. Differentiation of the most important organs and physiological systems occurs at this time, and by the end of this period, the embryo is recognizable as a partially functioning tiny human being. The period of the embryo is the phase in which environmental intrusions caused by such things as maternal disease, malnutrition and drugs, etc., may result in deviations in development. In addition, in this period, three important supporting structures develop - the amniotic sac, the placenta and the umbilical cord. By the end of the period of embryo, the face and its features are delineated, and fingers, toes and external genitalia are present. At 6 weeks the embryo can be recognized as a human being, although a rather strangely proportioned one in that the head is almost as large as the rest of the body. Primitive functioning of the heart and liver, as well as the peristaltic movement of ingestion, has been reported late in this period. Most miscarriages, or spontaneous abortions, occur during this period; the embryo becomes detached from the wall of the uterus and is expelled. Research has shown that the rate of spontaneous abortion is as high as 1 in 4 pregnancies. This high rate of abortion may be advantageous to the species since the great majority of aborted embryos have gross chromosomal and genetic disorders. The most severely affected embryos are spontaneously eliminated.

The period of the fetus extends from the ninth gestational week to birth. During this time the body systems developed within the first 8 weeks of life are improved and perfected (O'Rahilly and Muller, 1987). The central nervous system (CNS) develops rapidly in this period though the development of CNS is completed several years after birth. By the end of the fourth month (usually between 14th and 20th week) mothers usually report movement of the fetus, This event is called **quickening** (A. C Harris, 1993), it marks the first direct contact between the mother and the baby. At around 5 months reflexes such as sucking, swallowing and hiccupping usually appear. After

the fifth month the fetus develops nails and sweat glands, a coarser, more adult like skin, and a soft hair which covers the body. By 6 months the eyes develop, and opening and closing of the eyes occur. If an infant is born prematurely at 6 months, the regulatory processes and respiratory systems are usually not mature enough for survival without intensive intervention.

Prenatal Influences on Development

During the period of prenatal development many agents may raise the incidence of deviations or produce malformations in the fetus. These agents are called teratogens, which derives from the Greek word ‘**teras**’, meaning ‘**monster**’ or ‘**marvel**’. Teratology is the study of environmental factors that affect prenatal growth and cause birth defects (Moore,1989).

Six classes of teratogens have been identified that account for 10% or fewer of all congenital malformations {Brent & Beckman, 1990)

1. **Disease or illness in the mother** - hypertension (high blood pressure), diabetes, eclampsia (a type of hypertension), Rubella, chicken pox, mumps and measles (caused by viruses), toxoplasmosis (infected animals may pass the parasite, or it may be present in the raw meat eaten by animals), Sexually transmitted diseases (syphilis, AIDS,etc), Blood (Rh) incompatibility.
2. **Prescription and social drugs** :-laxatives, tranquilizers, diet pills, headache and cold remedies, antacids and even aspirin can have complicating effects. Steroids may have devastating consequences for fertility for both men and women. Illegal drugs, e.g., cocaine, heroin, morphine and other addictive drugs, cigarette smoking, alcohol use.
3. **Nutritional deficits and inconsistencies**
4. **Stress and emotional factors**
5. **Radiation exposure**
6. **Chemicals, toxins, and pollutants**

1.4 Concepts and Principles of Development

Development refers to change through time but not all changes are developmental. Developmental changes are systematic rather than haphazard and successive rather than independent of earlier conditions. Werner (1957) suggested that changes are considered as developmental when they are from a global form of organization to a more differentiated and complex form.

- Knowledge of the pattern of human development helps to know what to expect from children, at (approximately) what ages to expect different patterns of behavior to appear and when these patterns will normally be replaced by more mature patterns. This understanding is important so that we can expect from a child accordingly, in relation to the norms of her/his age group. If we expect too much the child may develop a feeling of inadequacy or if we expect little then they are deprived of incentives to develop their potentials.
- The pattern of development for all typically developed children is approximately the same, so it is easy to evaluate each child in relation to the norms of her/his age group. The typically developed children may make adjustments to social expectations. But the children who deviate from the normal pattern may improve with help, opportunities and motivation.
- Knowledge about the pattern of normal development may facilitate the parents and teachers to guide, provide opportunities and encouragement for the delayed children.

Growth and Development

Many people use the terms ‘growth’ and ‘development’ interchangeably. In reality they are inseparable and neither takes place alone.

Growth	Development
<ul style="list-style-type: none"> • Growth refers to quantitative changes (physical) - increase in structure and size 	<ul style="list-style-type: none"> • Development refers to both qualitative and quantitative changes
<ul style="list-style-type: none"> • Size and structure of the internal and functions organs and the brain increases 	<ul style="list-style-type: none"> • Development involves both structure
<ul style="list-style-type: none"> • Growth can be measured with some degree of reliability in terms of weight, bone age , etc. • The child grows mentally as well as lead forward physically. 	<ul style="list-style-type: none"> • Development may be defined as a progressive series of orderly, coherent changes • Progressive signifies that the changes
	<ul style="list-style-type: none"> • Orderly and coherent indicates that there is a definite relationship between the changes that are taking place and those that preceded or will follow them • Development is a continuous process that starts even before birth • Numerous and simultaneous progressions of development are closely related and manifest many individual variations i.e.

Principles of Growth

- Cephalocaudal Principal: growth directs the development from the head downward
- Proximodistal Principal: growth that proceeds from the spine to the extremities i.e. encourages development from the central part of the body outward.

1.5 Developing Human–Stages (Prenatal to Adulthood)

Typical Major Developments in Eight Periods of Life Span

Age Period	Physical Development	Cognitive Development	Psychosocial Development
Prenatal Period (conception to birth)	<p>Conception occurs</p> <ul style="list-style-type: none"> ➤ The genetic endowment interacts with environmental influences from the beginning. ➤ Basic body structures and organs form. ➤ Brain growth spurt begins. ➤ Physical growth is the most rapid in the life span. ➤ Vulnerability to environmental influences is great. 	<ul style="list-style-type: none"> ➤ Abilities to learn and remember, and to respond to sensory stimuli, are developing 	<ul style="list-style-type: none"> ➤ Fetus responds to mother's voice and develops a preference for it.
Infancy and Toddlerhood (birth to age 3)	<ul style="list-style-type: none"> ➤ All senses and body systems operate at birth to varying degrees. ➤ The brain grows in complexity and is highly sensitive to environmental influence. ➤ Physical growth and development of motor skills are rapid. 	<ul style="list-style-type: none"> ➤ Ability to learn and remember are present, even in early weeks. ➤ Use of symbols and ability to solve problems develop by end of second year. ➤ Comprehension and use of language develop <u>rapidly</u>. 	<ul style="list-style-type: none"> ➤ Attachments to parents and others form. ➤ Self-awareness develops. ➤ Shift from dependence to autonomy occurs. ➤ Interest in other children increases.

<p>Early Childhood (3 to 6 years)</p>	<ul style="list-style-type: none"> ➤ Growth is steady: appearance becomes more slender and proportions more adult like. ➤ Appetite diminishes, and sleep problems are common. Handedness appears; fine and gross motor skills and strength improve. 	<ul style="list-style-type: none"> ➤ Thinking is somewhat egocentric, but understanding of other people's perspectives grows. ➤ Cognitive immaturity leads to some illogical ideas about the world. ➤ Memory and language improve. ➤ Intelligence becomes more predictable. ➤ Attending preschool is common, kindergarten more so. 	<ul style="list-style-type: none"> ➤ Self-concept and understanding of emotions grow: self-esteem is global. Independence, initiative/ self-control, and self-care increase. ➤ Gender identity develops. ➤ Play becomes more imaginative, more elaborate, and more social. ➤ Altruism, aggression, and fearfulness are common. ➤ Family is still focus of social life, but other children become more important.
<p>Middle Childhood (6 to 11 years)</p>	<ul style="list-style-type: none"> ➤ Growth Slows. ➤ Strength and athletic skills improve. ➤ Respiratory illnesses are common, but health is generally better than at any other time in life span. 	<ul style="list-style-type: none"> ➤ Egocentrism diminishes. Children begin to think logically but concretely. ➤ Memory and Language skills increase. ➤ Cognitive gains permit children to benefit from formal schooling. ➤ Some children show special educational needs and strengths. 	<ul style="list-style-type: none"> ➤ Self concept becomes more complex, affecting self-esteem. ➤ Co-regulation reflects gradual shift in control from parents to child. ➤ Peers assume central importance
<p>Adolescence (11 to about 20 years)</p>	<ul style="list-style-type: none"> ➤ Physical growth and other changes are rapid and profound. ➤ Reproductive maturity occurs. ➤ Major health risks arise 	<ul style="list-style-type: none"> ➤ Ability to think abstractly and scientific reasoning develops. ➤ Immature thinking persists in some 	<ul style="list-style-type: none"> ➤ Search for identity, including sexual identity, becomes central. ➤ Relationships with parents are

	<p>from behavioral issues, such as eating disorders and drug abuse.</p>	<p>attitudes and behaviors.</p> <ul style="list-style-type: none"> ➤ Education focuses on preparation for college or vocation. 	<p>generally good.</p> <ul style="list-style-type: none"> ➤ Peer groups help develop and test self-concept but also may exert an antisocial influence.
<p>Young Adulthood (20 to 40 years)</p>		<ul style="list-style-type: none"> ➤ Cognitive abilities and moral judgments assume more complexity. ➤ Educational and career choices are made. 	<ul style="list-style-type: none"> ➤ Personality trait and styles become relatively stable, but changes in personality maybe influenced by life stages and events. ➤ Decision are made about intimate relationships and personal lifestyles. ➤ Most people marry, and most become parents.
<p>Middle Adulthood (40 to 65 years)</p>	<ul style="list-style-type: none"> ➤ Physical condition peaks, then declines slightly. ➤ Lifestyle choices influence health. ➤ Some deterioration of sensory abilities, health, stamina, and skills may take place. ➤ Women experience menopause. 	<ul style="list-style-type: none"> ➤ Most basic mental abilities peak; expertise and practical problem solving skills are high. ➤ Creative output may decline but improve in quality. ➤ For some, career success and earning powers peak; for others, burnout or career change may occur. 	<ul style="list-style-type: none"> ➤ Sense of identity continues to develop; stressful midlife traction may occur. ➤ Double responsibilities of caring for children and elderly parents may cause stress.
<p>Late Childhood (65 years and above)</p>	<ul style="list-style-type: none"> ➤ Most people are healthy and active although health and physical abilities decline somewhat. ➤ Slowing of reaction time affects some aspects of functioning. 	<ul style="list-style-type: none"> ➤ Most people are mentally alert. ➤ Although intelligence and memory may deteriorate in some areas, most people find ways to compensate. 	<ul style="list-style-type: none"> ➤ Retirement from workforce may offer new options for use of time. ➤ People need to cope with personal losses and impending death. Relationship with family and close friends can provide important support. Search for meaning in life assumes central importance.

1.6 Nature Vs Nurture

Psychologists consider that day to day behavior is affected by both biology and environment and by past as well as by current experiences. People's moods and thoughts are often the result of genetic factors and biochemical processes interacting with environment. There is a complex interplay between experience and biology, between conscious voluntary decision making and inherited traits - between nurture and nature.

Nurture refers to the impact of learning, training, education or more generally the individual's environment.

Nature refers to the impact of an individual's genetic inheritance or heredity. But inherited traits do not become evident in behavior unless a person's environment supports and encourages them. Thus a child who has inherited some special talent must be given opportunities

Some influences on development originate primarily with heredity: the genetic endowment inherited from a person's biological parents at conception. Other influences come from the inner and outer environment: the world outside the self-beginning in the womb, and the learning that comes from experience. Individual differences increase as people grow older. Many typical changes of infancy and early childhood seem to be tied to maturation of the body and brain - the unfolding of a natural sequence of physical changes and behavior patterns, including readiness to master new abilities such as walking and talking. As children grow into adolescents and then into adults, differences in innate characteristics and life experience play a greater role.

Many controversies about children's development rest upon differences in the emphasis placed on nature and nurture as explanations for development. One of the controversies concerns the relative importance of heredity and environment in determining the physical and mental characteristics of the developing child. No completely accepted method has been formed to isolate the influence of heredity from that of environment.

The evidence indicates that the development of physical and mental traits comes partly from exercise and effort on the part of the individual. Which plays the more important role is still a matter of conjecture.

Intrinsic maturation is the unfolding of characteristics potentially present in the individual that come from the individual's genetic endowment. The common development such as creeping, crawling, sitting and walking comes through maturation.

The functions specific to the individual such as swimming, ball throwing, riding bicycles

or writing need training. Without training the said skills may not develop. No hereditary endowment can mature fully without environmental support.

In the field of child development

- Both biological and environmental factors are influential
- Biological extremists argue that biology is destiny and development is maturation, course of development is predestined and predetermined by genetic factors.
- Modern developmental psychologists are exploring, how biological and environmental factors interact to produce developmental differences.

1.7 Domains of Human Development

To understand the similarities and differences in development we need to look at different Domains of human development. The domains can be categorized under three major directions such as-

- Physical Development (Organized as motor development and posture and large movements)
- Cognitive Development
- Psycho-social Development

The following illustrations can provide a starting point for prompting age-appropriate information for making observations and for obtaining a comparative view of the child's achievements against the average expected achievements: i.e. typical developmental progress. These will provide information and sequence of development and key stages within each domain.

PHYSICAL DEVELOPMENT (Organized as motor development and posture and large movements)

The progress in motor development is the result of an on going **bi-directional interaction between maturation and experience**, which results in a continuously self-organising dynamic system. (Thelen,1995)

The influences of motor development:

Biologically dependent **neural maturation** consist of

- i) Maturing muscle tone and muscle strength

- ii) Improving balance and co-ordination
- iii) Developing information processing abilities

Experience - ongoing action perception cycle consist of

- i) Perceiving possibilities and self-capabilities
- ii) Interaction with other domains such as motivation, social and cognitive development
- iii) Specific and flexible learning

Conditions that influence the Rate of Motor Development

- a) Genetic constitution which includes body build and intellectual level
- b) Favourable pre-natal conditions, e.g. maternal nutrition
- c) Intellectual level
- d) Stimulation
- e) First born ahead of others (parental encouragement)
- f) Sex, race and socio-economic differences

Phases of Motor Development

Birth - 4 months	<ul style="list-style-type: none"> ● Primitive reflex movements
4 months- 1 year	<ul style="list-style-type: none"> ● Inhibition of primitive reflexes by 6 months ● Improving muscle tone with reducing flexor muscle tone in the limbs and improving extensor tone in the trunk ● Improving postural control and balance ● Movements become differentiated and functional, such as reaching, grasping, sitting, walking
1-2 years	<ul style="list-style-type: none"> ● Better differentiated and more precise movements ● Improving stability and power
2-7 years	<ul style="list-style-type: none"> ● Maturing functional movements such as running, jumping, catching, throwing, writing, cutting ● Improved rhythm, sequences, integration and flow to achieve efficient, co-ordinated and controlled performance in day to day activities
7 years onwards	<ul style="list-style-type: none"> ● Applying motor skills to specialized activities of sports and work

POSTURE AND LARGE MOVEMENTS (Major development)

AGE 1 MONTH

- Lying on back (supine) keeps head to one side
- Jerky movements of limbs and arms than legs
- At rest keeps hands closed and thumbs turned in
- Fingers and toes fan out in extension of limbs
- Pulled to sit - head lags till vertical , then momentarily erect, back is one complete curve
- Held in supported sitting
- In ventral suspension- holds head in line with body and hips are semi-extended
- Placed on abdomen (prone)head immediately turns to side, arms and legs flexed, elbows away from body, buttocks moderately high

AGE 3 MONTHS

- Lying on back (supine) - prefers to lie with head in midline, limbs more pliable, movements smoother and more continuous
- Waves arms symmetrically, hands loosely open
- Brings hands together from sides to midline over chest and chin
- Kicks vigorously, legs alternate or occasionally together
- When pulled to sit - little or no head lag
- Held sitting - back is straight except in lumbar region
- Head held erect and steady for several seconds before bobbing forwards
- In ventral suspension - head held well above line of body, hips and shoulders extended
- Needs support at shoulders when being bathed and dressed
- Lying on abdomen (prone) - lifts head and upper chest well up in midline, using forearms to support with buttocks flat
- Held standing with feet on hard surface, sags at knees (negative support reflex)

AGE 6 MONTHS

- In supine - raises head up and moves arms up to be lifted
- When hand grasped - braces shoulders and pulls self to sitting
- Kicks strongly, legs alternating
- Sits with support and turns head from side to side to look around
- Can roll over from prone to supine at around 5-6 months and usually from supine to prone at around 6-7 months (Bly, 1994)
- Held sitting - head firmly erected with back straight
- May sit alone momentarily
- In prone- lifts head and chest well up, supporting self on flattened palms and extended arms
- In supported standing with feet touching hard surface - bears weight on feet and bounces actively

AGE 9 MONTHS

- Sits unsupported 10-15 minutes on the floor
- Can lean forward and pick up toy without losing balance
- Can turn body to look sideways and grasps toy
- Very active movements of whole body
- Progresses on floor by rolling or squirming
- Attempts to crawl and sometimes succeeds
- Pulls to standing holding support for a few moments but cannot lower himself and falls backwards with a bump
- Held in standing - steps purposefully on alternate feet
- When being carried by an adult, supports self in upright position and turns head to look around

AGE 12 MONTHS

- Sits well on floor for indefinite time
- Can rise to sitting position from lying down with ease

- Crawls, shuffles on buttocks or 'bear walks' rapidly
- Pulls to standing and sits down again holding onto furniture
- Walks around furniture lifting one foot and stepping sideways
- Walks forwards and sideways with one or both hands held
- May stancj for a few moments, may walk
- May crawl upstairs (average 13-14 months)

AGE 15 MONTHS

- May walk alone usually with uneven steps: feet wide apart, arms slightly flexed and held above head or shoulder level for balance.
- Let's self-down from standing to sitting by collapsing backward with a bump Kneels unaided or with support

AGE 18 MONTHS

- Walks well with feet only slightly apart
- Starts and stops safely
- No longer needs to hold up arms in extension to balance
- Runs carefully, head held erect in midline, eyes on the ground but finds difficulty in negotiating obstacles
- Pushes or pulls toys or boxes
- Can carry a large doll or teddy bear while walking
- Backs into small chair or slides in sideways
- Climbs forward into adult's chair, then turns around and sit
- Squats and rises with hands helping
- Walks upstairs with helping hand
- Creeps backwards down stairs or (occasionally) bumps down on buttocks
- Kneels upright on flat surface without support

AGE 2 YEARS

- Runs safely on whole foot, stopping and starting with ease and avoiding obstacles
- Squats and rises to feet without using hands
- Pushes and pulls toys easily
- Walks backwards pulling toys
- Pulls small toys by cord with obvious appreciation of direction
- Climbs on furniture to look out of window or to open doors and can get down again
- Shows increasing understanding of self in relation to size and position of objects in the environment and to enclosed spaces such as a cupboard or cardboard box
- Walks up and down stairs holding on to rail or wall, two feet on each stair
- Throws small ball overhand and forwards without falling
- Walks into large balls when trying to kick it
- Sits on small tricycle but cannot use pedals - propels with feet across floor

AGE 3 YEARS

- Walks alone up stairs using alternate feet, comes down two feet to a step
- Usually jumps from bottom step with two feet together
- Climbs nursery apparatus with agility
- Can turn around obstacles and corner while running and while pushing or pulling toys
- Walks forwards, backwards sideways hauling large toys with complete confidence
- Obviously appreciates size and movements of own body in relation to external spaces
- Rides tricycle using pedals and can steer round obstacles
- Can stand and walk on tiptoe
- Stands momentarily on one (preferred) foot when shown
- Sits with feet crossed at ankles
- Can throw ball overhead and can catch large ball on or between extended arms
- Kicks ball forcibly

AGE 4 YEARS

- Walks or runs alone up and down stairs, one foot to each step
- Navigates self-locomotion skillfully, turning sharp corners, running, pushing and pulling
- Climbs ladders and trees
- Expert rider of tricycle, executing sharp U-turns easily
- Stands on one foot (preferred) for 3-5 seconds and hops on preferred foot
- Arranges and picks up objects from floor by bending from waist, with knees straight
- Sits with knees crossed
- Shows increasing skill in ball games, throwing, catching, bouncing, kicking, etc., including use of bat

AGE 5 YEARS

- Walks easily on narrow line
- Runs lightly on toes
- Active and skillful in climbing, sliding, swinging, digging, and various 'stunts'
- Skips on alternate feet
- Moves rhythmically to music
- Grips strongly with either hand
- Can stand on one foot 8-10 seconds, right or left and also stand on preferred foot with arms folded
- Can hop 2 or 3 yards forward on each foot separately
- Can bend and touch toes without flexing knees
- Plays all varieties of ball games with considerable ability, including those requiring appropriate placement or scoring, according to accepted rules

Cognitive Development

All children can learn. Learning refers to adaptation to one's environment through the use of cognitive or intellectual development. Intellectual development can be

defined as an individual's ability to cope with the changing world through continuous organization and re-organisation of experiences.

Cognitive development refers to the processes involved in -

- **Attention** - focuses on selection of sensory stimuli
- **Perception** - include detection, organization, interpretation of sensory information
- **Memory** - refers to retention and recall of perceived information
- **Reasoning** - using knowledge to make association between familiar and new information, make inferences and draw conclusions
- **Reflection** - evaluation of the quality of ideas and solutions to problems
- **Insight** - recognition of new relationships between two segments of information

Learning is facilitated by both the Internal and External environment.

The Internal environment broadly comprises of

- i) Sensory organs and sensory integration
- ii) Smooth functioning of other bodily systems
- iii) Mental health

The External environment consists of

- i) People around us
- ii) The air we breathe, the food we eat and the water we drink
- iii) Flora and Fauna
- iv) Our social and emotional experiences
- v) Opportunities and Access

Stage Theory

Studies on children suggest that biological drive is not enough for children to move from one stage to the other. Opportunities, access to facilitative adults and a stimulating environment that promotes activity based learning and discovery learning are required for children to move across the stages.

- ~ Each stage evolves from the previous stage
- ~ No sub-stage or stage is skipped

- ~ The sequence does not vary
- ~ Learning becomes more complex as the child moves from one stage to another
- ~ The transition from one stage to another is gradual

Sensori-motor Stage

During this period behavior is primarily motor. The child does not yet 'think' conceptually, though cognitive development is seen.

This stage -

- Involves use of sensory information and action patterns
- Develops knowledge based on physical and sensory experiences

Six Sub-stages of Sensori-motor stage

1. Random and reflex actions (Birth to 4-6 weeks)
2. Primary circular reaction phase (4-6 weeks to 3-4 months)
3. Secondary circular reactions phase (4 to 7/8 months)
4. Co-ordination of secondary circular reactions phase (7/8 to 12 months)
5. Tertiary circular reactions phase (12 to 18 months)
6. Inventions of new means through mental combinations (17/18 months to 24 months)

PRE-OPERATIONAL STAGE (2 to 6/7 years) is divided into two periods

This period is characterized by the development of language and rapid conceptual development. The development of concepts can be divided into two periods

- (i) Pre-conceptual period (2 to 4 years)
- Intuitive Thought period (4+ to 7 years)

CONCRETE OPERATIONS STAGE (7 to 11/12 years)

During this period there are mental operations in relation to recalled physical experiences but without necessity of direct physical inputs

FORMAL OPERATIONS STAGE (11+ to 18 years)

During this period the child's cognitive structures reach their greatest level of development, and the child become able to apply logic to all classes of problems.

SPEECH, LANGUAGE AND COMMUNICATION (Major development)

Age in months	
1	Stops whimpering; and usually turns towards sound of nearby soothing human voice
2	Definite differentiation of cries, screaming (between hunger, need for change, need for attention) Laughs out loud
3	<p>Cries when uncomfortable or annoyed Often sucks or licks lips in response to sounds of preparation for feeding Shows excitement at sound of approaching voices, footsteps, etc Vocalises delightedly when spoken to or pleased</p> <p>Fixes eyes unblinkingly on parent's or carer's face</p> <p>Begins to show reactions to familiar situations by smiling, cooing, and excited movements</p> <p>Responds with pleasure to friendly handling, especially when accompanied by playful, tickling and singing</p> <p>Babbles - beginning of repeated consonant sound</p>
4	Smiles meaningfully
6	<p>Perceives people and events in his /her environment</p> <p>Responds to negative commands</p> <p>Turns to mother's voice</p> <p>Begins negative expression - nah. nah sound</p>
9	<p>Recognizes names of familiar objects</p> <p>Understands "no-no" and "bye-bye"</p> <p>Uses gesture language - shakes head</p> <p>Says 'Da-da', 'Ba-ba' without meaning</p>
10	<p>Knows and immediately turns to own name</p> <p>Says and means 'Mam-mam', 'Ba-ba'</p>
12	<p>Comprehends simple commands associated with gestures (Give it to mama, clap hands)</p> <p>Uses jargon speech</p>

15	<p>Makes many speech-like sounds</p> <p>Says a few recognizable words</p> <p>Comprehends simple questions</p> <p>Points to familiar persons</p>
18	<p>Enjoys nursery rhymes</p> <p>Identifies simple pictures</p> <p>Attempts to sing</p> <p>Imitates animal sounds</p>
2 years	<p>Comprehends verbs - points to appropriate action pictures, e.g., eating, running</p> <p>Combines two or three words - 'Bye papa'</p> <p>Refers to self by using name</p> <p>Joins in nursery rhymes and action songs</p> <p>Indicates body parts</p> <p>Carries out simple instructions</p>
2+ to 3 years	<p>Uses 200 or more recognizable words</p> <p>Knows full name</p> <p>Imitates phrases (echolalia)</p> <p>Asks questions beginning - what? who? Where?</p> <p>Listens eagerly to stories and demands favourites over and over</p> <p>Counts by rote up to ten or more but little appreciation of quantity beyond two or three</p>
3+ to 5 years	<p>Speech grammatically correct and completely intelligible</p> <p>Understands some abstract concepts, e.g., 'one of', 'before', 'after', 'if'</p> <p>Listens to and tells long stories</p> <p>Counts by rote and beginning to count objects by word and touch in one-to-one correspondence up to four or five</p> <p>Enjoys jokes</p> <p>Can repeat nursery rhymes correctly</p> <p>Speech fluent, grammatically conventional and usually phonetically correct</p> <p>Gives full name, age and usually birthday</p>

	<p>Gives home address</p> <p>Defines concrete nouns by use</p> <p>Understands time and sequence concepts and uses terms such as ‘first’ then ‘last’</p> <p>Asks meaning of abstract words and uses them</p>
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SOCIAL BEHAVIOUR AND PLAY (Major development)

	<p>AGE 1 MONTH</p> <ul style="list-style-type: none"> • Sucks well • Sleeps most of the time when not being fed or handled • Eye-to-eye contact is deliberately maintained or terminated by the infant during social interaction • Stops crying when picked up and spoken to
	<p>AGE 3 MONTHS</p> <ul style="list-style-type: none"> • Fixes eyes unblinkingly on parent’s or carer’s face when feeding • Eager anticipation of breast or bottle feed • Begins to show reactions to familiar situations by smiling, cooing and excited movements • Enjoys bathing and caring routines • Responds with pleasure to friendly handling, e.g., playful tickling, singing
	<p>AGE 6 MONTHS</p> <ul style="list-style-type: none"> • Recognises familiar people • Reacts enthusiastically to often-repeated games • Differentiates between people and objects • When offered a rattle, reaches for it and shakes it to make a sound • Manipulates objects attentively, passing them from hand to hand • Takes objects to mouth • Touches, feels objects and explores environment

AGE 9 MONTHS

- Recognises his / her own mother
- Initially shy with strangers
- Throws body back and stiffens in annoyance or resistance
- Plays 'peek-a-boo' and imitates hand clapping
- Offers food to familiar people and animals
- Watches toy being partially hidden under a cover or cup and then finds it
- Sustained interest in looking at pictures named by adult

AGE 12 MONTHS

- Waves 'Bye' and claps hands
- Makes wants known by pushing, pulling and reaching
- Put objects in and out of cup or box when shown
- Demonstrates affection to familiars
- Enjoys joint play with adults

AGE 15 MONTHS

- Pushes large, wheeled toy with handle on level ground
- Explores toys
- Engages in functional play, e.g. pushing toy car, pretends to drink from empty cup
- Casts objects to floor in play or rejection and watches where things fall. Looks for hidden toy
- Enjoys 'give and take' games
- Looks to care-giver to monitor his/her reactions particularly in unfamiliar situations
- Is affectionate to familiar people

AGE 18 MONTHS

- Explores environment with understanding but no sense of danger
- Treats dolls and teddies as babies - hugging, feeding, etc.

<ul style="list-style-type: none"> ● Remembers where objects belong ● Plays alone but likes to be near familiar adult or older sibling. ● Exchanges toy both cooperatively and in conflict with peers ● Holds spoon and gets food safely to mouth ● Assists with dressing and undressing
<p>AGE 2 YEARS</p> <ul style="list-style-type: none"> ● Follows parent around house and imitates domestic activities in simultaneous play ● Shows tantrums when frustrated ● May take turns but has little idea of sharing toys ● Parallel play present ● Resentful of attention shown to other children, particularly by own familiars
<p>AGE 2+to 3 YEARS</p> <ul style="list-style-type: none"> ● Has little understanding to defer immediate wishes ● More sustained role play ● Acts out common activities using substituted materials, e.g. pretend tea parties ● Enjoys playing alone or with siblings ● Shows affection for younger siblings ● Shows little need to defer satisfaction of wishes to the future
<p>AGE 3+to 5 YEARS</p> <ul style="list-style-type: none"> ● Self-willed behaviours ● Quarrels with playmates when wishes crossed ● Shows sense of humour in talk and social activities ● Understands taking turns as well as sharing ● Shows concern for younger siblings and sympathy for play-mates in distress ● Develops self-regulation.

- Follows tidiness routines but needs constant reminders
- Plays imaginatively, creating
- Choose own friends
- Understands need for rules and fair play
- Shows definite sense of humour
- Tender and protective towards younger children and pets

1.8 References (4 nos.)

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