UNIT III

Childhood

The theme of this unit is 'Childhood'. You may wonder why did the book address the adolescent years first and childhood later. Well, it is because if you as an adolescent understand issues about yourself first, it would be easier to grasp the issues that are concerned with the stage of childhood, and later with adulthood. In this unit you will be studying about children's growth and development, critical concerns about their health and nutrition, education and clothing. As we would like children with disabilities to be an inclusive part of our society, the chapters provide us important information on their needs and ways to meet them.

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11

Survival, Growth and Development

Learning Objectives

After completing this chapter the learner is able to –

- explain the concepts of survival, growth and development.
- analyse the relationship between growth and health.
- discuss the characteristics of different stages of childhood.
- describe developmental milestones.
- examine development in different domains of childhood.

11.1 The Meaning of Survival

The term survival has many meanings. But all of us associate it with "remaining alive" and "maintaining essential life functions" at a basic level. Children remain alive and capable of basic functions when they are provided with care, adequate food and protection from disease-causing organisms. If they suffer from lack of nutrients or develop infections, they need to overcome these "assaults" as they threaten their survival. If the children come from low income families, it is very important to provide them extra food and give adequate nutrients in right amounts and proportions. In addition they need to be immunised against the killer diseases of infancy and childhood such as tuberculosis, whooping cough, diphtheria, polio and tetanus. Diseases such as malaria, pneumonia are also a threat to children's lives.

According to the 2019 UNICEF Key demographic indicators for India have shown 34.3 (per 1,000 live births) under-five mortality rate and total

of 824,448 (Female 399431 and male 425017) under-five deaths in a year. Most of these children die from a disease or a combination of diseases that could be easily prevented or treated – antibiotics for pneumonia, for example, or a simple mix of salts and sugars for diarrhoea. Malnutrition and diarrhoeal diseases also contribute to these deaths, among children under five years of age. The India ranked first among the countries having the highest number of diarrhoea death in 2015 with 117300 deaths of children under five (UNICEF, 2016).

Child mortality is closely linked to poverty. Advances in infant and child survival have occurred more slowly in poor countries and for the poorest people in wealthier countries. Improvements in public health services are the key, including safe water and better sanitation. Education, especially for girls and mothers, will also save children's lives. Raising incomes can help, but little will be achieved unless a greater effort is made to ensure that services reach those who need them most.

A child begins to grow adequately only when enough essential inputs are present in her/his environment. A child who is simply surviving will, of course, not grow optimally. In fact, under such conditions the child may even stop growing completely. This is called growth failure. Let us try to learn more about how children grow.

11.2 Growth and Development

We have been using the words growth and development in the text. Do they mean the same thing or are they different? They have slightly different meanings. **Growth** refers to changes in size or quantity, i.e., physical changes that can be measured. **Development** refers to changes in quality. Increase in weight, height and the size of the internal organs is growth. However, we do not only grow in size of the physical body. If that were so, a newborn would simply be a bigger baby at the age of 20 years! Along with growth in size, there is change in form and complexity of body parts and their functioning. Thus the infant begins to raise her/his head, then roll over on the back, then sit up, then crawl, walk and then run. These changes are qualitative. Within each of these qualitative transformations there is quantitative change. Thus, when the child begins to sit, she/he can sit without falling over, for longer periods of time; when she/he begins to walk, she/he can walk swiftly.

Look at the figure on the next page which indicates the size of the child with reference to age.

It is evident that as a child grows from infancy to the preschool years, there is increase in height and weight. Also, the proportions of various body parts such as the head and chest change. But is that all? No. We all know that along with these physical changes, the body organs are continuously increasing in size and improving in functional capacity. This process does

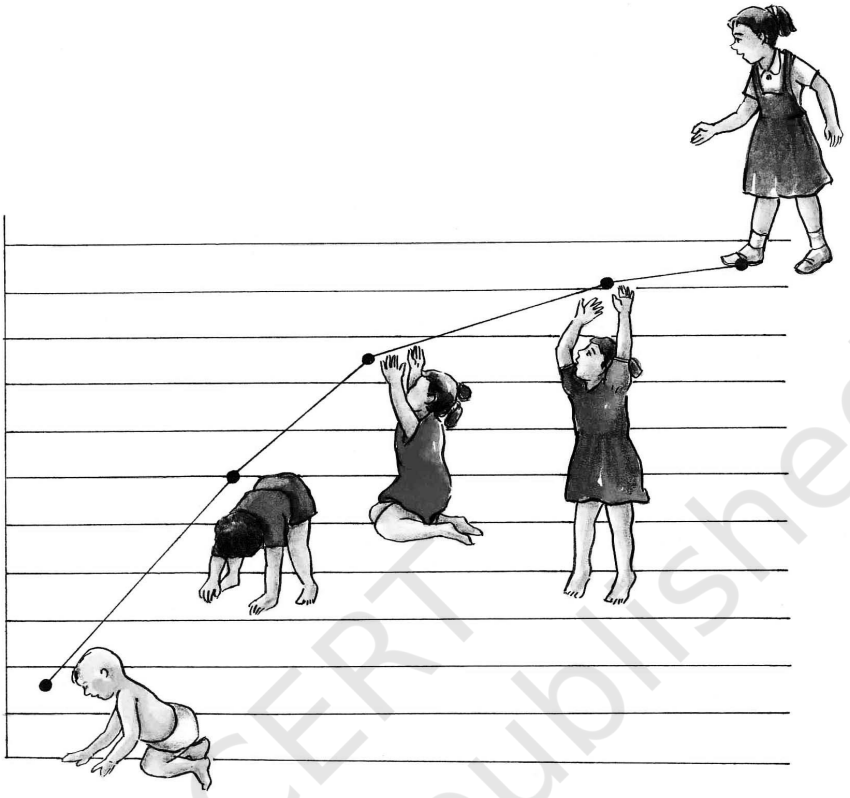


FIGURE 1: SIZE FOR AGE IN CHILDREN

Source: Adapted from WHO

not stop at the preschool years. It continues through the school years and adolescence till the adult body size, composition and functionality are reached.

While growth refers mainly to physical changes, development occurs across many dimensions simultaneously. The infant's thinking capabilities develop; she/he forms relationships with people, learns to understand and manage her/his emotions and speaks increasingly complex sentences. Thus, development is multifaceted. **We can define development as the orderly appearance over time of the physical structures, psychological traits, behaviours, ways of thinking and adapting to the demands of life.** These changes are progressive, orderly and last for a reasonable length of time. By 'progressive' it is meant that these changes result in the child

ACTIVITY 1

Would you term the following changes as development?

- walking to running
- deciding which movie to watch or deciding which career to choose as an adolescent

Give reasons for your answers and discuss with others in the class.

acquiring skills and abilities that are complex, finer and more efficient than the ones that preceded these. By 'orderly' it is meant that there is an order in development. Every development is built on the previous one and cannot occur before it. The changes must last for a reasonable length of time to be called development. When the infant cries with hunger there is a change in behaviour. But as soon as the infant is given food, she/he stops crying. Thus, the crying behaviour lasts for a very short time. Such a short behavioural change is not development.

11.3 Areas of Development

Let us now define areas of development. Although we live as an integrated person, we separate the different dimensions of development for the purpose of scientific study. The various developments that take place in the life of an individual can be classified as – physical development, motor development, sensory development, cognitive development, language development, social, emotional and personal development.

Physical development refers to the physical changes in the size, structure and proportion of the parts of the body that take place since conception.

Motor development refers to control over body movements which result in increasing co-ordination between various parts of the body. Physical growth makes the body grow, whereas, it is motor development which results in smooth, controlled and effective body movements. The control over movements is brought about by control over the movement of the muscles of the body. Motor development is of two types. Gross motor development refers to control over the movements of the large muscles of the body such as muscles of the shoulder, thighs, upper arm, lower arm, abdomen and back. As a result of this control we are able to sit, bend, walk and move our whole arm. Fine motor development refers to the control over the fine muscles of the body such as that of the wrist, fingers or toes. As a result of this control we are able to write, turn the pages of a book, stitch and knit.

Cognitive development refers to emergence of thinking capabilities in the child from the time she/he is born. As one grows from one year to the other there are qualitative differences in the way in which one thinks. These changes in our way of thinking are because of changes in our mental structures and understanding of experiences, and this is referred to as cognitive development. To give just one example, the infant behaves as if the object removed from her/his eyes does not exist any more. It is only in the second half of the second year of life that the infant begins to understand that objects exist even though they are out of sight.

Sensory development refers to the development of the sensory capabilities of vision, hearing, smell, touch and taste. While the infant is

ACTIVITY 2

Which area of development does each of the following changes represent?

- Learning to share
- Learning to count
- Using tenses correctly
- Being able to run
- Growth in height
- Controlling one's anger
- Using the scissors
- Turning towards the direction of sound

born with fairly well developed sensory capabilities, these refine and develop further with age. For example, the newborn can focus her/his eyes on faces and objects best when they are eight inches from the face. Gradually, the child's visual abilities develop to enable her eyes to focus on objects whether they are farther or nearer.

Language development refers to the changes that enable the infant who can only cry at the time of birth to understand the speech of others as well as speak complex sentences.

Social development refers to the development of those abilities that enable an individual to behave in accordance with the expectations of the society, form and sustain relationships with people.

Emotional development refers to the emergence of emotions and learning of the socially acceptable ways of expressing them. Personal development refers to the domain of the self and includes the evolution of one's idea of who he or she is; what personal talents and skills one has and what ambitions for the future one holds.

Although all the above domains are listed separately (personal, cognitive, social, other), in fact these are simply different dimensions of an individual in real situations, and must be understood as such. For instance, a child learning how to ride a cycle (a physical set) also has a corresponding emotional side (maybe fear or excitement) that must be considered while teaching how to ride a cycle.

Good nutrition has an important role in growth and development. As children enter school age, their nutritional needs increase. In fact, there are differences in the nutrient requirements of boys and girls from the age of 10 years.

There are various ways of classifying childhood years into different stages. One such approach is to **classify childhood based on nutrient requirements** as suggested by the Indian Council of Medical Research (ICMR). The stages thus identified would be as follows–

- **Infancy:** Birth–6 months, and 6–12 months
- **Preschool Years:** 1–3 years, and 4–6 years
- **School Years:** 7–9 years, 10–12 years

It is interesting to note that nutrient requirements of boys and girls remain the same till the age of nine years. Once the child completes 10 years, the nutrient needs of girls and boys start to differ.

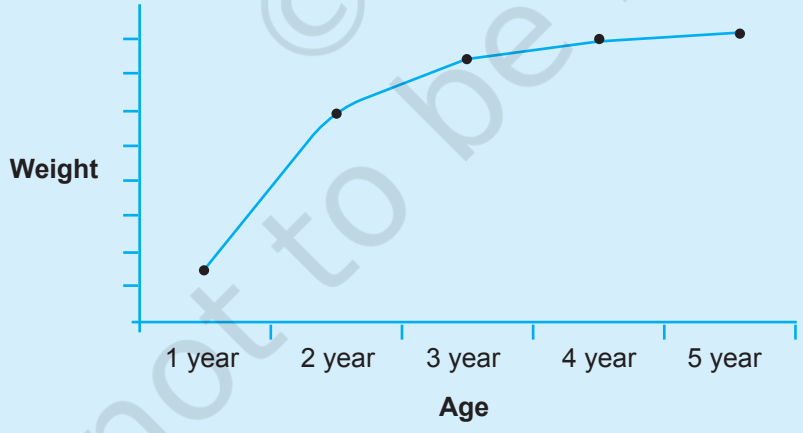
Now, let us try to understand the relationship between **growth** and **health**. We all know that normal growth is a good indicator of health.

But normal growth by itself is not sufficient to predict good health. A range of resources and conditions, such as adequate educational and physical stimulation within the home, are required to ensure that broader developmental milestones are achieved. What do we mean by resources and conditions here? These may include a stimulating environment as we mentioned earlier. These may also include access to adequate breast milk; a safe, hygienic environment; proper health care services; avoidance by the mother of habits such as smoking or drinking. In other words, normal growth is a necessary condition for attaining all the functional capacities associated with health, but growth alone is not adequate to do so.

There is research evidence to show that all children grow very similarly for the first five years of life when their physiological needs are met and their environments support healthy development. Growth falters or slows down because of environmental "assaults" such as the attack by infections and infestations or because of lack of good food in adequate amounts. In India it has been found that children from well-to-do families have growth performance similar to that in children from developed countries, specially when parents have higher levels of education.

Growth charts continue to be widely used across the globe for monitoring the growth of children. There is an upward direction in a normal growth curve. But if something goes wrong, the curve would get disturbed. The

ACTIVITY 3



The figure given above shows you a normal growth curve. Now answer the following questions.

1. A child has a bout of severe diarrhoea. What would happen to the growth curve?
2. A malnourished child is given good food for two months. What will be the change in the growth curve?

curve may become flattened or may even start moving downward. What do the growth curves mean if they show–

- flattening
- an upward direction
- a downward direction

Flattening would depict that the growth has stopped. An upward direction shows that growth is taking place. A downward trend shows a child falling behind the healthy growth pattern. If this child is given extra food and infections are treated, an increasing trend will again be visible. This highlights the catch-up growth.

11.4 STAGES IN DEVELOPMENT

You have read till now one way of classifying the human life span, i.e., on the basis of nutritional requirements. In the field of Child Development the life span is classified into stages on the basis of milestones of development. By this term, we mean specific abilities/tasks or skills that most children achieve within the age range. These tasks are then used to assess whether the child's' development is as per her/his age or not. These are also referred to as norms of development. There are milestones in each area of development and this will become clear to you as you read the chapter further.

Human life span can be divided into five stages: **infancy** (birth-2 years), **early childhood or preschool years** (2–6 years), **middle childhood years** (6–11 years), **adolescence** (11–18 years) and **adulthood** (18 years and above).

Further, in the chapter you will read about how development takes place in different aspects or domains during each of these stages. Physical development and language development are two examples of domains. Before we describe the development in the various domains, let us read briefly about the child in the first month of her/his birth, as this is a very special stage.

Neonate

Neonate is the term used to refer to the newborn baby in the first month of life. We tend to think of newborn babies as helpless. While it is true that they are completely dependent on adults, it is also true that they have many capabilities that help them to adapt to their surroundings and they are more aware than we imagine.

(i) **Reflexes:** Neonates are born with certain reflex actions which help them to survive and adapt in the time it will take them to develop motor capacities. **Reflexes are simple, unlearned responses that are**

elicited by certain type of stimulation. They do not require higher brain functions – they occur without thinking; in other words, they occur automatically. For example, when something touches your eye, you blink automatically to protect the eye – this is the eye blink reflex. The newborn has other reflexes such as the sucking reflex which helps in feeding, elimination reflex which helps in urination and bowel movements.

(ii) **Sensory capabilities:** Vision is the most well developed sense at birth. The neonate can distinguish between light and dark and actively searches for light. She/he can follow a moving object with her eyes, and can focus best when the object/person is about 8 inches from her/his face. The infant is predisposed to focus on the human face.

Newborns respond to sound and are most responsive to human voice than any other sound. They can distinguish between basic tastes – sweet, sour, salt and bitter. They are responsive to touch and can distinguish good and bad smells, responding by turning away their face from the latter. Newborns sleep for about 16–18 hours in a day in phases and when awake and alert, they look around the surroundings and like it when the caregivers interact with them.

Crying is the way the newborn communicates her/his needs. There are different cries that indicate hunger, anger, pain, discomfort and the caregivers are usually able to make out the reason for the infant's cries.

11.5 Development Across Stages

Let us now read how development takes place in the various domains during the first four stages of the human lifespan – infancy, early childhood, middle childhood and adolescence.

Physical and motor development

(i) **Increase in height and weight:** The most dramatic gains in height and weight occur in the prenatal period when a single celled organism grows to a foetus that is 20 inches in length and about 2.5 to 3 kgs in weight. Infancy is the next period of fastest growth. By the time the infant is six months old, she/he has doubled her weight, and by the time she/he is one year old the weight is three times that at birth. Most infants are 8 to 9 kgs by the time they are a year old.

Table 1: Weight for Age		
Age Range	**Girls (kg)**	**Boys (kg)**
0-2 years	3.2 – 11.5	3.3 – 12.2
2-5 years	11.7 – 18.2	12.4 – 18.3
5-6 years	18.3 – 20.2	18.5 – 20.5
6-7 years	20.3 – 22.4	20.7 – 22.9
7.8 years	22.6 – 25.0	23.1 – 25.4
8-9 years	25.3 – 28.2	25.6 – 28.1
9-10 years	28.5 – 31.9	28.3 – 31.2

Now, with the help of your teacher prepare a table up to the age of 19 years.

Table 2: Height for Age		
Age Range	**Girls (cms)**	**Boys (cms)**
2-5 years	85.7 – 109.4	87.1 – 110.0
5-8 years	109.6 – 126.6	110.3 – 127.3
8-11 years	127.0 – 145.0	127.7 – 143.1
11-14 years	145.5 – 159.8	143.6 – 163.2
14-17 years	160.0 – 162.9	163.7 – 175.2
17-19 years	162.9 – 163.2	175.3 – 176.5

Source: Child Growth Reference Standards from birth to 5 years, 2006, and WHO Growth Reference data for 5–19 years, 2007. These standards of height and weight are expected to be achieved under desirable health and nutritional conditions. The children from six countries were assessed to arrive at the above mentioned standards and one of the countries sampled was India.

(ii) **Motor development:** Gross motor development (e.g., use of arms and legs) precedes the development of fine motor skills (e.g., holding a glass in one hand). Let us read the milestones in the development of gross motor skills first. It is important to remember that each milestone is achieved in a certain age range rather than in a specific month. What this means is that there are differences among children in the rate of development so that one cannot specify exactly the month when a particular milestone will be achieved. If a child does not achieve more than one milestone in the expected age range, then it is a cause for concern. Table 3 lists the important motor milestones in the first 10 years of childhood.

Table 3: Motor Development Milestones		
S. No.	**Age**	**Nature of Milestone**
1.	Birth-3 Months	• Lifting and holding the head
2.	Newborn	• Newborns can move their head from side to side slightly
3.	1 month	• They can raise their head
4.	2 months	• They can also lift their chest while lying on stomach (prone position)
5.	3 months	• The infant begins to hold her/his head, and this is a major milestone in development. If the child is unable to do this even by the age of 6 months, it shows that there is delay in development
6.	4 – 6 months	• Can roll over from back to stomach and stomach to back
7.	6 – 8 months	• Sitting with adult support or in a seat with straps • Sitting without support
8.	8 – 9 months	• Crawling; however, some children do not crawl and directly learn to stand after being able to sit • Standing if supported or by holding on to something
9.	10 – 11 months	• Can pull up from sitting position to standing; standing independently briefly
10.	12 – 18 months	• Walking; initially the child's walk is unsteady but gradually it becomes steady. • Running; after the child learns to walk, she/he begins to run, falling down often. As the balance improves, she/he is able to run in a more coordinated manner without falling frequently by the age of 2 years.
11.	18 – 24 months	• Climbing stairs/steps by placing both feet on each step, if hand held by someone
12.	2 years	• Walking backwards, goes down slide, climbs ladder • Jumping from low platform with both feet
13.	3 years	• Can balance on one foot • Can kick large ball • Can throw and catch a ball
14.	3 – 4 years	• Can walk upstairs with alternating feet as adults do, by holding onto something
15.	5 years	• Skipping and pedalling a tricycle
16.	6 years	• Well coordinated hopping, jumping and climbing
17.	7 years	• Balancing and pedalling a bicycle
18.	8 – 10 years	• Has balance, coordination and strength that allows child to participate in various games and gymnastics

Language development

Many species have systems of communication. Can you think of some species where the members communicate with each other and also think of the way in which they do so? The dance of the honey bee communicates to the other bees the approximate direction and distance of food source and the enemy. Birds communicate that they have taken possession of a certain tree or bush by special chirps and shrieks. Then what is special about the human language. Is it too not a method of communication? The entire communication pattern of all species other than humans is inborn – that is, the communication pattern is un-influenced by experience. In contrast, while the human infant is innately endowed and programmed to learn language, the infant's language learning is influenced by the environment and humans can produce an infinite number of original sentences – by 'original' we mean not imitated or inborn but produced by the individual. Humans can also talk about events and objects in another time and place.

ACTIVITY 4

Observe a 2-year-old child with her/his father/mother in your neighbourhood and observe them as they talk with each other. If you can, write down what each one of them says. Focus on what the child said and analyse whether the child was repeating what the adult was saying or was the child thinking on her own and speaking 'original' sentences. If possible observe an even younger child who has just learnt to speak and hear what she/he says. Did the child speak 'original' sentences or did she/he imitate the adult's speech or was it a combination of both?

All children – whatever language they may speak – develop language through similar stages and sequence. The sounds made by the children in the first year of life, before they are able to speak words are called pre-linguistic sounds. These include crying, cooing and babbling. Children acquire the first words around the end of the first year and after that language develops rapidly and by adolescence they have become sophisticated producers of language though vocabulary continues to develop even later throughout life. An important aspect about language is that the child from the first day can understand more than she can speak. Comprehension (receptive language) precedes production (expressive language).

Stages in Development of Language

(i) Crying is the first form of a child's communication. It is innate, or inborn which means that the child does not have to be taught to cry. In the first month of birth, this is the only sound that the infant makes.

An infant's crying produces a physiological response in adults and children which motivates them to run to the baby to try to relieve her/his distress. The child's crying communicates a variety of needs as the child has a different type of a cry for different bodily states – hunger, pain, illness.

By the second month, children begin '*cooing*'. This is also innate, vowel-like sound – like "*oooh*", "*aaaaaah*" – which the infants make when they are contented or feeling pleasure. When the infant coos, the parents respond by talking, smiling or imitating the sound and then wait for the child to coo again. Thus, it appears as though the infant and the parents are 'talking'. Cooing decreases markedly by about 8 months and by 6 months the infant begins to babble.

(ii) Babbling is a consonant-vowel combination like *da*, *ma* or *pa*. The infant repeats this combination, leading to sounds like "*dadada*", "*mamama*". Babbling sounds like human speech. The infant is capable of producing all the sounds contained in all human languages. Thus, the infant can produce sounds used in the German or African languages even though she/he has not heard those sounds. Even a deaf child, who is not able to hear the speech of others, babbles. These two facts bring out that babbling is innate. However, gradually, the sounds that the child does not hear in her environment get dropped. This tells us that the environment plays a tremendous role in language learning.

Around the first birthday, the child says the first word. How do we know that what the child has uttered is a word? We know it is a word because she uses it consistently to refer to the same meaning. First words are brief, consisting of one or two syllables – *papa*, *amma*, tata, bye. By 18 months children begin to produce about two dozen words. But at this time they understand simple commands and many more words. By two years of age the child has about 250 words and after that adds hundreds of words every year. Around the second birthday the child begins to combine words to speak two word 'sentences'. The child's' first words are names of people, animals and things – i.e., nouns, action words (bye bye); and expressive words (no, *namaste*). Sometimes the child uses a word to refer to things and actions for which they do not yet have words.

An interesting feature of the child's one-word or two-word utterances is that these express complete meanings which are found in complete sentences. Thus, when the child sees the mother and says "mamma", depending upon the context, it may mean that "I want to go to mamma" or "My mamma is there" or any other meaning. This simple one or two-word sentences which express entire meanings are called telegraphic speech.

Between 2 to 3 years of age the child acquires grammatical forms and her/his sentence structure expands to include the words that were missing in telegraphic speech – articles, conjunctions and possessives.

By 4 years of age, the child's language is well established – children can engage in lengthy conversations, ask questions and can take turns in talking. By age 6 their vocabulary is about 10,000 words. By age 7 to 9, children understand that words have multiple meanings and enjoy jokes and riddles that are language based.

ACTIVITY 5

Interact with/observe a 2-year-old child. Note down the sentences she/he says. Were they two-word utterances or were they complete sentences? If they were two-word utterances, how did you understand the meaning of what the child said?

Socio-emotional development

(i) **The early relationships and emotions:** You would have noticed that infants and their caregivers are attached with each other. How do these bonds develop? It may seem surprising but the infant from the first day displays behaviours that elicit social and/emotional responses from caregivers. Also, adults show specific behaviours that cause the infant to be attracted towards them. Thus both the caregivers and the children have behaviours that help them interact with each other and develop attachment.

ACTIVITY 6

Can you think what these behaviours may be? Write your responses and compare with our discussion under the heading 'Forming Attachments'.

(a) Forming Attachments:

1. The caregivers provide a lot of physical contact to the infant. We like to pick up babies not only during routing activities but also just for the sheer pleasure of it. Infants have an inborn need of physical contact and when the caregivers pick up the child, they fulfil this need.
2. Adults and older children use a special type of speech when talking to infants. It is called motherese. It has very short sentences, simple words, certain modulations of voice and nonsense sound such as clucking noises. Such speech delights the infant and she/he responds by cooing and babbling.
3. We smile at the infant and seeing us smile, the infant smiles back, coos and babbles.
4. Caregivers like to gaze at the infant which sets up a communication between the caregiver and the infant. This mutual gazing is most important in establishing a link between the two and is one of the first forms of socio-emotional interactions.

5. Caregivers exaggerate their facial expressions when talking to the infant, and this helps the baby to learn to discriminate various emotional expressions.
6. Caregivers also make a lot of rhythmic movements when interacting with the infant. We nod and shake our head from side to side and bring it forward. Some of the movements and sounds we make, such as rocking and swaying, are soothing to babies.
7. Caregivers also play simple games with the infant when she/he is a little older, e.g., peek-a-boo is common in all cultures.
8. Just as caregivers communicate with infants, infants also initiate behaviours to make social contact. When infants cry in discomfort, the mother comes running. When they coo, babble, smile and gaze on their own initiative and these behaviours increate the caregivers, protective.

The above mentioned behaviours take place many times during the day as the caregivers repeatedly feed, bathe and change the infant's clothes, or soothe her/him when she/he is distressed. This leads to the development of the bond of attachment between them. **Since in most cases, it is the mother who primarily looks after the child, the infant usually first becomes attached to her.** This relationship with the mother is the first social relationship.

If the interaction with the mother is not warm and pleasant, the infant is likely to become irritable and anxious. In such a case, while the physical needs of the infant are fulfilled, the emotional interaction with the adult is inadequate – the infant is not able to form appropriate attachment. However, human beings are resilient and can recover from early experiences of social deprivation if their environment improves later for the better and they find loving and nurturing caregivers.

Forming a secure attachment is a very important developmental task in the first year of life. Developing a secure relationship with an adult is important for the child to develop a feeling of trust in people. A secure infant cries less, cooperates more with caregivers, does not cling to the caregiver fearfully all the time and is ready to explore the surroundings. During the pre-school years, such a secure child is emotionally warm, socially mature, popular among peers, curious and self-reliant.

We have spoken only about the infant forming the attachment bond with the mother. **What about bonding with the father?** Because of traditional division of labour in our society, it usually happens that the father is the bread-winner and remains out of the home for a large part of the day, while the mother spends more time with children. Does this mean that infants will not become attached

to the father? And what about the families where the mother is working and is out of the home for long hours? Research has shown that it is not the amount of time spent with the child that helps in the formation of the bond but what the adults do with the child in the time they spend together.

You would have seen that even though fathers and employed mothers spend comparatively less time with their children, the children seek the father's/mother's attention when they are present. Hence, it is the quality of time spent by caregivers with children that largely determines caregiver-child attachment.

After the first strong bond with one or two persons, children form more relationships with other people in the family, especially with those who interact with them. If the child goes to a day care centre where she/he receives quality care, include social interaction, play and rest she/he would form positive relationship with the caregivers there.

(b) Children's emotions: There is one debate among researchers regarding the emotions young children show because one cannot know the exact linkage between the child's facial expression and inner feelings. Nonetheless, infants experience what we call joy, distress, anger and even rage. Gradually, emotions get differentiated into happiness, interest, excitement, sadness, dejection and fear. Around six months of age, the child shows fear of strangers and may get upset and begin to cry when they approach her/him. This is because the child gains the ability to recognise people once she/he becomes fearful of unfamiliar faces. This is called 'stranger anxiety'. It reaches its peak around 8 to 12 months of age and disappears between 15–18 months of age. A little after stranger anxiety appears, the infant develops 'separation anxiety' – the fear of being separated from caregivers they are attached with. They are distressed when the mother is out of sight. This fear is at its peak around 12 to 18 months of age and disappears around 20–24 months of age. It is important to note that all children are not equally wary in all situations. It varies with their prior experience, temperament and the nature of other people around them.

(ii) **Parents' child rearing practices:** When parents bring up their children, the process is called child rearing. How parents rear their children has a marked effect on children's personality. We all learn to behave in ways that are seen as appropriate in our community and society. We learn this as a result of direct instruction by parents and others around us, and indirectly as we observe others behaving in particular ways. This process by which children acquire behaviours, skills, values, belief, and standards that are characteristic, appropriate and desirable in

their culture is referred to as socialisation. The goals of socialisation – that is, what one would want the child to learn and acquire – varies from one culture to another, and even from one family to another.

Parents differ with respect to the amount of warmth, love and affection they show towards their children. Thus, we can think of 'warmth' and 'coldness' as two ends of a continuum, and most parents would be at different points on it. Parents also vary in terms of how restrictive or permissive they are towards many of their child's behaviour patterns. Those who are restrictive tend to impose many rules and watch their children closely. Permissive parents impose few rules and frequently allow their children to decide for themselves. Thus, 'restrictive–permissive' is another aspect of the parent's child rearing practices.

Child rearing practices can also be classified on the basis of the type of disciplinary techniques used by the parents. In order to discipline their children, some parents explain to them the consequence of their actions and reason with them and in order to prevent them from doing unsuitable actions. They are firm in their discipline but are affectionate and gentle with the child. This is called the **affection-oriented disciplining approach.** On the other hand, some parents use commands to stop their children from behaving in a particular way, without giving them the reason. They may also threaten the child and use physical punishment. This is a **power-oriented approach of disciplining.**

In general, we can say that when parents and caregivers themselves model (show) the qualities they wish the children to have, when they do not use punishment to discipline the child, especially physical punishment, and instead use explanation to point out desirable

ACTIVITY 7

You must have had the opportunity to observe some parents in your extended family and the way they interact with their children. Can you see the relationship between what you have read in the chapter and what you find those parents doing? Give your comments. Form groups of 4-5 in your class and discuss your observations with each other.

behaviour, these child rearing practices contribute to the shaping of an all rounded personality in children.

(iii) **Relationship with siblings and peers:** Most families in our country have more than one child, and in many cases the older child is required to look after the younger one. Siblings influence each other's development to a great extent. Can you say how the child's relationship with siblings would be different from her/his relationship with parents? Siblings are near in age to each other and so the relationship between them is more

equal, friendly and democratic as compared with parents. A positive relationship between the siblings can provide emotional support and nurturance, as they play, confide and share with each other. An older sibling can set standards of behaviour which the younger one tries to follow. However, in sibling relationships there is also conflict, domination, competition, rivalry and jealousy, and parents can play an important role in creating a bond between them.

Peers (similar age children) become increasingly important in the child's life as she/he grows. A detailed discussion about relationship and interactions with peers was undertaken in the chapter on 'School-peers and educators' in Unit II B of Part I. Among peers are close friends and not-so-close friends. Friendships with children similar in age with whom the child plays, fights and shares secrets contribute to her/his social and emotional development.

ACTIVITY 8

If you have a sister/brother, write down two qualities you like in her/him.

1. _____

2. _____

What does she/he like in you? Write two things.

1. _____

2. _____

Cognitive development

Cognitive development refers to the development of thought processes in children. 'Cognition', or thinking, is concerned with how we come to know the world around us, how we receive and interpret information and how we mentally represent the world around us. Let us first reflect a little on what are the various mental processes involved in thinking.

1. We **discriminate** between tastes, colours, shapes, living and non-living things, edible and non-edible things and one can keep adding to this list.
2. We **associate** certain emotions with certain experiences, certain people with a certain type of behaviour, certain weather with a particular month and certain belongings with certain persons.
3. Most of our actions are performed with an intention, with a purpose – we know that our actions will have an effect; in other words we understand **cause-effect relationships.**
4. When you change your route to reach your school because there is some obstruction in the route you normally take, or when we think of

an alternate way of handling a situation because the usual way is not successful anymore, we are showing the ability to **solve problems.**

We also **remember, imitate, reason** about the cause of things, **understand relationships** between objects, experiences and feelings, think and reason about hypothetical situations, and think in abstract terms (that is think about ideas and concepts that do not exist physically like ideas or emotions).

All these above-mentioned mental processes are a part of our thinking and the study of cognitive development is the study of the development of these and other mental processes from the time the child is born.

The stages in the development of cognition from the time the child is born till maturity have been studied and described in detail by Jean Piaget. According to him, children's cognitive processes develop in an orderly sequence or a series of stages. Some children may be more advanced than others at particular ages, but the developmental sequence does not normally vary. According to Piaget, cognitive development proceeds through four stages – sensori-motor, pre-operational, concrete operational and formal operational. We shall in this section, study some significant aspects of and changes in the child's thinking that take place from one stage to the next.

(a) The Sensori-motor stage: This stage of development lasts from **birth till two years of age.** During this period infants try to understand the world through their senses and through their motor capacities (i.e., actions) – therefore, the name sensori-motor period of development. Thus, infants understand the world on the basis of their actions on objects and people and how they appear to them. An infant girl knows a toy in terms of how it appears to her eyes and feels to her touch (sensory information) and that she can throw it, kick it, push it and bang it (motor actions). She does not yet understand the toy in terms of its properties as hard or soft, made of wood or metal, big or small, light or heavy – these are concepts and the infant does not yet have.

The child has many reflexes, including the **sucking reflex.** By **2 months** of age infants begin to show interest in things around them. By three months they begin to understand what the actions of others indicate – for example, a child understands that the mother will feed her/him by the specific gestures and actions the mother makes at the time of feeding. This also shows that the infant remembers. Between 4-8 months of age, the infant begins to understand that her/his actions can have an impact – for example, when she/he kicks her/his legs in the air, the ball moves, when she/he drops an object it makes a noise. This is the beginning of understanding cause-effect relationships. Between **8-12 months** of age, the infant begins to **intentionally carry out actions.** This means that she/he understands which action will have what effect and will be appropriate in a given situation.

Between **12-18 months of age,** the infant tries out different ways of doing things; she changes her actions to produce different results. A common example is that of an infant repeatedly throwing her toy to see how far it goes or to see the difference in noise when she throws it from different heights. Between **18 -24 months** of age an important development takes place – the infant begins to represent events, objects and people mentally – this means she is able to form an idea in her mind, a picture. This is called **mental representation.**

ACTIVITY 9

Can you think what these behaviours may be? Write your responses and compare with our discussion which follows.

On the basis of the above description would you not say that the infant is an intelligent thinking being?

(b) The Pre-operational period – 2-7 years: The significant difference between this stage and the earlier one is that during this period, the child begins to develop concepts. She/he develops **preliminary concepts** of shape, space, size, time distance, speed, number, colours, area, volume, weight, of living, non-living, length, temperature – in fact, of everything that she/he sees in her environment. A three-year old child begins by first forming **an idea of long and short** in relation to two objects. Around **4 years of age,** she is able to understand longest, shortest when given three objects. However, even a 6-year-old is likely to get confused when you give her/him five sticks and ask her/him to arrange them in increasing order of height. This is because she/he cannot consider many objects simultaneously and think of relative size. This ability will develop in middle childhood years.

Similarly, with respect to the **concept of number,** the child does not at once develop a concept of one, two, three …. and so on. A 3-year-old child may be able to recite number names till 10 but ask her/him to pick up six stones from a pile and there are likely to be mistakes. The child in developing a concept of number first develops a concept of more and less, one and many, none and many/one, more than, less than, equal to and then gradually learns to count three, four, five objects and so on.

The characteristics of the preschoolers' thinking is best understood when we understand what is meant by the term 'pre-operational'. The word **'operation'** has a specific meaning in cognitive development. The term refers to **mental acts in which objects are changed or transformed and can then be returned to their original states.** This means that an action is reversible. For example, when you flatten a piece of clay, you can mentally turn it back into a ball of clay and, therefore,

you know that the amount of clay in the ball form and the flat form is the same. Obviously – you would say. But this would not have been so obvious to you when you were a 5-year-old! A preschooler's thinking is termed pre-operational because she/he cannot yet mentally reverse an action and so is dominated by what she/he sees rather than by the logic in the situation. Let us understand these characteristics of the preschooler-age child's thinking.

(i) **Conservation:** This term means being able to understand that the amount of a certain substance remains the same even if its shape is changed or if it is transferred from one container to another. As an example, take two glasses of equal diameter and height and pour water in them to the same level. Then in front of the child pour water from one of these glasses into a third narrow glass; naturally the level of the water will rise higher in the narrow glass. A preschool child is likely to say that the water in the narrow glass is more because of the higher water level. This means that the child cannot yet **conserve.** However, it also true that the child conserves in situations which are familiar to her/him but does not conserve in unfamiliar situations. For example, a 4-year-old child who helps her/his father in the daily business of making lemon soda to earn a living, is not likely to get confused that the amount of soda increases when it is poured from the bottle into the glass because this is her/his repeated experience. As the child approaches 6-7 years of age, she/he is able to conserve. We shall see that in the next stage.

(ii) **Seriation:** This term means performing the task of placing things in a serial order. A common example would be arranging five pencils of different sizes in the order of longest to shortest or vice-versa. The preschool age child may place up to three pencils in the correct order (i.e., seriate them), be doubtful with the fourth one, and fail with the fifth pencil.

(iii) **Taking another person's perspective:** At this stage the child centers on one aspect of the situation and cannot understand or visualise things from another person's perspective. If you hide a ball at a place where it is not visible to the child, but it is visible to another person standing at a different location in the room, the child is not able to make out that the other person is able to see the ball. The preschooler assumes that others see a situation as she/he does, and this quality of the child's thought has been called **egocentrism.** Once again, this is a general response – towards the end of preschool age the child may be able to see the situation from another person's perspective.

(iv) **Animism:** Another interesting quality of thinking at this stage is that the children believe everything has life in it – this is referred

to as animism. Hence, when we tell them stories about trees and clouds that talk, they believe it to be true. Using these illustrations, it becomes evident that children do not 'suddenly' start thinking; thought is a process of gradual emergence of mental capabilities through the increasing coordination between the senses and the mind.

(c) The Concrete Operational stage – 7-11 years: This stage corresponds to the stage of middle childhood. The child can now mentally **reverse performed actions.** Also, unlike the pre-operational child who can focus on only one dimension of a problem at a time, the concrete operational child can focus on multiple dimensions or aspects of a problem at the same time. Thus, the child will conserve or seriate under any situation or with any material. In the earlier example of pouring water into another glass, she/he can reason that when the water is poured from the wide glass to the narrow glass, the amount of water does not change because nothing was added.

The children at this stage are **less egocentric.** They see that different people can see the same event in different ways because of different situations and different sets of values. This understanding helps in the development of emotions in general, especially emotions of sympathy and empathy.

During this period the child develops a **stable number concept** – she/he understands how much quantity a particular number signifies and does not make errors in counting. She/he can understand that a particular object can belong to a number of different categories, depending on the criteria for developing categories. Thus, fruits can be classified as those with seeds and those without seeds; the same set of fruits can also be classified as fruits that grow in winter and those that grow in summer; and also on the basis of their taste. Thus,

ACTIVITY 10

On the basis of what you have read, talk to two children, one in the pre-operational stage and another in the concrete operational stage. Try out one conservation and one seriation experiment with them. Write the conclusion.

the same fruit would belong to different sets with each criterion of classification. The understanding of such classification abilities leads to the development of logic in adulthood.

(d) The stage of Formal Operations – 11-18 years: The child enters this stage by 11-12 years of age – in fact she/he is no longer a child at this stage but an adolescent. All of you are in this important stage of formal operations.

The chief characteristic of this stage is that the adolescents' thinking is not tied to concrete events, objects and situations. They can think in terms of ideas – in other words, in abstract **terms.** The child had acquired reversibility of thinking in the earlier stage – now the adolescent can apply this ability to ideas too and think of multiple possibilities, which allows her/him to follow an argument from its inception to conclusion and back again. The adolescent discovers the world of the hypothetical – that which is not, but may be, and engage with the question "what would happen if....?" Because of this quality of the thought – of **hypothetical thinking** — adolescents are able to engage in elaborate fantasies, including ideas of changing the world. Their thinking is idealistic and utopian — they think of **idealistic** characteristics for themselves and others. They dream about changing the world for the better and become restless with the 'slow' pace they believe the older are moving with.

The adolescent's thinking becomes more **logical**, their reasoning becomes more **systematic** and they become more effective in **solving problems.** Instead of relying on trial and error learning they think of possible courses of action. This type of thinking has been called **hypothetico-deductive reasoning.**

Adolescents become more capable of examining their own thoughts and think about thinking – this is called **meta-thinking.** Thus, some typical thoughts are "why do I think the way I do?" "Today I want to reflect on my yesterday's thoughts". Another feature of adolescent thought is that the young people create an **imaginary audience** and a **personal fable** about themselves. You will surely identify with these feelings. By imaginary audience, it is meant that adolescents believe that others are always looking at them, and believe that they are observing each and every action of theirs. This leads the adolescent to be very concerned about her/his physical appearance. The belief in personal fable implies that the adolescent believes what (pain/emotion) she/he experiences, no one else does, because she/he is different from all others, is unique.

At this point recall the discussion on the development of self that you read about in Unit I of Part I. Can you see how description of adolescent thinking abilities is reflected in the adolescents' formation of the sense of self and identity? The identity crisis that the adolescent goes through is the consequence of her/his thinking abilities in the period of formal operations.

This chapter acquainted you with the growth and development features of children during childhood, and the note of good nutrition in their growth. In the chapter that follows there will be a detailed discussion on how children's health and well-being can be maintained by following appropriate nutritional guidelines.

Key terms with meaning

Development: Sequential and orderly changes in various domains from the time the child is born. These changes, which are both qualitative and quantitative, lead to increased complexity in functioning.
Attachment: The bond of affection and love that develops in the first year of life between the infant and the adult who primarily looks after her. This adult, in most cases, is the mother.
Bonding: Development of the bond of attachment between the child and the adult
Child rearing practices: The ways and methods parents use to bring up their children and teach desirable and appropriate values and behaviours.
Permissive parents: When parents impose very few rules on children and leave the children to take their decisions themselves.
Restrictive parenting: When parents impose many rules, are very strict and give only a little freedom to children to make their own choices.
Egocentrism: The assumption that everyone perceives a situation as one sees it or that everyone thinks in the same way as one does.
Abstract thinking: The ability to think of situations or objects even when they are not happening at that time or are not present before one eyes.
Meta thinking: Self reflection of one's thinking process; examining why one thinks the way one does; thinking about the process of thinking

Review Questions

1. Differentiate between growth and development. Giving examples, define the various areas of development.
2. What conditions and resources are required to promote the healthy growth of the child from the time she is born till she completes adolescence?
3. Would you say that the neonate is helpless? Give reasons in support of your answer.
4. Describe the sequence of motor development from birth till 10 years of age.
5. Explain how infants form attachment with the caregivers in the first year of life.
6. Differentiate between the power-oriented and affection-oriented approach to disciplining. In your opinion which is a better approach and why?
   Or
   Describe the child rearing practices that will contribute to shaping an all round personality in children.
7. Describe the major characteristics of each of the following stages of cognitive development.
   - Sensori-motor stage
   - Pre-operational stage
   - Concrete operational stage
   - Formal operations stage

Practical 12

Survival, Growth and Development

Theme: Visit to a programme or institution for children to observe its activities
Tasks: 1. Visit to an institution or programme for children (Government/NGO)
2. Observation of activities of the institution or programme
3. Writing a report based on your observations

Purpose of the practical: Across the country, there are many organisations run by government and non-governmental organisations, that carry out various activities for children in their community. The services they provide range from health, education, nutrition, recreation and leisure activities. Each organisation has specific objectives. The organisation identifies the services to be provided and the age group of the children to whom they will provide these services on the basis of their objectives. Through this practical you will become familiar with the working of one such organisation in your community.

Conduct of practical

1. Make groups of 10 students each and identify a programme being run for children or an organisation working for children in your community with the help of your teacher. The teacher will also help you to seek permission to visit the organisation for one or two days so that you can find out about the activities of the organisation or the programme. You may need to carry a letter from your school so that the organisation permits you to observe their activities. (It is also possible that the entire class visits a programme/institution together if it is a large programme/institution).
2. Try to get some information about the activities of the organisation/programme before you visit the institution. This will give you some idea about what to observe when you visit and the type of questions you can ask the workers in the organisation to know about its activities.
3. Carry a note pad with you so that you can record briefly what you will observe during your visit.
4. During your visit you have to collect information regarding
   - Name of programme/organisation; NGO/government
   - Objectives/goals of the organisation/programme
   - Age group of children covered by the institution/programme
   - Activities of the organisation/programme
   - Workers/functionaries at the organisation and their roles
   - Source of funds for the organisation

   This information may be collected by asking (interviewing) the workers at the institution or from a brochure or write-up available at the organisation.

When collecting information about the activities of the organisation, you should actually observe some activities as they are being carried out at the organisation/programme. For example, if the organisation provides early childhood education services, spend an hour observing how the preschool teacher/ *anganwadi* worker is carrying out activities with children. Or if the health check-ups are being carried out, sit in that area and observe how this activity is done. Remember not to interfere in the activities that are being carried out at the organisation/programme.

5. Write a report of your visit in about four pages providing information under the various aspects we have stated in point no. 4. The last part of your report should be titled 'Conclusion' where you briefly state your opinion about the organisation/programme and its activities.

Additional Activity

Survival, Growth and Development

Read the following extract carefully and discuss the issues raised in a group of 2-3, then, answer the questions which follow.

The **Human Development Index (HDI)** is an index which combines:

- life expectancy,
- literacy,
- educational attainment, and
- GNI per capita.

Human development is a concept that, according to the United Nations Development Program (UNDP), refers to the process of widening the options of persons, giving them greater opportunities for education, health care, income, employment, etc. The basic use of HDI is to rank countries by level of 'human development' which usually also implies to determine whether a country is a developed, developing, or underdeveloped country.

As UNDP states: Human Development is a development paradigm that is about much more than the rise or fall of national incomes. It is about creating an environment in which people can develop their full potential and lead productive, creative lives in accord with their needs and interests. People are the real wealth of nations. Development is thus about expanding the choices people have to lead lives that they value. And it is thus about much more than economic growth, which is only a means — if a very important one — of enlarging people's choices.

Fundamental to enlarging these choices is building human capabilities — the range of things that people can do or be in life. The most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community. Without these, many choices are simply not available, and many opportunities in life remain inaccessible.

Now let us try to understand the meaning of the following important terms as used in the context of the human development index.

Life expectancy is the average number of years of life expected at birth. The traditional definition of **literacy** was considered to be the ability to read and write, or the ability to use language to read, write, listen, and speak. In modern contexts, the word refers to reading and writing at a level adequate for communication, or at a level that lets one understand and communicate ideas in a literate society, so as to take part in that society.

Educational attainment is a term commonly used by statisticans to refer to the highest degree of education an individual has completed. In the context of calculating HDI, the two parameters which have been used for measuring in educational attainment are the expected years of schooling and mean years of schooling.

The **gross national income (GNI)** is one of the measures of national income and output for a given country's economy. GNI is defined as the aggregate income of an economy generated by its production and the income it receives from overseas with respect to the given midyear population of the country.

The term **developed country,** or **advanced country,** is used to categorise countries with developed economies in which the tertiary and quaternary sectors of industry dominate. Countries not fitting this definition may be referred to as developing countries. The **tertiary sector of economy** (also known as the **service sector** or the **service industry**) is one of the three economic sectors, the others being the secondary sector (approximately manufacturing) and the primary sector (extraction such as mining, agriculture and fishing). Sometimes an additional sector, the "quaternary sector", is defined for the sharing of information (which normally belongs to the tertiary sector).

This level of economic development usually translates into a high income per capita and a high Human Development Index (HDI). Countries with high gross national income (GNI) per capita often fit the above description of a developed economy. However, anomalies exist when determining "developed" status by the factor GNI per capita alone.

Developing countries are in general countries which have not achieved a significant degree of industrialisation relative to their populations, and which have, in most cases a medium to low standard of living. There is a strong correlation between low income and high population growth.

The HDI provides a composite measure of three dimensions of human development: living a long and healthy life (measured by life expectancy), being educated (measured by expected years of schooling and mean years of schooling) and having a decent standard of living (measured by purchasing power parity, PPP, income). The index is not in any sense a comprehensive measure of human development. It does not, for example, include important indicators such as gender or income inequality and more difficult to measure indicators like respect for human rights and political freedoms. What it does provide is a broadened prism for viewing human progress and the complex relationship between income and well-being.

The table below shows the HDI value for India along with other countries according to the Human Development Report, UNDP 2020.

Table 1: India's Human Development Index (HDI) Value 2019

Rank	Country	Human Development Index (HDI) Value	Life expectancy at birth (years) SDG3	Expected years of schooling (years) SDG 4.3	Mean years of schooling (years) SDG 4.6	Gross National Income (GNI) per capita (PPP$) SDG 8.5
1	Norway	0.957	82.4	18.1	12.9	66,494
2	Ireland	0.955	82.3	18.7	12.7	68,371
2	Switzerland	0.955	83.8	16.3	13.4	69,394
131	**India**	**0.645**	**69.7**	**12.2**	**6.5**	**6681**
133	Bangladesh	0.632	72.6	11.6	6.2	4976
154	Pakistan	0.557	67.3	8.3	5.2	5005
189	Niger	0.394	62.4	6.5	2.1	1201

Source: http://hdr.undp.org/

Now, answer the following questions–

1. How would you describe the concept of 'human development'?
2. How would you define a developing country? How does India qualify to be a developing country?
3. Compare India's rank with that of other countries mentioned in Table 1 on each of the measures used to calculate HDI.
4. Compare India's rankings on each of the indices/measures mentioned in Table 1. Which is the measure on which India has the lowest ranking? Which is the measure on which India has the highest ranking?