

**NETAJI SUBHAS OPEN UNIVERSITY**

**B.Ed.Spl.Ed. (M.R./H.I./V.I.)-ODL**

**HUMAN GROWTH  
&  
DEVELOPMENT**

**A-1**

**B. Ed. Spl. Ed (M. R. / H. I. / V. I)-  
ODL Programme**

**AREA - A, A-1 :  
HUMAN GROWTH & DEVELOPMENT**



**A COLLABORATIVE PROGRAMME OF  
NETAJI SUBHAS OPEN UNIVERSITY  
AND  
REHABILITATION COUNCIL OF INDIA**



**AREA - A, A-1 :**  
**HUMAN GROWTH & DEVELOPMENT**

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The Self Instructional Material (SIM) is prepared keeping conformity with the B.Ed.Spl. Edu.(MR/HI/VI) - ODL Programme as prepared and circulated by the Rehabilitation Council of India, New Delhi and adopted by the NSOU on and from the 2015-2017 academic session.



## **Netaji Subhas Open University**

### **From the Vice-Chancellor's Desk**

Dear Students, from this Academic Session (2015-17) the Curriculum and Course Structure of B. Ed.- Special Education have been thoroughly revised as per the stipulations which featured in the Memorandum of Understanding (MoU) between the Rehabilitation Council of India (RCI) and the National Council for Teacher Education (NCTE). The newly designed course structure and syllabus is comprehensive and futuristic so have been contextualized and adopted by NSOU from the present academic session, following the directives of the aforesaid national statutory authorities.

Consequent upon the introduction of new syllabus the revision of Self Instructional Material (SIM) becomes imperative. The new syllabus was circulated by RCI for introduction in the month of June, 2015 when the new session begins in the month of July. So the difficulties in preparing the SIMs within such a short time, can easily be understood. However, the School of Education of NSOU took up the challenge and put the best minds together in preparing SIM without compromising the standard and quality of such academic package. It required many rigorous steps before printing and circulation of the entire academic package to our dear learners. Every intervening step was meticulously and methodically followed for ensuring the quality issues in such a time bound matter.

The SIMs are prepared by the eminent subject experts and edited by the senior faculties specialized in the discipline concerned. Printing of the SIMs has been done with utmost care and attention. Students are the primary beneficiaries of these materials so developed. Therefore, you must go through the contents seriously, take note of the queries, if any, and place the same to the Counselors during Personal Contact Programs (PCPs) for clarifications. In comparison to F2F mode, in the ODL mode, the onus lies with the learners. So please change your mind accordingly and shrug off your old mind set of teacher dependence and spoon feeding habit immediately.

I would further urge you to go for other Open Educational Resources (OERs) - available on websites, for better understanding and gaining comprehensive mastery over the subject. From this year NSOU is also providing ICT enabled support services to the students enrolled under this University. So in addition to the printed SIMs the e-contents are also provided to the students to facilitate the usage and to ensure more flexibility at the user end. The other ICT based support system will be there for the benefit of the learners.

So please make most out of it and do the best at the examinations. However, any suggestion or constructive criticism regarding the SIMs and its improvement is welcome. I must acknowledge the contribution of all the content writers, editors and background minds at the SoE, NSOU for their respective efforts, expertise and hard work to make it possible of producing the SIMs within a very short time.



**Professor Subha Sankar Sarkar**  
Vice-Chancellor, NSOU

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**Netaji Subhas Open  
University**

**AREA - A, A-1 :  
HUMAN GROWTH &  
DEVELOPMENT**

### **A-1 □ Human Growth and Development**

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## A-1 □ Human Growth and Development

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### Unit - 1 : Approaches to Human Development

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#### Structure

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Human developments as a discipline from infancy to adulthood.
- 1.4 Concepts & Principles of development
- 1.5 Developing Human Stages (Prenatal to Adulthood)
- 1.6 Nature vs. Nurture
- 1.7 Demains of Human Development
- 1.8 References

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#### 1.1 Introduction

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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.

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#### 1.2 Objectives

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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

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#### 1.3 Human Developments As A Discipline From Infancy To Adulthood

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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**

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## **1.4 Concepts and Principles of Development**

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

## 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.

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## 1.5 Developing Human–Stages (Prenatal to Adulthood)

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### Typical Major Developments in Eight Periods of Life Span

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

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



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

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## 1.6 Nature Vs Nurture

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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.

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## 1.7 Domains of Human Development

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

## **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

<ul style="list-style-type: none"> <li>● Crawls, shuffles on buttocks or 'bear walks' rapidly</li> <li>● Pulls to standing and sits down again holding onto furniture</li> <li>● Walks around furniture lifting one foot and stepping sideways</li> <li>● Walks forwards and sideways with one or both hands held</li> <li>● May stancj for a few moments, may walk</li> <li>● May crawl upstairs (average 13-14 months)</li> </ul>
<p><b>AGE 15 MONTHS</b></p> <ul style="list-style-type: none"> <li>● May walk alone usually with uneven steps: feet wide apart, arms slightly flexed and held above head or shoulder level for balance.</li> <li>● Let's self-down from standing to sitting by collapsing backward with a bump Kneels unaided or with support</li> </ul>
<p><b>AGE 18 MONTHS</b></p> <ul style="list-style-type: none"> <li>● Walks well with feet only slightly apart</li> <li>● Starts and stops safely</li> <li>● No longer needs to hold up arms in extension to balance</li> <li>● Runs carefully, head held erect in midline, eyes on the ground but finds difficulty in negotiating obstacles</li> <li>● Pushes or pulls toys or boxes</li> <li>● Can carry a large doll or teddy bear while walking</li> <li>● Backs into small chair or slides in sideways</li> <li>● Climbs forward into adult's chair, then turns around and sit</li> <li>● Squats and rises with hands helping</li> <li>● Walks upstairs with helping hand</li> <li>● Creeps backwards down stairs or (occasionally) bumps down on buttocks</li> <li>● Kneels upright on flat surface without support</li> </ul>

**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)
- (ii) 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)**

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

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



- 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

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## **Unit 2 : Theoretical Approach to Development**

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### **Structure**

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## **2.1 : Cognitive and Social – Cognitive Theories**

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### **2.1.1. Introduction :**

Cognitive psychology is a very important branch of psychology that focuses on the way people process information. It looks at how we process information, we receive and how the treatment of this information leads to our responses. In other words, cognitive psychology is interested in what is happening within our minds that links stimulus (input) and response (output). Basically cognitive psychologists share with behaviorists —

- (i) a study of learning should be objective.
- (ii) learning theories should be developed from the results of empirical research. They differ in two respects from behaviorists such as (i) S-O-R paradigm instead of S-R. (ii) emphasis on information processing.

In their learning theories they advocate teacher as instructor or manager, but learner is the active planner. Actually cognitive psychology promotes and establishes constructivism. Constructivism means individuals construct their own cognitive structures as they interpret their experiences in particular situations. This constructivism follows John Dewey's Philosophy.

Pioneers in the field are : Piaget, Vygotsky and Bruner.

Where as Social Cognitive Theory (SCT) refers to a psychological model of behaviour that emerged primarily from the work of Albert Bandura (1977-1986). Initially developed with an emphasis on the acquisition of social behaviours, Social cognitive theory (SCT) continues to emphasize that learning occurs in a social context and that much of what is learned is gained through observation.

In this unit we will be able to understand the cognitive theory and social cognitive theory in the context of development of learner cognition. You will also be able to know the theories of Piaget, Vigotsky, Bruner and Bandura.

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### **2.1.2. Objectives :**

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After going through this unit, we will be able to

- Know the cognitive theory given by Piaget, Vigotsky, Bruner and Bandura.
- Elucidate the theory of Erikson.
- Explain the theory of Freud and trace out its importance in personality development.
- Understand the ecological theory of Bronfen Brenner.
- Know the holistic theory of development by Steiner.

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### **2.1.3. Cognitive Development—Theory of Piaget**

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Jean Paul Piaget (1896-1980) was a Swiss psychologist who contributed greatly to research in cognitive development and the study of how children think. No theory of cognitive development has had more impact than the cognitive stages presented by Jean Piaget.

Piaget suggested that children go through four separate stages in a fixed order that is universal in all children. Piaget declared that these stages differ not only in the quantity of information acquired at each, but also in quality of knowledge and understanding at that stage. Piaget suggested that movement from one stage to the next occurred when the child reached an appropriate level of maturation and was exposed to relevant types of experiences. Without experiences, children were assumed incapable of reaching their highest cognitive ability.

Therefore, the stagewise discussion is very important to understand way interpret and experience. The situation and construct their cognitive structure. All the stages are stated below.

**Stage 1 :** Sensorimotor (Birth–2 years) "Thinking with the senses." During this stage children use touch, sound, sight, taste and smell to an object. Reach for a ball, they move head and eyes to follow moving objects.

**Stage 2 :** Preoperational (2-7 years) "Use of language and symbols." General making believe is developed in this stage. They play with telephone and pretend to drink. They believe that everyone thinks the way that they do (called egocentrism). They also believe that inanimate objects have feelings and thoughts like they do.

**Stage 3 :** Concrete Operational (7-11 years) children in the concrete operational stage have a better understanding of time and space. Children at this stage have limits to their abstract thinking, according to Piaget.

**Stage 4 :** Formal Operational (11-years) "logical and abstract thinking." The formal stage begins in most people at age twelve and continues into adulthood. This stage produces a new kind of thinking that is abstract, logical and formal. Thinking is no longer tied to events that can be observed. A child in this stage can think hypothetically and use logic to solve problems. It is thought that not all individuals reach this level of thinking.

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#### **2.1.4. Educational Implication :**

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Most development theorists have agreed that Piaget has provided us with an accurate account of age-related changes in cognitive development. Piaget suggests that cognitive performance cannot be attained unless cognitive readiness is brought about by maturation and environmental stimuli has been instrumental in determining the structure of educational curricula.

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#### **2.1.5 'Check Your Progress'—1**

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(1) Define the meaning of cognitive development.

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(2) Object permanence is observed in which stages of development ?

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(3) "Sucking Scheme" is developed in which stages of development ?

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(4) Mention any one characteristic of formal operational stage.

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(5) Mention any one characteristic of pre-operational stage.

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### **2.1.6 Lev Vygotsky's Social Developmental Theory**

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Lev Vygotsky's was born in the USSR in 1896. The social developmental theory of learning is developed by him. He proposed that social interaction profoundly influences cognitive development. Central to Vygotsky's theory is his belief that biological and cultural development do not occur in isolation (Driscoll, 1944). To some extent he differs from Piaget's approach of development. According to Piaget cognitive development consists of four main periods of cognitive growth. Sensorimotor, Preoperational, Concrete operational and formal operational. To him, development has an end point in goal. Whereas Vygotsky believes that development is a process that should be analyzed, instead of a product to be obtained. According to Vygotsky, the development process that begins at birth and continues until death is too complex to be defined by stages (Driscoll, 1994; Hausfather, 1996), Vygotsky opines that this life long process of development is dependent on social interaction and that social learning

actually leads to cognitive development. This phenomena is called the Zone of Proximal Development. He explains it as "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978).

Generally, a student can perform a task under adult guidance or with peer collaboration that cannot be achieved alone. The Zone of proximal development bridges that gap between what is known and what can be known. Vygotsky claims that learning occurs in this zone.

Therefore, Vygotsky focuses on the connections between people and the cultural context in which they act and interact in shared experiences (Crawford, 1996). According to him, humans use tools that develop from a culture, such as speech and writing, to mediate their social environments. Initially children develop these tools to serve solely as social functions, ways to communicate needs. He believes that the internalization of these tools led to higher thinking skills. Piaget points out that young children participating in egocentric speech in their preoperational stage, but when children reach the concrete stage this phase becomes disappear. In contrast, Vygotsky viewed this egocentric speech as a transition from social speech to internalized thoughts (Driscoll, 1994). Therefore, he believes that thought and language cannot exist without each other.

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### **2.1.7. Educational Implications :**

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Vygotsky's social development theory challenges traditional teaching methods. The memorization and recitation way of teaching strategies are opposed by this theory. Whereas social development theory facilitates cognitive development over other instructional strategies. Such as, the introduction and integration of computer technology in society has tremendously increased the opportunities for social interaction. Therefore, the social context for learning is transforming as well. Collaboration and peer instruction was once only possible in shared physical space, learning relationships can now be formed from distance through Cyberspace. Computer technology is a cultural tool that students can use to mediate and internalize their learning. Presently our society is also going through a culture of change due to the infusion of computer technology. Perhaps this lends some insight to why Vygotsky's theory of social development is receiving increasing attention, seventy years after its conception.

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### 2.1.8. “Check Your Progress” :

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(6) Who is considered the originator of social development theory.

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(7) What is zone of proximal development ?

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### 2.1.9. Jerome’s Bruner

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Jerome S Bruner, a professor of Harvard University, USA was fascinated by the writings of Piaget, the swiss educational thinker. Bruner came over to Geneva to get ot know move from Pieget personally. Bruner's ideas of learning was shaped by Piaget's theory of cognitive development. But in some respects, Bruner felt that the key for the promotion of sound education depends on schooling at the grassroot leve. Hence all books used in primary and secondary schools were critically reviewed and rewritten.

Let us study the Bruner's ideas of learning by 'Discovery'.

#### **Structure :**

Structure is important thing in Bruner's theory of learning. In this aspect he reflects the views of Gestalt psychology. He finds that the structure of discipline veries in complaxity from stage to stage. Learning become meaningful only when the learner Grasps the structure of a discipline The same idea may be compared with Piaget's use of the term 'Schema' which means cognitive structrue.

#### **DISCOVERY LEARNING :**

Grasping the struture of a subject is understanding it in a way that permits many other things, to be related to it meaningfully. According to Bruner, learning is not passive, but an active process of discovery influenced by prior knowledge and ability of the learner. These resources are very limited in the case of an infant. Teachr should provide



problem situations that stimulate student to "discovery" for themselves the "structure" of the subject matter.

Therefore, from the above discussion of "structure" and "discovery learning" it may be stated that ideas can be linked to those who propose information processing models in that he suggests development occurs as mental structures become more elaborate and sophisticated through interaction and experience, "learners construct new ideas or concepts based upon their current/past knowledge. They select and transform information, construct hypothesis and make decisions, relying on a cognitive structure to do so" (Kearsley, 2001). In addition, his work is considered interactional in a manner similar to that proposed by Dewey and Vygotsky. He is concerned with the sequence of representation (the stages), but he is equally concerned with the role of culture on cognitive development.

Besides these, Bruner recognizes three modes of representation that must be present at all stages of development. These three modes of representation (enactive, iconic and symbolic) are not necessarily hierarchical, but some learning can only be achieved by passing through each of them in a specific development order.

Enactive representation can only demonstrate the past through appropriate motor experiences. Iconic representation employs the use of organizational structures, spatial signifiers, or images to represent past experiences. The third one is symbolic. In this mode, design features that can include remoteness or arbitrariness represent the past. Language is the most common tool used for this type of representation, but the characterizing feature of these types of representation is that the symbols being used do not have to have a concrete correlation to what is being described. The representation goes a concrete connection to the information.

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### **2.1.10. Educational Implications :**

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Bruner's theory of cognitive development has great educational significance because he suggests the relevant proposition on the basis of practical utility. He suggests that children need social and cultural experiences that prepare them to understand the meaningfulness of their actions as well as those of others. Bruner distinguishes between behaviour whether mental or physical and actions, which he defines as intentional behaviour displayed within a specific cultural setting that includes the reciprocal actions of other participants. Bruner therefore, advocates providing children with kinds of experiences that would allow them to create meaning through their interaction during instructional activities and to assist student in—creating that meaning. Therefore, he suggests that

students to go beyond the content or information provided and fill in the gaps in their knowledge through exploration and enquiry.

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### **2.1.11. “Check Your Progress” :**

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(8) Who gave the ideas of learning by discovery ?

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(9) How many modes of presentation were given by Bruner ?

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(10) What is enactive representation ?

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### **2.1.12. Albert Bandura's Theory of Cognitive Development**

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Albert Bandura is a social learning theorist who is most concerned with social development and particularly with moral development. According to him reward and punishment both are very important for shaping behaviour. Through the process of conditioning and observational learning behaviour is learned. He observes, the positive correlation between reward and punishment and their positive effect on the behaviour of the child.

According to him, the child's behaviour is reflected by satisfaction and pleasure. In early childhood parental approval and fear or anxiety associated with punishment influence the moral and social development of the child. In the same way imitation is another process of mechanism through which child learns social and moral development. The child learns many things imitating the behaviours of the model through observation.

But imitation follows certain principles such as competency, prestige, power and similarity of the model.

**How does learning take place ?** According to Bandura (1977), the following processes or steps are usually involved in this kind of learning :

**(1) Attending to and perceiving the behaviour :** In this step the learner follows the behaviour of the person acting as a model. Particular aspect or total behaviour of the subject may grab close attention for analysis.

**(2) Remembering the behaviour :** In this step, what the learner observes is filed away in his memory in the form of mental images.

**(3) Converting the memory into action :** It is transformed into action only afterwards and then the observed relevant and accepted aspects of the model's behaviour are imitated by the learner.

**(4) Reinforcement of the imitated behaviour :** In this final step, the behaviour of the model imitated by the learner is reinforced for proper adoption and further continuance.

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### **2.1.13. Educational Implication :**

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Learn through observation and modelling proves to be an effective means of learning many things concerning one's behaviour. How one displays love and anger, shows sympathy and prejudices, speaks and writes, dresses and eats, takes initiative and is reinforced in context of the vicarious or model learning as propagated by the social learning theory.

This theory is very important to understand the socialization process because it takes place through the process of imitation and observation. It is very important for the parents to act well behaved because their gestures are observed by their children otherwise they may imitate wrong behaviour. This theory can be applied in a planned way to learn socially expected behaviour.

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### **2.1.14. “Check Your Progress” :**

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(11) Who suggests that reward and punishment both are very important for shaping development of personality ?

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(12) What is learning through observation ?

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### 2.2.1. Psychosocial Theory of Erikson

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Psychosocial theory on the stages of child development was proposed by Erikson. He stresses upon Epigenetic principle, according to which the development of new properties which are not contained in the original situation develop as result of environmental influences and the interaction between the former (original situation) and the latter (environment factors).

According to Erikson the stages of development are categorized into eight phases marked by specific development characteristics. The stages are as follows.

S. No.	Stage	Psychosocial Crisis
1.	Birth to 1st year	Trust vs Mistrust
2.	1 to 2 years	Autonomy vs shame, doubt.
3.	3 to 5 years	Initiative vs Guilt
4.	6 to 12 years	Industry vs Inferiority
5.	Adolescence	Identity vs Identity diffusion or Role confusion
6.	Early adult	Intimacy vs Isolation
7.	Young and middle adult	Generativity vs stagnation
8.	Late adult	Integrity vs Despair

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### 2.2.2. A brief description of the psychosocial stages

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#### Stage I : A sense of trust vs mistrust.

This stage begins from birth and is continued to eighteen months of age. The first and formal task of an infant is to develop the basic sense of trust in himself and his environment. For the fulfilment of his basic needs he completely depends on others. Due to dissatisfaction of his needs he gradually loses his sense of faith in the world around him. The sense of faith may be laid down during this period.

**Stage II :** A sense of autonomy versus a sense of shame. In this stage, child develops a sense of autonomy. He does not want help from others. He likes to do things in his own way. Parents should be careful about their autonomy. There should have balance between firmness and permissiveness to make a healthy sense of autonomy.

**Stage III :** A sense of initiative versus guilt. The third stage of psycho-social development between three to six years of age is characterized by the crisis of initiative versus guilt. Equipped with the sense of trust and autonomy the child now begins to take initiative in interacting with his environment. Therefore, there is need to resolve the crisis of initiative vs guilt at this stage of psycho-social development and it can be properly done if we allow the child to experiment with his initiative by properly supervising and guiding his activities and encouraging him to develop a habit of self-evaluation of the results of his initiative.

**Stage IV : Period of industry vs. inferiority.** Generally, by this age children begin to attend to school where they are made to learn various skills and the teachers as well as the school environment generate pressures on them to work hard in order to perform well. Parents also now begin to make demands upon the children to lend their hand with household duties or some cases put them with occupational responsibilities.

Therefore, the teachers and the school environment thus play a very significant role in helping the child out of the industry versus inferiority crisis.

**Stage V : The period of identity vs role confusion :**

This stage, beginning with the advent of puberty, is marked with the crisis of identity vs role confusion. Adolescents begin to search for their own personal identity equipped with the sense of trust, initiative and industry. The sudden changes in their bodies and mental functioning and the altered demands of society compel them to ask questions of themselves like, who am I ? What have I become? Am I the same person I used to be ? What am I supposed to do and in which manner am I to behave. There is return of heterosexual interests. Adolescents are concerned about their future role and status.

**Stage VI : Intimacy vs isolation :** This is the stage of early adulthood. Erikson considers social interaction has fundamental and unavoidable influence on personality development. So, during this stage the individual tends to develop a sense of intimacy or commitment to another person.

The opposite of intimacy is isolation. When one fails to develop an adequate sense of intimacy by using one's identity with that of another person or when relation deteriorates for one reason or another, one tends to develop a sense of isolation—a pulling away from relationships and breaking off of ties.

**Stage VII : The period of crativity vs stagnation :** This stage is called middle adulthood. In this stage, he tries to establish in a professional career. He wants to satisfy his needs for generativity, a concern to establish and guide the next generation. This is realized through nurturing his own children, guiding and directing other young people and by emgaging is some kind of creative, productive for fruitful activity that may prove beneficial to society.

Opposed to the sense of generativity, there is a tendency on past of the individual to become egoistic and selfish. This leads to stagnation and personal impoverishment.

**Stage VIII : Integrity vs despair.** This is old age. The person reflects upon the life lived and sometimes integrates even death into the pattern. During this last stage of psycho-social development one is confronted with the final cirsis of one's life span, termed ego-integrity vs despair. Ego-integrity refers to he integration or culmination of the successful resolution of all seven previous crisis in the course of one's life.

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### **2.2.3. Educational Implication**

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The theory of Erikson's psychosoical development is very important to know the personality pattern of a child. If we want to reshape the behaviours of a child it is important to know the personality pattern which may be understood from this theory. It also helps as to deal with our learner and to understand their immediate behaviour. Psycho-social development theory gives us information about the entire life span of an individual and negative aspects of life may a trace. These negative aspects of life can be channalized through education.

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### **2.2.4 “Check Your Progress” :**

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(13) How many stages were given by Erikson in the theory of psycho-social development ?

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(14) What are the stages in this theory of Psycho-social developments put formal by Erikson ?

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(15) What is duration of 1st phase of development of Erikson ?

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(16) Puberty begins in which stage according to Erikson ?

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(17) In which stage Puberty begins according to Erikson ?

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### **2.3.1. Psychoanalytic Theory by Freud :**

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Psychoanalysis is a school of psychology which did not originate in psychology itself. It remains a corner theme of modern psychiatry because Sigmund Freud who was a pioneer of psychoanalysis was actually a neurophysiologist (from the domain of psychiatry).

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### **2.3.2. Structure of the Psyche or Mind :**

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According to Freud structure of human mind is divided into two different parts. The first by arranging it into three layers as stated by him, the conscious, the subconscious and the unconscious and second by postulating three other components—id, ego and super ego.

Let us try to understand these terms.

**Conscious :** This structure of mind may be compared with the upper surface layer of a river. It occupies only one tenth of our total mental life. The ideas, thoughts and image that we are aware of any moment of our mental life is the conscious part of mind.

**Pre-conscious :** The preconscious mind is the part of the mind that represents ordinary memory. When we are not consciously aware of this information at any given time, we can retrieve it and pull it into consciousness when needed.

**Unconscious :** Below the preconscious mind lies the unconscious. It is most important of part of our mind. It contains all the repressed wishes, desires, feelings, drives and motives many of which even relate to sex aggression.

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### 2.3.3. The Concept of Id, Ego & Superego :

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- **Id.** The Id represents the animal in man and it remains in the unconscious. It is the source of mental energy and of all instinctive forces of the individual. It is quite selfish and unethical. It operates according to the pleasure principle.
- **Ego.** It acts as intermediary between three sets of forces. It plays balancing role i.e., to control the Id in terms of reality and to appease the Superego. In other way it may be termed as the executive of personality.
- **Super Ego.** It is opposite of Id. It represents ethical and moral aspects of mind. It remains with conscious mind. It is idealistic in nature rather than pleasure-seeking or destruction.

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### 2.3.4. Stages of Development :

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According to him, a child passes through five major stages of psychosexual development. Each stage is characterized by certain behavioural changes. The stages are given below :

**1. The oral stage :** The focus of pleasure at the oral stage is mouth. The child's love object is his mother's breast which he sucks to satisfy his hunger. The child's development starts with the act of nursing by his mother.

**2. The anal stage :** It refers to the stages when the focus of pleasure shifts from mouth to the anus. The child takes interest in the activities pertaining to known and pleasure is drawn from activities like urinating and defecating.



**3. Phallic stage :** This stage is confined with the ages between three to six years. The sexual pleasure shifts from anus to sexual organ. Oedipus complex is developed during this period. The male child desires his mother and wants to destroy his rival, the father but perceives his father as a powerful rival and is afraid of being harmed by castrating him. The primitive fear of physical harm is called "castration anxiety." Gradually this conflict is resolved by repressing his desire for his mother and identifying with his father. The female child likes her father, and hates her mother. This is called "Electra Complex".

About the oedipus and Electra phases, Freud says that these are the results of the sexual attraction or pleasure of that children experience in the company of the parent of the opposite sex.

**4. The latency stage :** This is the fourth developmental stage where in girls starts from 6 years and boys 7 to 8 years. They like to play with their own sex and neglect or hate members of the opposite sex.

**5. The genital stage :** Puberty is the onset of the genital stage. The children at this stage have very strange feeling, as they have strong sensation in their genitals and gets attracted towards the opposite sex. At this stage they may fall in love with themselves, takes interest in beautifying themselves and even go to the extent of sexual relation.

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### **2.3.5 Educational Implication :**

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Freud's theory of psychoanalysis is very important in the aspect of human psyche and the study of human behaviour and also as a therapy for treating the mentally ill. Children's development of personality may be treated through the understanding of different stages of personality as was developed by Freud like oral stage to genital stage.

The psychological counselling is suggested as required on the basis of analysis of the structure of mind. Therefore, Freud's contribution is understanding development of personality is revolutionary.

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### **2.3.6. "Check Your Progress"**

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(18) What is psycho-analysis ?

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(17) Differentiate between 'Anal' and 'Oral' stages.

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(18) Who is the author of psychoanalysis theory ?

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### **2.4.1. Ecological Theory of Bronfenbrenner :**

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In the process of child's socialization the Bronfenbrenner Theory of ecological development is very important. In the perspective of development and education of human being this theory is very effective.

Urie Bronfenbrenner was an American psychologist. He was the son of Doctor Alexander Bronfenbrenner and Eugenia Kamenetskaja, born of April 29, 1917 in Moscow, Russia. He came to the United States at the age of six. He left his last breath on September 25, 2005.

He is admired greatly in the field of developmental psychology. His most important brainchild was the ecological systems theory. In this theory, he defines four concentric systems which are the micro, the meso, the exo and the macro systems. He later added a time-related fifth system, the chrono system. The Bronfenbrenner ecological systems theory lays stress on the quality and content of the child's surroundings. He maintains that because the child develops, the interaction with the environments acquires a complex nature. The chance for complexity appears since the physical and cognitive structure of a child grows and nature. (Paquette & Ryan 2001)

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### **2.4.2. Bronfenbrenner's Structure of Environment**

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**The microsystem :** This layer is very closest to the child and contains the structures with which the child has direct contact. The microsystem encompasses the relationships

and interactions a child has with her immediate surroundings (Berk, 2000). Structure in the microsystem include family, school neighbourhood, or child care environments.

**The mesosystem :** This layer provides the connection between the structures of the child's microsystem (Berk 2000). Examples : the connection between the child's teacher and his parents, between his church and his neighbourhood, etc.

**The exosystem :** It describes the larger social system in which the child does not function directly. The structures in this layer impact the child's development by interacting with some structure in her microsystem (Berk 2000). Parent workplace schedules or community based family resources are example. The child may not be directly involved at this level, but he does feel the positive or negative forces involved with the interaction with his own system.

**The macrosystem :** It is the outer most layer in the child's environment. While not being a specific framework, this layer is comprised of cultural values, customs, and laws (Berk 2000).

**The chronosystem :** This system encompasses the dimension of time as it relates to a child's environment. Elements within this system can be either external, such as the timing of a parent's death, or internal such as the psychological changes that occur with the aging of child. As children get older, they may react differently to environmental changes and may be more able to determine more how that changes will influence them.

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### **2.4.3. Educational Implications :**

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This theory has dire implications for the practice of teaching. If there is any breakdown being occurring within children's home, is it possible for our educational system to make up for these deficiencies ? It seems now that it is necessary for schools and teachers to provide stable, long-term relationships. It is in the best interest of our entire society to lobby for political and economic policies that support the importance of parent's roles in their children's development. Bronfenbrenner would also agree that we should foster societal attitudes that value work done on behalf of children at all levels : parents, teachers, extended family, mentors, work supervisors, legislators.

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### 2.4.4 “Check your progress” :

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(21) Why ecological theory of Bronfenbrenner is very important in the aspect of socialization process of a child ?

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(22) Differentive between microsystem and mesosystem.

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### 2.5.1 Holistic Theory of Development (Steiner)

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Steiner schools have a pioneer approach to educate children, aiming to enable each stage of growth to be fully and vividly enjoyed and experienced.

#### **Holistic Learning Theory by Steiner**

In the field of human learning theories Rudolph Steiner is a famous personality. He is from Austria. He was born on 25th February year, and he took his last breath on 30th March 1925. He is not only theorist of holistic development but mathematician linguistic, philosopher, educator, artist, playaright, social thinker and esotericist. He is the founder of Anthroposophy or spiritual science, Waldorf educator.

His theory of learning plays very important role for language learning. Waldorf schools, all based on the theories and principles of Rudolph Steiner's work are all spread across the world and all of them have extraordinary innovations in the teaching world.

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### 2.5.2 Principles of Steiner Education

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- Up to the age of seven encourage play, drawing, stroy telling, nature study and natural things.
- Do not teach children younger than seven to read.

- ❑ Teach a child to write before you teach them to read.
- ❑ Find links between art and science.
- ❑ Engage with the child and make sure that they are enthusiastic about the material being covered.
- ❑ Give a moral lead but do not teach a particular set of beliefs.
- ❑ Encourage learning for its own sake. Do not just work for exams.

### **Three Holistic Learning Ideas :**

Through out this course teacher educators will see holistic learning ideas related to making three kinds of connections.

#### **1. Intrapersonal connections.**

In this area social studies and other curricular areas should be used to understand oneself.

- ❑ Nurture and give to self.
- ❑ Develop intrapersonal intelligence.
- ❑ Self-actualization.
- ❑ Align actions with values/philosophies.
- ❑ Understand emotions, pursue interests, develop strengths.
- ❑ Imagine and create.

#### **2. Interpersonal connections.**

Social studies and other curriculum areas should be used

- ❑ Empathize and understand others.
- ❑ Nurture and give to others.
- ❑ Understand humans and humanity.
- ❑ Develop interpersonal intelligence and social skills.
- ❑ Perceive interpersonal connections.

#### **3. Interconnectedness.**

Social studies and other curriculum areas should be used to understand the whole, to see the world in terms of inter-related and interconnected experience.

- ❑ Nurture and to give to all (environment, humans, other)
- ❑ Develop transpersonal intelligence : use logic, knowledge, intuition, emotion to solve problems.
- ❑ Understand interconnectedness.
- ❑ Perceive multi dimensionality of all things.
- ❑ See systems not parts.
- ❑ Embrace seemingly paradoxical ways of thinking (things are not either/or; rather they are)

### **Three Views of Teaching :**

There are three views of teaching as stated below.

#### **1. Teaching as transmission.**

The first and foremost task of teaching is to transmit knowledge. This is a teacher-centric approach in which the teacher is the transmitter of knowledge. A teacher's job from this perspective is to supply students with a designated body of knowledge in a predetermined order. The main focus of this approach is to develop the academic achievement of students.

#### **2. Teaching as transaction.**

This view perceives teaching as creating situations whereby students are able to transact with the material. The philosophy of constructivism consistent with this view. A common constructivist learning strategy is to help students generate what they know about a topic before a lesson. This helps them to strengthen the connection between known and new.

#### **3. Teaching as a transformation.**

Transformational teaching and learning invite both students and teachers to discover their full potential as learners, as members of society, and as human beings. The ultimate transformational goal is to become more nurturing human beings who are better able to perceive the interconnectedness of all human, plant and animal life (Narve, 2001) Holistic education is an educational philosophy consistent with the transformative view. Academic achievement from this perspective is seen as discovering and developing your unique talents and capabilities to the fullest extent possible.

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### **2.5.3. Educational Implication :**

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Steiner believed that education should be designed to meet the changing needs of a child as they develop physically, mentally and emotionally. So, in the aspect of allround development Steiner's theory of holistic approach is very important in to day's world. It helps a child to fulfil his full potential.

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### **2.5.4. “Check Your Progress” :**

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(23) Mention some basic principles of Steiner's education.

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(24) What is interpersonal connection ?

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### **2.5.5. Let Us Sum Up :**

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The development means the process that result in changes in an organism right from the beginning of its life. The term development is related to the overall changes, structural as well functional, in all aspects of one's personality namely, physical, mental, emotional, social and moral taking place contineously right-from conception till death.

The course of one's life from conception till death is devided into certain sepecific stages referred to as the stages of growth and development namely, infancy, childhood, adolescence, adulthood and old age. Each of these stages chronologically extent over a rather definite period in years and is characterized by typical norms of behavioural characteristics which are specific to the particular stages in all the different divenssions of the make-up of one's personality.

Various theories have been put forward by different psychologists from time to time for tracing the developmental processes in one or the other dimension of one's personality. Piaget's theory of cognitive development idnetifies four distanct stages of children's

intellectual development sensory-motor, pre-operational concrete operational and formal operational stages. A child's cognitive abilities develop as he progresses from stage to stage.

Freud's theory of psycho-sexual development points out five stages of development. Such as—oral, anal, phallic, latent and genital. These stages are separated from each other on the basis of the shift in the areas of a sex gratification known as erogenous zones. Failure to be appropriately gratified at a particular stage may result in a fixation at that stage.

Erikson's theory of psycho-social development brings out eight stages spread over the whole span of human life. These are trust vs mistrust (birth to 1 year) to ego-integrity vs despair (65 years onwards). Each of these stages is associated with a distinctive crisis of life faced by the individual at that particular stage. How well one will be developed and acquire positive or negative aspects of behaviour depends upon the manner in which those crisis of life are resolved by him.

Bandura's social learning theory emphasizes the power of observational learning. It advocates that most of what we learn is acquired through simply observing and imitating the behaviour of others who are taken as models.

Bruner identifies three "modes of representation", namely Enactive, Iconic and Symbolic, corresponding to the chronological and mental development.

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### **2.5.6. Unit End Exercise :**

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- (i) Define and explain the meaning of cognitive development.
- (ii) Why Piaget's theory of cognitive development and its stages are very important in the context of child learning ?
- (iii) Why Vygotsky's theory of social development is relevant in present social context ?
- (iv) Compare the Vygotsky's theory of social development with the theory of Piaget's cognitive development. Which one do you think is more relevant in today's context ?
- (v) Explain Bruner's theory of cognitive development.
- (vi) Write educational implication of Bruner's cognitive theory of development.
- (vii) Why Bandura's theory of social learning is very important in the aspect of child development ?



- (viii) What are the educational implications of Bandura's theory of social learning ?
- (ix) Why psycho-social theory of development is very important in learning ?
- (x) How many stages are there in the psycho-social theory of development. Discuss the characteristics of each stage.
- (xi) Discuss the various stages of personality development of Freud according to psycho-analysis theory with their characteristics.
- (xii) Discuss the structure of 'psyche' or mind of the theory of psycho-analysis of Sigmund Freud.
- (xiii) Why ecological theory of Bronfenbrenner is very important in the aspect of socialization process of a child ?
- (xiv) Discuss the importance of principles of Steiner's education.

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### **2.5.7. Answer to 'Check Your Progress'**

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- (1) The cognitive development means the development of thinking process. It looks at how we process information, we receive and how the treatment of this information leads to our responses.
- (2) Object permanence is observed in the sensory motor stage.
- (3) Sucking scheme is reached in the sensor of motor stage.
- (4) Inductive reasoning.
- (5) Use of language and symbols.
- (6) Lev Vygotsky's Social learning Theory.
- (7) The distance between the actual developmental level and independent problem solving ability.
- (8) Jerome Bruner.
- (9) Three modes of presentation.
- (10) Enactive representation can only demonstrate the part through appropriate motor experiences.
- (11) According to Bandura reward and punishment both are very important for shaping of behaviour. He opined that child's behaviour is reflected by satisfaction and pleasure.

- (12) This theory is very important to understand the socialization process because it takes place through the process of imitation and observation. It is very important for the parents to act well behaved because their gestures are observed by their children otherwise they may imitate wrong behaviour.
- (13) According to Erikson, the stages of development are categorized into eight phases marked by specific developmental characteristics.
- (14) The duration of 1st phase of development is birth to 1st year.
- (15) Puberty begins in the 5th stages, the period of identity vs role confusion.
- (16) Psychoanalysis is a school of psychology which did not originate in psychology itself. It remains a concern for modern psychiatry because Sigmund Freud who was a pioneer of psychoanalysis was actually a neurophysiologist (from the domain of Psychiatry).
- (17) In the oral stage, the focus of pleasure is in the mouth. The child's love object is his mother's breast which he sucks to satisfy his hunger. Whereas the anal stage refers to the stages when the focus of pleasure shifts from mouth to the anus.
- (18) Sigmund Freud
- (19) According to Bronfenbrenner societal attitudes should foster that value work done on behalf of children at all levels parents, teachers, extended family, mentors work supervisors and legislators.
- (20) In the micro system the layer is very closest to the child and contains the structures with which the child had direct contact.
- Whereas in the meso system, this layer provides the connections between the structures of the child's microsystem.
- (21) According to Steiner, up to the age of seven learner should encourage with play, drawing, storytelling, nature study etc. He also suggests that teach a child to write before you teach them to read.
- (22) Interpersonal connections mean encouragement of developing the interpersonal intelligence and social skills and to perceive interpersonal connections.
- (23) ?
- (24) ?

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## 2.5.8. References

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## **Unit - 3 □ The Early Years (Birth To Eight Years)**

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### **Structure**

- 3.1 Pre-natal Development : Conception, stages and influences on Prenatal Development**
  - 3.1.1 Introduction**
  - 3.1.2 Objectives**
  - 3.1.3 Conception of Prenatal Development**
  - 3.1.4 Stages of Pre-natal Development**
  - 3.1.5 influences on Prenatal Development**
  - 3.1.6 “Check Your Progress”**
- 3.2 Birth and Neo-natal Development : Screening the newborn—APGAR Score, reflexes and responses, neuro-perceptual development**
  - 3.2.1 Introduction**
  - 3.2.2 Objectives**
  - 3.2.3 Screening the newborn**
  - 3.2.4 The Newborn (APGAR) Scoring System**
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  - 3.3.6 Social and emotional developmental milestones**

- 3.3.7 Significance of milestones
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- 3.4 Environmental factors influencing early childhood Development
  - 3.4.1 Introduction :
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  - 3.5.3 The importance of play in promoting healthy child development
  - 3.5.4 “Check Your Progress”
- 3.6 Let us Sum-up
- 3.7 Unit End Exercises
- 3.8 “Answer to check progress”
- 3.9 References :

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### **3.1 Pre-natal Development : Conception, stages and influences on Prenatal Development**

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#### **3.1.1. Introduction**

As far as the human being is concerned, life starts with the conception in the mother's womb as a result of the process of fertilization of the ovum (egg cell) of the mother by the sperm cell of the father. The mother's womb then becomes the site and the means for the growth and development of the new life and it is only after about nine months that the baby is able to come into the world as a newborn. The period spent in the mother's womb is termed as pre-natal period and is usually not included in the computation of one's chronological age.

#### **3.1.2 : Objectives**

- to know the conception of Prenatal development.

- ❑ to understand various stages of Prenatal development.
- ❑ to know the influences of Prenatal development.

### **3.1.3 : Conception of Prenatal Development**

The pre-natal development means the growth and development of a new life in the mother's womb. In all animals, including human beings, the pre-natal period resembles the time taken by a germinating seed to come out of the soil, which then grows and develops into a full-fledged plant or tree. The processes by which a germinating seed or conceived organism is turned into the nature plant or full-fledged being are collectively termed as growth and development.

### **3.1.4 Stages of Pre-natal Development**

In duration of pregnancy is divided into three equal segments called trimesters. The first trimester (month-3) is essential to the proper development of the infant and encompasses both the ovum and embryonic period of pre-natal development. This is when all organs, nerve cells, and brain cells develop. This when most spontaneous abortions (miscarriages) occur. They generally are caused by abnormal development of the fetus and are nature's way of eliminating a chromosomal abnormality. It is vital that all necessary nutrients be available to the fetus in order to develop properly. This period is also called the period of the zygote. This stage begins at conception and lasts until the zygote is implanted in the mother's uterus.

The second trimester (month 4-6) is often referred to as the "golden trimester." This is when the mother generally feels the best. Morning sickness and nausea have generally disappeared, and the mother is quite comfortable. In this period, the umbilical cord is connected to the placenta. The placenta is an organ that serves as a medium for the exchange of nutrients and waste products between the mother and the fetus. During this period, all the organs that will remain present at birth are formed. The third trimester comprises months 7-9. These are important months for the baby as its organs and body systems mature and prepare to function on their own. The fat accumulated during this time will give the baby a "head start" on life. The third development period is also called the period of the fetus. The fetus will begin to resemble a human being, and features will increase in clarity. During the fetal period the baby may increase in length by as much as 12 inches.

### 3.1.5 Stages and influences on Prenatal Development

Since the prenatal environment is the mother's body, virtually everything that impinges on her well-being, from her diet to her moods, may alter her unborn child's environment and affects its growth.

Not all environmental hazards are equally risky for all fetuses. Some factors that are teratogenic (birth defect-producing) in some cases have little or no effect in other. The timing of exposure to a teratogen, its intensity, and its interaction with other factors may be important.

The developing organism can be greatly affected by its prenatal environment. The likelihood of a birth defect may depend on the timing and intensity of an environmental event and its interaction with genetic factors.

Important environmental factors involving the mother include nutrition, physical activity, smoking, intake of alcohol or other drugs, transmission of maternal illness or infections, maternal age, incompatibility of blood type, and external environmental hazards, such as chemicals, and radiation. External influences may also affect the father's sperm, such as teratogenic, fetal alcohol syndrome (FAS) and AIDS.

#### 3.1.5 “Check Your Progress”

1. What do you mean by prenatal development ?

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2. What are the stages in prenatal development ?

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3. What is fetus ?

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4. What is FAS ?

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5. What is AIDS ?

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### **3.2 Birth and Neonatal Development : Scruning the newborn— APGAR Score, reflexes and responses, neuro-perceptual development**

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#### **3.2.1 Introduction**

The neonatal development takes place during the time frame of birth to 28 days. It represents the time of the greatest risk to the infant. Approximately 65% of all deaths that occur in the first year of life happen during these 4- weeks period. The rapid development of newborn's brain begins in the prenatal stage and continues after birth. Although the cell formation is virtually complete before birth - a newborn baby has 100 billion brain cells. Brain maturation and important pathways and connections are progressively developed after birth in this stage. So, in this period the environment has an important impact on determining how the brain and central nervous system grows and develops. In this context, inadequate nutrition before birth and in the first year of life can seriously interfere with brain development and lead to such neurological and behavioural disorders as learning disabilities and mental retardation.

Therefore, Neonatal Development is the most important period of development in a human life. Neonatal development is the key to full and productive life for a child and to the progress of a nation. It is a critical stage of development that forms the foundation for children's future well-being and learning. Research has conducted that half of a person's intelligence potential is developed in this stage and that interventions can have a lasting effect on intellectual capacity, personality and social behaviour.

#### **3.2.2 : Objectives**

- to know how to screening the newborn



- to know APGAR Score
- to understand reflexes and responses,
- to know neuro-perceptual development.

### 3.2.3 Screening the newborn

Newborn screening aims at the earliest possible recognition of disorders to prevent the most serious consequences by timely intervention. Screening is not a confirmatory diagnosis and requires further investigations. But this screening is very important before discharging a newborn from their respective clinic. We can take some guidelines from developed countries such as high prevalence of certain endocrinopathies, metabolic errors and hearing loss which, if recognized later, contribute to significant morbidity. If we see the Indian scenario, then we will see that neonates are not screened in India because the health policies have typically targeted mortality and infectious morbidities but not disabilities.

These policies have been successful in lowering infant mortality rates, but the net effect of these gains has been somewhat offset by an increase in disability.

One of the basic requisites for a screening programme is the availability of the epidemiological data regarding disease burden. But in our country like India the diagnosis is delayed due to lack of awareness among the professionals and of easily accessible technical expertise.

Therefore priorities have been given across the country for inclusion in the first phase such as congenital Hypothyroidism.

It has been included in newborn screening programme and serves as a template for both introductions, fulfilment of all criteria and cost effectiveness of the newborn screening. This is because of availability of simple therapeutic measures and the good response that follow early detection and treatment.

**Deafness** — The importance of screening for deafness can clearly be understood from the fact that if hearing aid can be provided in the prelingual phase it can minimize the negative impact of the sensorineural hearing loss on speech and language acquisition.

**Hemoglobin Disorders** : It is considered to be a serious problem by WHO (World Health Organisation). In India, the carrier frequency of beta thalassemia varies from 1–17% (mean 3.3%). It is estimated that about 10,000 babies are affected with beta thalassemia are born every year.

**G6PD Deficiency** : G6PD screening should be given importance. It should also be included in the first phase but in regionalized manners. Both ELISA and fluorescent immunoassay based tests can be done.

**Congenital Adrenal Hyperplasia (CAH) :** The incidence of CAH in India has been found to be 1 : 2575 from a small sample survey. In a study from ALLMS, New Delhi, CAH was diagnosed in about 38% of children presenting with ambiguous genitalia. What was most striking was that only one child out of the 53 cases studied was brought immediately after with 14 presenting after the age of one year.

### 3.2.5 : The Newborn (APGAR) Scoring System

Almost two decades ago the need was felt for a way to judge the condition of a newborn baby quickly and accurately shortly after birth.

The original intention of establishing a scoring system was to predict survival, to compare methods of resuscitation which were in use at the time, of through the infant's responsiveness after delivery to compare prenatal experience in different hospital. The influence of various obstetrical practices such as induction of labor, elective cesarean section and maternal anesthesia and analgesia might well be reflected in the score. It was further more hoped that the scoring system would ensure closer observation of the infant during the 1st minute of life.

Therefore, mostly we can say, the APGAR scoring system is used to assess newborn infants for depression of cardiopulmonary and neurological function. Scoring is done at 1 and 5 minutes after birth.

The scoring system is given below for better understanding of the topic.

Sign	0 points	1 points	2 points
Heart	Rate	Absent	<100 >100
Respiratory Effort	Absent	Weak cry	Strong cry
Muscle Tone	Flaccid	Some flexion	Active motion
Reflex Irritability	No response	Grimace	Cough, sneeze, or cry
Colour	Blue, pale	Body-pink; extremities blue	Fully pink

#### Interpretation :

**Minimum Score : 0**

**Maximum Score : 10**

The lower the score the more profoundly affected the infant is with score 5 considered serious. A low initial scores with no improvement in 5 minute score is associated with neonatal problems including death.

### **3.2.5 : Reflexes and responses of Newborn**

Neonatal reflexes are inborn reflexes which are present at birth and occur in predictable fashion. A normally developing newborn should respond to certain stimuli with these reflexes, which eventually become inhibited as the child matures.

Newborn depend on their inherent reflexes for survival. Absence or extended duration of these reflexes could indicate a problem with the baby's central nervous system. Just after birth, the newborn will be assessed for the following reflexes.

**Rooting Reflexes :** When a finger or nipple is placed into the baby's mouth, the baby begins to suck. Also, if you lightly stroke the cheek, the newborn will turn towards the stroking and open her mouth to accept the nipple. This reflex usually lasts for up to seven months.

**Palmar and Planter Grasp Reflexes :** The baby will grasp an object placed in his hands or curl his toes around fingers placed near his toes. The palmar reflex usually lasts three to four months and the planters can last upto a year.

**Moro's Reflex :** This startle reflex appears with a sudden loud noise or any intense stimulation. The arms and legs extend and the fingers fan outward, with the thumb and forefinger forming a e-shape. This reflex usually disappears within three to four months.

**Toxic Neck Reflex :** The baby appear like a "fencer" when lying flat on her back and facing to the side. Whichever direction her face is turned, that arm will extend and the other will be flexed. Babies may sleep in this position for a couple of years; however, an awake baby should not display this reflex beyond four months of age. Prolonged display of this reflex in an awake state could be an indication of cerebral palsy.

**Doll's Eye Reflex :** As with a doll eyes, when a baby is lying on her back, if you turn her head from side to side, her eyes remain fixed. This reflex lasts up to two months of age.

**Babinski's Reflex :** The baby's toes will hyper extend when the bottom of his foot is stroked upward from the sole to the ball of his foot. This reflex disappears within a year.

**Stepping Reflex :** When the newborn is held upright with the feet on a flat surface, the baby will make stepping motions. This reflex diminishes by the fourth month and does not return until the baby begins to stand and walk.

**Baues' Reflex :** When pressure is applied to the soles of the feet of a newborn lying face-down, the baby will be making crawling movements. This disappears by six weeks of age and returns when the baby is learning to crawl.

**Traction Reflex :** When a newborn is pulled up by the wrists to a sitting position, her

head will first fall back, then lift upright and held before it falls forward onto the chest. This is a sign of maturity and muscle tone.

**Arm Recoil :** The baby's arm will flex rapidly after extending them.

### **3.2.6 : Normal Newborn Reflexes and Behaviour**

Some newborn behaviour that concern parents are not signs of illness. Most of the following harmless reflexes are due to an immature nervous system and will disappear in 3 or 4 months :

- Chin trembling
- Lower lip quivering
- Hiccups
- Irregular breathing (This is normal if your baby is content, the rate is less than 60 breath per minute, any pauses are less than 10 seconds long, and your baby does not turn black. Occasionally infants take rapid, progressively deeper, stepwise breaths to expand their lungs.
- Passing gas (not a temporary behaviour)
- Sleep noise from breathing and moving
- Sneezing
- Spitting up or belching
- Brief stiffening of the body after a noise or sudden movement (also called startle reflex), the Moro reflex or the embrace reflex.
- Straining with bowel movements.
- Throat clearing (or gurgling sounds of secretions in the throat).

Trembling or jitteriness of arms and legs are common during crying (Jittery babies are common. Convulsions are rare. During suck with their mouths, and don't cry.) If your baby is trembling and not crying. Give her something to suck on. If the tremblings don't stop when your baby is sucking, call your physician's office immediately.

### **3.2.7 : Neuro-perceptual Development**

Neuro-perceptual development refers to perception of information from objects or events available to multiple senses stimulation. Because most objects and events can be seen, heard, and touched, everyday perception is primarily intermodal. Despite the fact that information about the world is carried through different sensory channels that each provide distinct form of stimulation, we are able to perceive a stable world of unity

objects and events (people speaking, cars honking), rather than separate sights, sounds, and tactile impressions. The senses work together as a coordinated perceptual system, even in newborns, and intermodal perception develops rapidly and with increasing specificity across infancy.

### **Importance of perceptual development**

How do infants learn to detect unified multimodal events such as person speaking. Evidence indicates that amodal information, particularly temporal synchrony between sights and sound provide the glue that binds information across the senses and thus serves as a solution to the age-old binding problem. Thus, amodal information plays a significant role in guiding and constraining these aspects of events we selectively attend, particularly in early development when attention is least flexible and capacity is most limited. Later, when attention is more flexible and efficient, we can attend to amodal properties as well as more specific properties of the same events in a shorter time. Furthermore, because selective attention provides the basis for what is perceived, learned, and later remembered intersensory redundancy has a powerful organizing influence on early perceptual, cognitive, social and emotional development.

### **Development of auditory-visual perception**

Scientists have discovered that even young infants are skilled at perceiving amodal information, that intermodal perception improves across the first year of life, and that it develops in order of increasing specificity, with global information detected developmentally prior to more specific levels of stimulation. Consistent with the pattern of differentiation and "increasing specificity" proposed by Gibson.

**Audiovisual Space :** As early as the first weeks of life, infants reliably move their eyes in the direction of a sound. This early coordination of auditory and visual space is important because it enables infants to discover visual information at the source of the sound and thus promotes detection of intersensory redundancy.

**Object and event perception :** In the first month following birth, infants can detect the temporal synchrony and spatial collocation uniting the sights and sounds of an object moving and striking a surface. By two to five months, infants match soundtracks with object motions on the basis of finer levels of amodal information, such as substance (elastic vs rigid), composition, tempo, and rhythm. These remarkable abilities illustrate the principle of increasing specificity and how processing of global information such as intersensory redundancy scaffolds the development of more specific processing.

**Social development :** People provide a great deal of multimodal stimulation for infants, including talking, laughing, singing and touching. Adults and infants also engage in

richly structured multimodal interactions, called protoconversation.

**Speech perception and language :** Speech is inherently multimodal, involving coordinated facial, vocal and gestural information, and audiovisual redundancy promotes learning in this domains as well.

**Development of visual-tactile and visual motor perception :** Amodal information also guides and constrains perception across vision and touch. For example, when we feel as object with our hands, we can perceive the same shape, size, texture, and substance that we see.

**Oder and vision :** Young infants show recognition of their mother on the basis of her smell, and breastfed infants prefer the order of their mother over that of another lactating women, illustrating their sensitivity to object odor combinations.

### 3.2.8 “Check Your Progress”

6. What you mean by Newborn Screening ?

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7. What is meant by congenital hypothyroidism ?

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8. What is Deafness ?

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9. What is Hemoglobin Disorder ?

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10. What is G 6PD ?

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11. What do you mean by APGAR Scoring system ?

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12. What is minimum score ?

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13. What is maximum score ?

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14. How much points should you get for fully pink ?

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15. Scoring is done within the time of ?

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16. What is neonatal reflex ?

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17. What does indicate in the absence or extended duration of these reflexes ?

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18. What do you mean by stepping reflex ?

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19. What is Arm Recoil ?

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20. What is neruo-perceptual development ?

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21. When infants can detect the temporal synchrony ?

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22. What is scaffolding ?

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### **3.3 Milestones and variations in Development**

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#### **3.3.1 Introduction**

Infants go through many changes during their first 12 months and so two infants develop at the same pace One infant may reach a milestone early, another later. Infants born prematurely tend to reach miles stones a little later. It is also not unusual for infants to regress in one skill or another from time to time. Many infants, for example, develop sleep problems when their teeth begin to come in.

The following is a general guide to some basic milestone for physical, cognitive, language and social and emotional development from birth to 12 months.

#### **3.3.2 Objective**

to know the developmental milestones and variation.

#### **3.3.3 Physical development milestones**

- Infants develop basic reflexes needed to survive, such as sucking, swallowing, coughing, gagging, elimination, grasping, blinking and staring.
- Their eyes are not coordinated and may appear to cross.
- They cannot organize their hands and eyes to work together

#### **3.3.4 Cognitive developmental milestones**

- Infant will watch an object about 12-15 inches away, especially if it is moving slowly from one side of their field of vision to the other.
- They can distinguish smells and taste. They may prefer sweet-testing liquids and wil recoil from unpleasant smells.

#### **3.3.5 Language developmental milestone**

- Infants communicate mostly by crying but sometimes by making other noises.
- They will turn in direction of a familiar voice.

### **3.3.6 Social and emotional development milestones**

- ❑ Infants will sleep, on average, between 17 and 19 hours a day. But they do it in a series of short sleeping periods.
- ❑ They enjoy being held and rocked.

#### **1–4 months**

##### **Physical development milestones**

- ❑ Infants when face down, should be able to lift their head and chest and look both ways.
- ❑ They move their arms and legs in a squirming fashion and kick their legs out.

##### **Cognitive development milestones**

- ❑ Infants move their heads toward different colours and changes in lighting.
- ❑ They are attracted to people's voices.

##### **Language developmental milestones**

- ❑ Infants make cooing and gurgling noises, especially when a caregiver talks to or smiles at them.
- ❑ They cry when they need something.

##### **Social and emotional milestones**

- ❑ Infants respond with a smile when someone smiles at them.
- ❑ A familiar voice can soothe them when they are upset.

#### **4–8 months**

##### **Physical development milestones**

- ❑ Their first teeth may come in, causing gum swelling and irritation.
- ❑ They can support a bottle on their own during a feeding.

##### **Cognitive development milestones**

- ❑ Infants anticipate being fed and may open their mouth when food is in sight.
- ❑ They will focus on an object and reach for it.

##### **Language developmental milestones**

- ❑ Infants will recognize their own name.
- ❑ They repeat the same sounds over and over.

### **Social and emotional milestones**

- ❑ Infants have a strong attachment to, and preference for, their primary caregivers.
- ❑ They may start to show stranger anxiety around unknown adults.

### **8–12 months**

#### **Physical development milestones**

- ❑ They manage to drink from a cup with a little help.
- ❑ They can sit up by themselves.

#### **Cognitive development milestones**

- ❑ Infants imitate the movements of their caregivers.
- ❑ They start to understand how to use common objects.

#### **Language development milestones**

- ❑ Infants will imitate spoken words or sound made by their caregivers.
- ❑ Infants begin to interact verbally with their caregivers.

#### **Social and emotional development milestones**

- ❑ Infants will try to keep their primary caregivers in sight.
- ❑ They may share belongings with other infants.

### **3.3.7 Significance of these milestones**

All these milestones are the parameters of the development and we can say general guide. Some infants will reach them early, some later, not all infants will show all of the behaviours on the list.

Therefore, doctors consultancy is very important thing if it is observed that infant does not achieve a majority of the milestones within a reasonable period of time after the end of stage and it may be seen that infant suddenly stops making consistent progress over several weeks. It is important to intervene early to improve the outcomes of infants who do not have developmental delays.

### 3.3.8 “Check Your Progress”

23. Sucking is the basic criteria of which milestone ?

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24. Mention any one basic criteria of cognitive development in the month of 1– 4 ?

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25. In which duration of month infants will recognize their own name ?

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26. Speaking word is the criteria of which milestone ?

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## 3.4 Environmental factors influencing early childhood development

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### 3.4.2 Introduction :

The factors lying outside the individual in his environment are said to be the external factors influencing development. The principle intention of this. SLM is to highlight the factors which externally influence the development of the early childhood. Early childhood is an extremely sensitive period in human development, during which the brain, especially the circuitry governing emotion, attention, self-control and stress, is shaped by a child's environment. As children grow, the biological and environmental factors that determine their development become intertwined. When the environment is a secure, positive one, these factors join forces to help maximize children's potential.

But when children face enduring obstacles to healthy development, such as poverty, inappropriate care, or violence, environment and biology may route them on "course to emotional, physical and mental health problems.

### **3.4.2 : Objective**

(i) to know how environmental factors influence early childhood development.

### **3.4.3 Environment available after birth**

The children are influenced in various ways from their immediate environment. These may be described as follows.

(i) **Accidents and incidents in life :** The growth and development of a child is greatly influenced by the good and bad incidents and accidents which he happens to meet in his life time. Sometimes, a small injury or an incident may change the entire development course of his life. For example, if a child's nervous system is damaged in an accident, it will hamper his mental development and in turn it will affect his development in other spheres—social, emotional, moral and physical.

(ii) **The Quality of Physical environment, medical care and nourishment :** A child's growth and development is greatly influenced by the quality of his physical environment and medical care and nourishment available to him for his living and working. Those include open space, balanced diet, good living and working condition and proper medical care. The proper development depends on above mentioned proper condition.

(iii) **The Quality of the facilities and opportunities provided by the social and cultural forces :**

Social and cultural environment of a child are crucial factors for his proper development. Because a child gets huge potential from his social and cultural environment which influence the entire course of his development.

**A few of such conditions are pointed out below :**

(i) Economic and social status of the parents and the family.

(ii) The quality of the neighbourhood and surrounding environment.

(iii) The quality of schooling received by a child.

(iv) The quality of peer group relationships and company of a child.

(v) The quality of treatment mode available to a child and his family with regard to his caste, religion, nationality or citizenship.

### 3.4.5 “Check Your Progress”

27. What is environment ?

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28. What is medical care ?

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29. Who are the peer group ?

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30. What is quality schooling ?

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31. What do you mean by economics status of a family ?

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## 3.5 Role of play in enhancing development

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### 3.5.2. Introduction :

In the childhood development, play has a unique role to play. This issue is very important because of the recent impetus for a more academic focus in early childhood classrooms

and questions about the developmental benefits of play. This concern is not only important for academic excellency but emotional and social development. In this aspect, the role of teachers and parents could play in making play a developmental and educational purpose.

**3.5.2 Objective :**

(i) to know the role of play in enhancing development.

**3.5.3 The importance of play in promoting healthy child development :**

Play is essential to development because it contributes to the cognitive, physical, social and emotional well-being of children and youth, play also offers an ideal opportunity for parents to engage fully with their children. Despite the benefits derived from play for both children and parents, time for free play has been markedly reduced for some children. In modern times, the variety of factors that have reduced play, including a hurried lifestyle, changes in family structure, and increased attention to academics and enrichment activities at the expenses of recessor free child centred play.

Therefore, the childcentric education offers guidelines on how pediatricians can advocate for children by helping families, shcool systems and communities consider how best to ensure that play is protected as they seek the balance in children's lives to create the optimal developmental milieu.

**3.5.4 “Check Your Progress”**

32. What is child centric education ?

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33. What do you mean by academic excellency ?

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34. What does it mean by allround development ?

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35. What do you mean by optional development ?

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### **3.6 Let us Sum-up**

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Early childhood is the most rapid period of development in a human life. Although individual childhood develop at their own pace, all children progress through and identifiable sequence of physical, cognitive, and emotional growth and change.

Because of identifiable sequences of physical cognitive, and emotional growth, it always go through a stages from pre-natal to old age. The prenatal means the growth and development of a new life in the moters wombs. It extences up to old age and passes various stages like infance early childhood, childhood, adolescence and adulthood.

The early child development approach is based on the Process fact that young children respond best when caregives use specific techniques designed to encourage and stimulate progress to the next level of development. In this aspect the newborn screening is the best thing at the earliest possible recognition of disorders to prevent the most serious consequences by timely intervention.

The another thing of newbron caring is APGAR scoring system.

The APGAR scoring system is used to asses newborn infants for depression of cardiopulmonary and neurological function. The scoring is done at 1 and 5 minute after birth.

In the same way, newborn reflexes are also an important thing to judge the baby's condition at the time of birth. Newborn depend on their inherent of these reflexes could indicate a problem with the baby's central nervous system.

In the total developmental processes, neuro-perceptual development perception is a



vital thing because without proper development the infant may face permanent disability. Hence, neuro-perceptual development refers to perception of information from objects or events available to multiple senses stimulation. Because most objects and events can be seen, heard, and touched. Everyday perception is primarily intermodal.

It is also an important task to detect the variations in development. The process of knowing the variations in development is called developmental milestones. Through this milestones we can assess the physical, cognitive, language, social and emotional development from birth to 12 months.

As a conscious and mature caregivers, we should be more aware about the environment of early childhood as an external factors of development. Early childhood is an extremely sensitive period in human development, during which the brain, especially the circuitry governing emotion, attention, self-control and stress, is shaped by a child's environmental.

Within this environmental factors, play is essential to development, because it contributes to the cognitive, physical, social and emotional well-being of childhood and youth.

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### **3.7 Unit End Exercises**

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- (1) What do you mean by prenatal development ? Explain briefly the stages of prenatal development.
- (2) What is newborn screening ? Why newborn screening is very important after birth of a newborn ?
- (3) What is APGAR scoring system ? Briefly explain the importance of APGAR scoring.
- (4) What do you mean by neonatal reflexes ? Discuss any two reflexes.
- (5) What is meant by neuro-perceptual development ? Write an essay about neuro-perceptual development.
- (6) What are the milestones of development ? Write necessity and importance of milestones in development.
- (7) Briefly outline how does the environmental factors influence early childhood development.
- (8) Write note on the role of play in enhancing development.

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### **3.8 Answer to check progress**

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- (1) The prenatal development means the growth and development of a newlife in the mother's womb.
- (2) There are three stages in the prenatal development.
- (3) Fetus means the development of infant within 3 month's in the mother ovum womb.
- (4) FAS means, Fetal Alcoholic Syndorme.
- (5) AIDS is one kind of sexually transmitted disease.
- (6) Newborn screeing is the earliest possible recognitions of disorders to pervent the most serious consequences by timely intervention.
- (7) Congenital Hypothyroidism is the first phase intervention of screeing.
- (8) Deafness refers to hearing impairment.
- (9) Hoemoglobin, Disorders—It is considered to be a serious health problem by WHO.
- (10) G 6PD Deficiency is one knid of disorder is observed in the newborn.
- (11) APGAR scoring means a way to judge the condition of a newborn baby quickly and accurately.
- (12) Minimum Score in 'O'.
- (13) Maximum Score is '10'.
- (14) Atleast 2 points.
- (15) Scoring is done within 1 and 5 minutes.
- (16) Neonatal reflexes are inborn reflexes which are present at birth and occur in predictable fashion.
- (17) Absence or extenced duration of these reflexes could indicate a problem with the baby's central nervous system.
- (18) Steeping reflex means the baby will make steeping motions.
- (19) Arem Recoil means the baby's are willflex repidly after extending them.
- (20) Neuro-preceptual development reflex to perception of information from objects or events available to multiple sensus stimulation.
- (21) In the first month following birth, infants can detect the temporal synchrony.

- (22) Scaffolding means support based development.
- (23) Sucking indicates physical development milestones.
- (24) Criteria of cognitive development as like a baby can distinguish smells and taste.
- (25) Infants can recognize their own name in the duration of 4–8 months.
- (26) Speaking word is the criteria of language milestones.
- (27) The environment means the atmosphere where we born and stay up to our last breath.
- (28) Medical care refers to medical support with medicine and treatment if there is any kind of disease or other things.
- (29) The peer group may be classmate or same age someone.
- (30) Quality schooling refers to school environment which ensures quality education in this school ....
- (31) Economic status means financial strength of a family.
- (32) Child centric education means children are the ultimate of education.
- (33) Academic excellency means good academic performance.
- (34) All round development refers to the development of physical, mental and second development.
- (35) Optimal development means height level of development.

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## Unit - 4 □ Middle Childhood to Adolescence

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### Structure

#### 4.1 Introduction

#### 4.2 Objectives

#### 4.3 Middle childhood to adolescence

4.3.1 **Physical, Social, Emotional capabilities emerging –during Middle Childhood to Adolescence (From nine years to eighteen years)**

4.3.2 **Emerging capabilities across domains of cognition, metacognition, creativity, ethics.**

4.3.3 **Issues related to Puberty**

4.3.4 **Gender and development.**

4.3.5 **Influence of the environment (social, cultural, political) on the growing child**

#### 4.4 Let us sum up

#### 4.5 “Check your progress”

4.5.1 **Unit-End Exercises**

4.5.2 **Answer to “Check your progress”**

#### 4.6 References

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### 4.1 Introduction

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In times and places children are valued because of the reason that by studying children we can unlock the mysteries of human species in general. The child became the best natural laboratory for the study of evolution and the idea of development dominated the science of man Thus was born **developmental psychology** a field devoted to the study of development of child from conception through childhood, adolescence and beyond. The period of life span from conception till birth is the **prenatal stage** which is followed by the **neonatal stage**; the first 4 weeks after birth. This is a time of transition

from the total dependency of prenatal life to a more independent existence. Next comes the period of **Infancy**, a period that lasts about 4 weeks to about 18 months, when language appears. From the age of 18 months through the age of 6 is the age of **early childhood** characterised by 'play'. The actions that children make to switch over from sensory motor thinking to thinking that involves internal manipulation of symbols. The elementary school years the years 6 through 12 in a child's life, is the most important period. It is the period of **middle childhood** and **late childhood** which are filled with both motion and emotion as the child confronts the diverse demands of school and society. It is a period when children acquire intellectual tools, a capacity for intimate peer relationships and socialization. The most life dramatic life transitions is that of childhood to adolescence. **Adolescence** is the period ranging from 12 years to 18 years during which a child takes one an adult like physique and intellect.

In order to achieve a detailed study of the developmental tasks that a child need to master in the years of childhood and adolescence certain issues need to be discussed. In this regard, the aforesaid issues related to development in middle childhood to adolescence, the most significant developmental span, must address the followings :

- a) What are the emerging physical, social and emotional capabilities during middle childhood and later childhood?
- b) What are the physical, social and emotional capabilities emerging during adolescence?
- c) What are the emerging capabilities across domains related to cognition, metacognition, creativity , ethics.
- d) What are the issues related to puberty?
- e) What is the relation between gender and development?
- f) What is the influence of the social, cultural and political environment on the growing child.

The content of this unit shall reflect the issues related to the aforesaid questions.

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## 4.2 Objectives

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After studying this unit, you will be able to :

- Enlist the different emerging capabilities across domains of physical, social and emotional.

- State the emerging capabilities across domains related to cognition and metacognition, creativity, ethics.
- Explain the issues related to puberty
- Describe the relation between gender and development
- Highlight the role of the environment (social, cultural, political) on the growing child.

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### **4.3 Middle childhood to adolescence (from nine years to eighteen years)**

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The middle childhood, especially the years nine to twelve, is regarded as a critical period by both the Educators and Psychologists. Educators call this age **Elementary School Age**, to the psychologist it is the **Gang age** while to many parents it is the Troublesome Age. This period is a period of slow and relatively uniform growth until the changes of puberty begins. **Puberty**, a critical period serves as a bridge between childhood and adolescence. Puberty is a short period that overlaps the end of childhood and the beginning of adolescence and is characterised by rapid growth and change. Adolescence extends from the time the individual becomes sexually mature until eighteen – the age of legal maturity.

#### **4.3.1 Physical, Social, Emotional capabilities–during Middle Childhood to Adolescence :**

The emerging capabilities specific to a particular age is usually referred to as the developmental tasks. There are specific physical, social emotional capabilities emerging in **middle childhood**. These are :

- Due to increase in height and weight accompanied by influences of health, nutrition, immunization and sex. The child moves toward sexual maturity or puberty.
- Middle childhood to adolescence is a period marked by emergence of four types of skills : self help skills, social help skills, school skills and play skills. Children of this age should be able to eat, dress, bathe and groom themselves with almost as much as adults, this is the self help skill. The social help skill enables them to help others be at home, school or among friends. School skills, enable them to develop the skills, needed in writing, drawing, painting, clay modeling, dancing, cooking, crayoning etc. Play

skills such as throwing and catching balls, riding a bicycle, skating, swimming in connection with play teach them to be cooperative. All the above discussed skills help the children to make better adjustments.

- Children belonging to this age group soon discover that expression of emotions, especially of the unpleasant emotions is socially unacceptable to their age-mates. As a result they acquire the capabilities to control the outward expressions of their emotions. In the course of learning to curb the external expressions of emotions, they discover that in doing so, they become nervous, tense and temper outburst at slightest provocation. Often by trial and error or guidance, the older children discover that they can clear their systems of suppressed emotions by play, cry or laugh. Thus they acquire the ability to handle emotions to conform to social expectations called **emotional catharsis**.

- **Social** behaviour in middle childhood is popularly referred to as the “**Gang age**” because they are interested in activities with their peers and often reject parental standards, develop an antagonistic attitude toward members of the opposite sex and become prejudiced against all who are non-gang members.

### **Puberty**

Puberty is caused by hormonal changes characterised by growth spurt, changes in body size changes in body proportions, development of the primary sex characteristics and development of the secondary sex characteristic. It affects physical well being as well as attitudes and behaviours. The two major concerns characteristic of puberty relate to normalcy and sex appropriateness. The psychological hazards of this age are tendency to develop unfavourable self concepts; to become under achievers; unwillingness to accept changed bodies or socially approved sex roles and deviant sexual maturing.

### **Adolescence**

Adolescence is an important period in life span, a transitional period, a time of change, a problem age, a time when individual searches for identity and the threshold of adulthood. It is characterised by :

- The **physical** growth is far from complete when puberty ends, its rate slackens in adolescence and much of the age occurs is internal than external. During the later years of adolescence, when physical growth will be complete, it is characterised by concerns of sexual development.

- Traditionally adolescence is a period of heightened **emotionality**, a time of “storm



and stress” and is characterised by temper outbursts, anger, sulking, refusing to speak or loudly criticising those who angered them. Towards the end of adolescence, they do achieve emotional maturity and learn to use emotional catharsis to release pent-up emotional energy

→ The most important **social** changes in adolescence include increased peer-group influence, more mature patterns of social behavior, new social groupings, and new values in the selection of friends and leaders and in social acceptance.

#### **4.3.2 Emerging capabilities across domains related to cognition, metacognition, creativity, ethics :**

The emerging capabilities across domains related to cognition – metacognition has been well explained by J. Piaget (1970). The years of middle childhood to adolescence encompass two significant stages of cognitive development namely **Concrete operational stage** (7 to 12 years) and **Formal operational stage** (12 years onward). The “way of knowing” or scheme development during this period ushers in the specific cognitive changes which are as follows :

- **Concrete operational stage (7 to 12 years)**

The cognitive development of this stage is characterised by systematic reasoning. logical thinking, concept of conservation of number, space, volume, mass along with reversibility, ability to coordinate part-whole, hierarchical classifications, inventions of alternative strategies but the thinking process is limited to a child’s area of concrete experience.

- **Formal operational stage (12 years onwards)**

The cognitive development during this period that is extending through adolescence is characterised by logic, reasoning from hypothetical propositions, ability of evaluating hypotheses through testing all possible conclusions and emergence of capability of perceiving present reality as well as possibilities and abstract experiences. Adolescents at this stage acquire the capability of abstract thinking and reflective thinking which make the adolescents a powerful experimenter and problem solver.

#### **METACOGNITION**

Metacognition refers to higher order thinking which involves active control over the cognitive processes engaged in learning. It involves activities such as planning,

comprehension, monitoring, evaluation and completion of a task which is problem solving in nature. Metacognition is said to be “cognition about cognition” or “knowing about knowing”. The term was coined by **John Flavell (1979)** an American developmental psychologist, who defined Metacognition as knowledge about cognition and control of cognition.

### **COGNITION – METACOGNITION**

Metacognitive and cognitive strategies may overlap in that the same strategy, such as, questioning could be regarded as either a cognitive or metacognitive strategy depending upon the purpose, self questioning while reading as a means of obtaining knowledge is cognitive while monitoring what you have read is metacognitive the distinction between cognition and metacognition is vain effort, since they operates simultaneously at times.

The period middle childhood, later childhood, puberty and adolescence are the periods of development and consolidation of metacognition

### **CREATIVITY**

The psychologists label later childhood (from puberty) as the creative age, in the sense that it is the time in life span when it will be determined whether children will become conformists or producers of new and original work. While the foundations for original activities is general not well developed before children reach the late childhood year,

Adolescents who have been encouraged to be creative in their play and academic work as children develop a feeling of individuality and identity that has a favorable effect on their self concepts. By contrast, adolescents who have been forced to conform to an approved pattern since earliest childhood lack a feeling of identity and of individuality.

### **ETHICS**

In recent days, there is a growing trend to take into account the ethical aspects of research. It involves considering the rights of the subjects, emphasis being placed on asking their consent to participate in experiments or for the very young, the consent of parents or guardians. Such an attitude made it more difficult to get subjects for scientific research.

#### **4.3.3 Issues related to puberty :**

Puberty is caused by hormonal changes, which, because they are not controllable to date, come at variable times. The average age for girls in thirteen years, and for boys, fourteen the fourteen and a half years. It is a time of rapid growth and change characterised

by changes in body size, changes in body proportions, development of the primary sex characteristics and development of the secondary sex characteristics. These changes are most rapid during the ages between 8.5 and 11.5 years with a peak coming, on the average at 12.5 years for girls while for boys it is between 10.5 and 14.5 years reaching a peak between 14.5 and 15.5 years.

The major areas of concern or the issues related to puberty are :

- Puberty affect physical well being as well as attitudes and behavior since these effects tend to be unfavourable especially during the early part of puberty
- Two major concerns characteristic of puberty relate to normalcy and sex appropriateness.
- There are certain psychological issues related to puberty, the most common being the tendency to develop unfavourable self-concepts; to become underachievers; unwillingness to accept changed bodies or socially approved sex roles and deviant sexual maturing.
- The three A's of happiness – acceptance, affection and achievement are often violated during these years and hence puberty tends to be one of the most unhappy periods of the life span, called 'negative phase' by charlotte Buhler.

#### **4.3.4 Gender and development :**

The gender and development (GAD) perspective emerged in the late 1980's as response to the prevailing Women in Development (WID) approach of the World Bank. It focuses on the different approaches in addressing gender and development issues, socially constructed basis of differences between men and women and emphasizes the need to challenge existing gender roles and relations the major issues related to gender and development highlights upon.

- Sex and gender : How do they differ?
- Gender socialization
- Gender socialization in classroom/learning situation
- Gender fair education.

Sex and gender implies the idea that sex is a biological characteristics, gender is a social characteristics.

Gender socialization is the process by which norms and expectations in relation to gender are learned by women and men.

Gender socialization in classroom (learning situation encompass the use of gender (he/she; his/her) in instructional language, classroom, management and instructional materials like text books etc.

Gender Fair Education implies that boys and girls play, learn and grow together. Teachers play a major role in creating school environments that are free of gender bias.

#### **4.3.5 Influence of Environment (social, cultural, political) on the Growing Child :**

The environment plays a deciding role in the development of a growing child, be it social, cultural, political or so on.

- **Social Environment**

The social environment and its forces help to nurture the development of a growing child. The influence exerted by the social environment is manifested through the social expectations about the stage of development. Every society or social group expects its member to master certain skills and acquire certain approved patterns of growth and behavior at various ages of life span. In the middle childhood, later childhood and adolescence, there are certain developmental tasks which the society expects of them (*Havighurst*). The sociometric status of a growing child, the peer group influence, attitudes of peers, family treatment, interactions with the relatives, members of neighbourhood and community shape the personality of a growing child.

- **Cultural Changes**

The development of a growing child is affected by cultural changes because it is molded to conform to cultural standards and ideals, changes children brought up in western culture differ in developmental aspects (language, personality, attitude, values etc.) than those reared in eastern/oriental culture.

- **Political Environment**

The influence on political environment is pronounced during the adolescence to shape the ideals, moral standards, ethics and political values of them.

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#### **4.4 Let us sum up :**

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Developmental psychology study the changes that occur during all or part of life span in all aspects of human behavior. The age span nine to eighteen years course middle childhood to adolescence. The middle childhood to later childhood is the Gang age marked by strong interest in peers, play and the ability of emotional catharsis. Adolescence is the period of marked physical and psychological changes, the foundation of which are being laid in puberty. The period of puberty extending upto adolescence is characterised by heightened emotionality, social changes, cognition and metacognition along with creative interests. The social, cultural and political environment influence the growing child especially in the manifestation of developmental patterns.

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#### **4.5 “Check your progress” :**

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I.a) The middle childhood is referred to as \_\_\_\_\_ by the psychologists due to intense peer influence.

b) The adolescence is the stage of \_\_\_\_\_ according to Piaget.

c) The term metacognition was coined by \_\_\_\_\_

d) \_\_\_\_\_ is the term used to denote the ability of the teens to handle emotions.

II. Mention two cognitive operations that develop in the concrete operational stage.

III. Enlist two emerging capabilities of adolescence in the domain of emotional development.

IV. State one influence of culture on development.

##### **4.5.1 Unit-End Exercises**

###### **1) Long answer type**

a) Briefly explain the cognitive developments that take place during the concrete operational stage.

b) Adolescence is the age of stress and storm – justify.

c) Explain your own experiences with respect to the emotional catharsis.

## 2) Short answer type

- a) State two influences of social environment on the development of an adolescent.
- b) Mention two characteristics of the formal operational stage

## 3) Objective type

Choose the correct answer :

- a) Puberty is characterised by :
  - (i) Growth spurt (ii) babbling (iii) object permanence
- b) Gender and development was initiated by
  - (i) WHO (ii) UNESCO (III) WORLD BANK

### 4.5.2 Answers to check your progress:

- I. (a) Gang Age, (b) Formal Operations, (c) John Flaxell, (d) Emotional Catharsis.
- II. Two cognitive operations that develop in the concrete operational stage are the concept of conservation and reversibility.
- III. Two emerging capabilities of adolescence in the domain of emotional development are heightened emotionability and temper outbursts.
- IV. A significant influence of culture on development is that the personality pattern of the child is catered to the cultural norms, standards or ideals.

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## **Unit-5 □ Transitions into Adulthood**

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### **Structure**

- 5.1 Introduction :**
- 5.2 Objectives.**
- 5.3 Psychological well-being**
- 5.4 Formation of-Identity and Self-concept**
- 5.5 Emerging Roles and Responsibilities**
- 5.6 Life skills and Independent Living**
- 5.7 Career Choices**
- 5.8 Let Us Sum Up**
- 5.9 “Check Your Progress”**
  - 5.9.1 Answers to “Check Your Progress”**
- 5.10 Unit-End Exercises**
- 5.11 References**

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### **5.1. Introduction :**

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Adulthood is the longest part of the life cycle—the period from about the early twenties to the early sixties. The early years of adulthood is generally referred to as *Youth* which according to Keniston (1970) is a eperiod of ‘studenthood’; it exists only for those who move on to post secondary education before setting into full time work. It is a time for serious experimentation without the need for a long time commitment. The period of Early Adulthood extends from age of eighteen to approximately age forty when physical and psychological changes accompany the beginning of loss of reproductivity. The middle Adulthood, begins at forty and extends to age sixty, when both physical and psychological decline sets in. The late Adulthood or Sencence or old age beigns at sixty and extends to death and is characterised by speedy physical and Psychological decline. But, it should be borne in mind that such subdivisions are not fixed and rigid, instead they indicate only the ages at which average men or woman can be expected to begin to show the changes. the precise

ages at which changes occur and product of an individual's total personality, lifestyle and subculture.

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## **5.2 Objectives.**

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After studying this unit, you will be able :

- Explain Adulthood as a transtion age.
  - State the subdivisions of Adulthood.
  - Explain the concept of Youth.
  - Explain Early, Middle and Late Adulthood in terms of age.
- 

## **5.3 Psychological Well Being :**

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Psychological well being in adulthood is largely determined by the sucess in adjustment and the management of adult roles. During the twenties, young adults are apt to be pessimistic about future and tend to be unhappy and dissatisfied. As they approach thirties they become more optimistic and realistic and hence are more satisfied with the happier life. In this period of adulthood, psychological well being and happiness is at its height.

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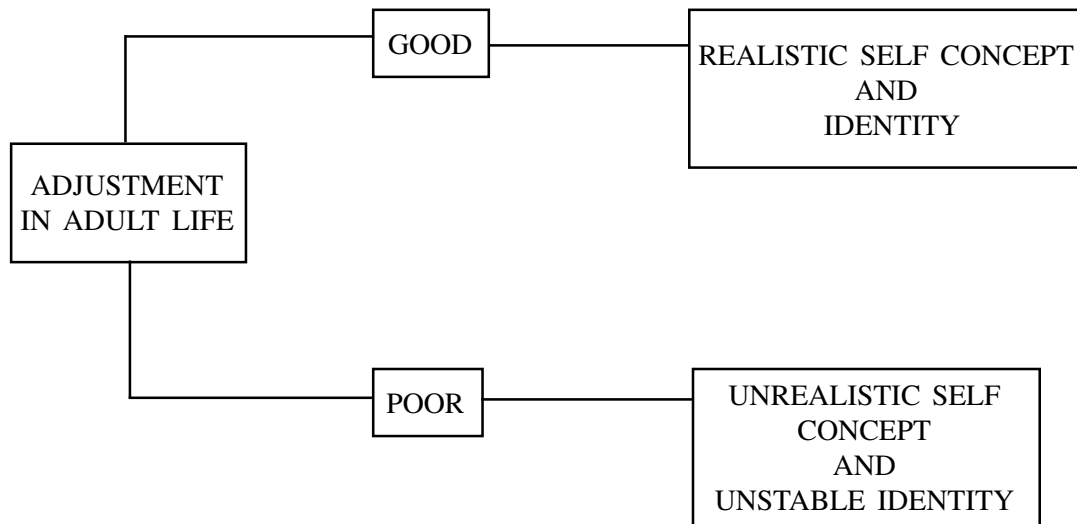
## **5.4 Formation of Identity and self concept :**

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The search for Identity begins in the latter part of childhood and reach a crisis stage in adolescence, referred to as 'Identity Crisis' by Erikson and are maintained as well as sustained during the adultage. Unlike older children and adolescents who want to conform to the appearance, behaviour, and speech of their age-mates for fear of being regarded as "inferior", the majority of young adults pride themselves on being different and try to establish unique self concept. The formation of identity and self concept is determined by the success with which adults adjust to the problems of adult life. The more successfully they adjust, the more favourable their self concepts will be thereby imparting self confidence, assurance and identity. Feelings of in adequacy, negative identity and unrealistic self concepts are developed by the adults



due to failure and problems in adjustment. Under such conditions adults tend to be anxious, dissatisfied and unhappy.



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## 5.5 Emerging Roles and Responsibilities :

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Adulthood is the time that marks the change of roles and responsibilities from that of student and dependent, characteristic of adolescence to that of independent adult. New roles and responsibilities emerge, new commitments are made along with emergence of new patterns of life, responsibilities and tasks, which may change later but form the foundations on which later patterns will be established.

The emerging roles and responsibilities of adulthood (early) centers around social expectations and involves—

- Getting started with a Career
- Selecting appropriate mate
- Adjusting and sharing life space with a marriage partner
- Getting started with family
- Rearing children and discharging roles and responsibilities as parents.
- Managing roles and responsibilities in home.
- Taking on civic responsibilities and roles of a citizen
- Finding a congenial social group.

The success and efficiency with which these roles and responsibilities are mastered in the early years of adulthood influences the success and happiness in the middle ages and extended to old age.

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## **5.6 Life Skills and Independent Living :**

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Adulthood is a period of life span that initiates a state of flux in the life skills especially in the areas of marriage and parenthood along with choosing a vocation or career of the many life skills that young adults need to acquire or make adjustments with, the most common are—

- (1) Life skills pertaining to egalitarian rather than traditional sex roles.
- (2) Life skills required to adjust with new family patterns, including divorce and one-parent families.
- (3) Life skills to adjust with new vocational patterns, especially large and impersonal work units in business and industry.

Trying to learn two or more life skills simultaneously usually results in not learning any one of them well. For example, it is difficult for young adult to deal with life skills of career choice and choice of mate simultaneously just as difficult as it is to adjust to marriage and parenthood life skills simultaneously.

The independent status is granted to the adults with the status of legal adulthood at age eighteen years. Adults are expected to prepare themselves for independent living which expects them to take financial responsibility of parents, of their own selves and of their family along with extended families in the society. Economic independence along with a sense of psychological independence make them expect and demand self-autonomy.

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## **5.7 Career Choices**

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The choice of career or selection of a vocation is the first major developmental task or adjustment that adults need to make. Some adults have made their choice of career years earlier and have been trained for the work the career demands, many young adults, when they leave high school, college or even professional training school are not sure of what they want to do for rest of their lives. Even worse, some adult find what they wanted to do is not available or that they lack the training necessary to carry out the work required by the chosen career.

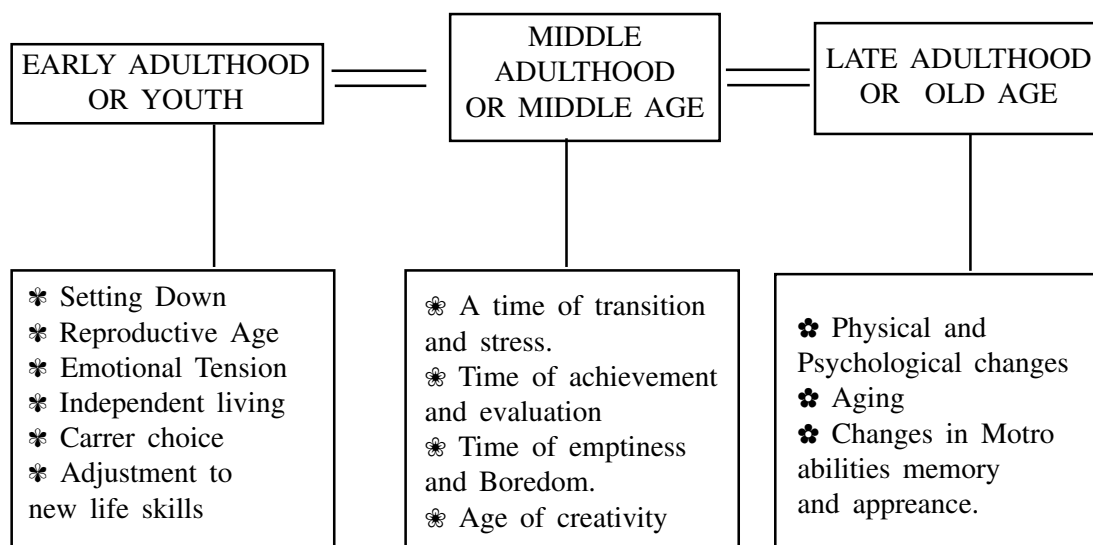
Today, in the modern world, in spite of availability of wide variety of career

options, the selection of a career becomes increasingly difficult for each successive generation of young adults. The factors (common) which make career choice difficult are—

- The ever increasing number of different kinds of career options.
- Rapid changes in needed work skills due to increased technological advances.
- Prolonged and costly training or preparation for career gender.
- Sexual stereotypes (like woman's work/men's work) and unfavourable stereotypes of some occupation.
- Insufficient education, training and ignorance of one's own capacities or lack of job experience.
- Unrealistic values and expectations (job prestige), career aims carried over from adolescence or childhood.
- Lack of security in work.

## 5.8 Let Us Sum Up :

Adulthood, the longest period of life span is subdivided into early adulthood (eighteen to forty years); middle adulthood (forty to sixty years) and late adulthood or old age which extends from sixty years to death. The chief characteristic of these three stages can be represented with the following flow chart :



Adulthood just like other ages of lifespan has its hazards, physical, social, psychological and religious. Adults who make good adjustments have integrated personality patterns in which the core is a stable, realistic self concept whereas those who make poor adjustments have poorly integrated personalities with unstable, unrealistic self-concepts.

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## 5.9 “Check Your Progress” :

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- I. (a) The early Adulthood is referred to as —— which according to Keniston is ——.
- (b) The search for identity referred to as —— by Erikson starts in adolescence but continues upto early adulthood.
- (c) Unfavourable attitudes and expectations called —— are often experienced by young adults in search for career.
- (d) The —— is the years of creativity.
- II. Mention two Emerging roles of the early years of adulthood.
- III. Enlist two life skills that characterise the adulthood.
- IV. Identify two important factors that impose difficulty in career choice making of adults.

### 5.9.1 Answer to Check Your Progress :

- I. (a) Youth, Studenthood.
- (b) Identity Crisis.
- (c) Stereotypes.
- (d) Middle Age
- II. Two emerging roles of early years of adulthood are, getting started with a career and selecting appropriate mate (any other two).
- III. The two life skills characteristic of adulthood are—
  - Life skills pertaining to egalitarian rather than traditional roles.
  - Life skills required to adjust with new family pattern (or any two).

- IV. The two important factors that impose difficulty in career choice making of adults are, the ever increasing number of career and options of flexibility of working hours.

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## 5.10 Unit End Exercises :

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**(1) Long Answer type.**

- (i) Explain the concept of psychological well being in context to early years of adulthood.
- (ii) Briefly explain the formation of self concept in the adults.

**(2) Short Answer type.**

- (i) State two life skill adjustment of the youth.
- (ii) Enlist two important developmental task of the middle age.

**(3) Objective Type.**

State whether the statement are True/False and correct them if False.

- (i) Adulthood is subdivided into four categories namely studenthood, Youth, Middle age and Old age.
- (ii) Middle Age is the age of setting down to career and mate selection.
- (iii) Adulthood is the most creative age.

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## 5.11 References:

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মানুষের জ্ঞান ও ভাবকে বইয়ের মধ্যে সঞ্চিত করিবার যে একটা প্রচুর সুবিধা আছে, সে কথা কেহই অস্বীকার করিতে পারে না। কিন্তু সেই সুবিধার দ্বারা মনের স্বাভাবিক শক্তিকে একেবারে আচ্ছন্ন করিয়া ফেলিলে বুদ্ধিকে বাবু করিয়া তোলা হয়।

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