Developmental psychology

Prepared

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DEVELOPMENTAL PSYCHOLOGY

Introduction:

This field examines change across a broad range of topics including: motor skills, cognitive development, moral understanding, language acquisition, social change, personality, emotional development, self-concept and identity formation.

Studying psychological development is a rather recent phenomenon, and the bulk of this work has been carried out since the beginning of the twentieth century. Before this period there was some recognition of the importance of the early years.

The study of human development from conception to adulthood (from Womb to Tomb) is the concern of developmental psychology.

Developmental psychology *Definition* is the scientific study of how and why human beings change over the course of their life. Originally concerned with infants and children, the field has expanded to include adolescence, adult development, aging, and the entire lifespan.

Why Study Developmental Psychology?

1- Raising Children

The Knowledge of child development can help parents and teachers meet the challenges of rearing and educating children – For example, researchers have identified effective approaches that parents and other caregivers can successfully use in helping children manage anger and other negative emotions.

2- Choosing Social Policies

The Knowledge of child development permits informed decisions about social-policy questions that affect children – For example, psychological research on children's responses to leading interview questions can help courts obtain more accurate testimonies from preschool children.

3- Understanding Human Nature

The Child development research provides important insights into some of the most intriguing questions regarding human nature (such as the existence of innate concepts and the relationship between early and later experiences)

Recent investigations of development among children adopted from inadequate orphanages in Romania supports the principle that the timing of experiences often influences their effects.

Developmental Processes

(1) Growth

Growth refers to quantitative changes in an organism. This usually involves permanent increase in size and structure of organisms. These quantitative changes are both physical and mental. These include physical changes in height, weight, internal organs and mental changes in memory, reasoning, perception and creative imagination.

All these changes make the child to be physically grown and mentally responsive.

(2) Development

Development can be described as a complex process of integrating many structures and functions in an organism. As a result of the integration, changes are dependent upon what

preceded them and they in turn affect what comes after.

The qualitative changes that come upon an organism are as a result of the accumulation of experiences. The experiences derive from hereditary and environmental influences. Thus individuals reflect on their experiences and become more refined and matured in dealing with new situations.

GENERAL PRINCIPLES OF DEVELOPMENT

Every species follows a pattern of development peculiar to that species.

Genetic study of children over a period of time has shown that development follows a fixed pattern and the pattern is influenced by experience. Every child has a particularity pattern of growth.

The identified principles that are true to human development are referred to as the " general principles of development" :

1. Cephalocaudal Growth Patterns

According to this principle, development spread over the body from head to foot. This means that improvement in structures and functions come first in the head area, then in the trunk and leg region. The organs in the area of

the head develop first and mature first before the organs in other areas. The head develops and achieves its final forms before the trunk and the legs. The child is first able to see, hear sound and jingles before using his hands and legs in a meaningful way.

2. Proximodistal Growth Pattern

This principle holds that development proceeds from the central axis of the body towards the extremities. In the Fetus, the head and the trunk are well developed before the rudimentary limb buds appear. The arm buds gradually appear and develop into the hands and lastly fingers before his hands and fingers respectively and can use the latter as a unit before he/she can control the movements of his/her fingers. Structure therefore precedes function.

3. The Principle of Differentiation

Development proceeds from simple to complex, from homogenous to heterogeneous and from general to specific (from general and diffuse responses to more differentiated and specific ones).

In any postnatal life, the infant can move its whole body but incapable of specific responses. The baby can wave his arms, in general movement before he/she is capable of any specific reaching. In speech, the baby learns the general words before specific words e.g. He/she calls every man "Daddy". In writing the child learns to hold a big object before a pencil. He/she learns to make a circle before triangle.

4. The Principle of Asynchronous Growth

This means that the different parts of the body have their own period of rapid and slow growth, and that each reaches its own mature size at its own time. Growth in all parts of the body is however continuous and concurrent e.g. a child's brain does not stop growing while his/her muscles are growing (Growth is continuous though there is asynchronies).

Asynchronous growth is particularly obvious when different parts of the body are compared e.g. the muscles, bones, lungs and the genitals increase approximately 20 times during the growth years, while the eyes and the brain which are relatively more developed at birth increase much less. The eye balls complete their growth during the first 5 years and the brain also completes its growth during the first 10 years but

the heart and some other internal organs requires more than 20 years to complete their growth.

Organs-systems and function do not proceed at the same rate throughout development. Though growth and development usually proceed in an orderly sequence, the rate of growth often differs from one organ and system to the other and from one period to another. During childhood, the development of the genitals is slow but very fast during adolescence.

5. Principles of Discontinuity of Growth

This principle posits (suppose) that the rate of growth changes at different periods. There are periods of acceleration and decelerations of growth.

During the first 9 months in the womb the growth is very fast. The child develops from a

microscopically small sperm cell to an infant of about 3 kg mass. For the first 14 days (during infancy) the growth is temporarily at a standstill. It is a period when the new-born baby tries to adjust itself to a completely new environment outside the mother's womb.

From babyhood until about 2-3 years of childhood up till the time of puberty, growth is slow. From puberty till the age of 15 or 16 years, growth is fast.

In brief, there are four stages of growth comprising 2 rapid and 2 slow stages viz :

a) From birth – 2 years - Rapid growth.

b) From 2 years to Puberty - Slow growth.

c) Puberty – 16 years - Rapid growth.

d) 16 – Maturity - Growth is slow.

6. Principle of Complexity of Growth

Growth is an extremely complex process. It has different collective aspects. It is complex because what happens to one area affects other areas. The effect of this is that it is not easy to specify causal relationships since there can be other causes in other areas i.e. causes for growth retardation in a child may be traced to reasons other than malnutrition.

7. Structure Generally Precedes Function

It may be because of emotional stress, illness, social isolation or physical harm. All physical components of the body including the brain usually mature and get ready before they can be functional. Before any organ can be used by the child, such an organ must be physically and physiologically ready before they can perform developmental tasks.

8. Principle Of Uniqueness Of Individuals

The principle asserts that every individual is unique, that there are no two people that are exactly alike. Every child's pattern and rate of growth is peculiar to him or her. We may say that an average age for a child to walk is 12 months, yet some children walk later or earlier than this. Average is therefore theoretical however useful it may be. Among twins of the same background, there are still some obvious differences. One may be more active than the other.

9. Modifiability Of Rates And Patterns Of Growth

The view of this principle is that growth is natural but the rate and pattern of growth can be modified by various factors and techniques. Some of these factors are :

1. **Nutrition and Drug taken by the mother.**
2. **Environmental Stimulation.**
3. **Opportunity to Learn.**
4. **Illness and Disease.**
5. **Genetic aspect (Mutational changes).**

The presence or absence of some of these factors can retard the rate and pattern of growth.

Research Methods Of Development

Developmental psychologists have devised methods which enable us to investigate the truth of these statements. Understanding the course of human life and the factors which shape the developing person is a cornerstone of psychology.

Longitudinal and Cross-Sectional Studies

The quickest way of answering the question 'how do people change as they get older?'

A Cross-Sectional Study:

A Cross-Sectional Study is designed to investigate how learning ability changes with age, for example, we might devise a series of learning tests and, in a controlled setting, invite groups of 10-, 20-, 30-, 40-, 50-, 60- and 70-year-olds to take the tests, allowing a specified time only. The result of this study would be quite likely to show that people in their twenties have the greatest learning

ability, and that as age increases a slight decline occurs initially and then more markedly in the upper age groups

A longitudinal study:

A longitudinal study is designed so that individuals are tested or assessed in some way at regular intervals over a period of their lives. In order to study learning ability a sample of individuals would be tested at, for instance, age 20, then tested again 10 years later at 30, and then again after a further 10 years in the final test at 40 years. Thus each participant would be tested three times over 20 years.

Longitudinal studies often require large amounts of time and funding, making them unfeasible in some situations. What results might be recorded after 20 years? Would they be the same as those found for the cross-sectional study?

It might reveal a decline in the two last tests, but it is more likely to show little change with age. So two procedures, apparently designed to answer the same question, give us quite different answers. Which one is right?

To put it simply: neither test is measuring age alone, and thus each has quite specific problems. Historical events affecting some or all the participants, as well as the individual life experiences particular to each participant, may have a greater impact on the characteristic being measured by the psychologist than age itself. Resolving these and other problems is complex.

Factors That Affect Growth And Development

Introduction

An individual at any stage of his development is the product of organic and environmental factors working hand in hand. There is therefore the need for you to understand these interplay of forces in order to provide adequate opportunity for the students to learn and to be able to assist and support them appropriately.

Heredity Mechanisms

Heredity is " the transmission of potentialities or traits of physical, mental and other characteristics from parents to off springs". When the sperm fertilizes the ovum, all the characteristics the new life will ever inherit from his/her parents and grandparents are set.

At conception, there are 23 pairs of chromosomes, one half from the father and the other half from the mother (46 chromosomes from both sides). These make up everything that determines the heredity of the child.

Specific Traits Determined by Heredity

We have already said that it is difficult to determine what traits heredity endows that are not influenced by environment. However, there are some that must be mentioned.

i. Physical features

It is easy to see that children are very often like their parents and grandparents. We do not mean that they can be exactly like their parents because as we have just learnt they inherit from both father and mother.

ii. Intelligence

From studies of twins especially identical twins, it has been found that under normal circumstances both twins are alike intellectually. When they are reared together, the degree of alikeness also known as correlation is very high .88. Even when they are reared in different places the correlation is .79, also very high. So we conclude that intelligence tends to be inherited somehow.

iii. Disorders

The commonest form of inheritable sickness in our environment is sickle cell anemia. People should know more about how this condition is inherited. Unfortunately we can not go into it now. Other forms of disorders and diseases are also inheritable.

iv. The rate of development

Also seems to be inherited. Generally a child that is fast in crawling will tend to be fast in walking and in many other aspects of physical development.

v. Blood type

People normally say blood is thicker than water. Perhaps we should say that a child always inherits the blood type of his parents. That is why a child or a close relation can donate blood for a person.

vi. Sex-related traits

A fertilized ovum (zygote) contains at least an *X-chromosome* and either an *X* or a *Y* chromosome from the sperm. If the sperm that unites with the ovum is the *X* type then we have an *XX* genotype and the result is a female child. But if a *Y*-bearing sperm unites with the Ovum, then we have an *Xy*

genotype and the result is a male child. The production of a male child solely lies with the man. That a family produces female children consistently is therefore not the fault of the wife.

ENVIRONMENT AND DEVELOPMENT

Environment implies all factors influencing the development of an individual right from the time of conception. It includes such things as health of the mother when the child is in the womb, home influences, school, and neighborhood influences, effects of climates, geographical location and all things that stimulate the senses.

ENVIRONMENTAL INFLUENCES

You will recall that we define environment in terms of "all the factors which affect the individual after the moment of conception".

FACTORS:

(a) Pre-natal factors: **These are factors in the womb which can influence growth and development. They can affect development positively or negatively.**

(b) The family members: **The family has a very strong and long lasting influence on the developing child. Every aspect of the child's development is affected. His values depend on the family, his relationship with people outside his home … etc.**

(c) The peers or mates: **age mates and friends influence the behaviors and the development of children.**

(d) Institutions:

i. School: **The school has tremendous influence on the conduct, learning and other behaviours of the child, it is here that the child acquires a lot of skills, knowledge, etc.**

ii. The religious Institutions: mosque, church, influence some aspects of the child's development.

iii. The media: radio, television, newspapers do have an impact.

(e) The physical environment

i. The conditions of a place affects the health and subsequently all other aspects of a child's development. Is there enough and right type of food? Is there clean drinking water?

ii. Facilities for learning exercise and interaction also affect development. Is there space for exercise and are there play materials?

How Environment Influences Development

Since environment makes it possible for hereditary gifts to grow and bloom we can say that all aspects of development are influenced by environment.

i. Language: **The child's competences in language depends on the way he is taught language in the home, in school etc.**

ii. Social relationship: **How the child relates with people depends on his experiences and the skills which he has for interacting with people.**

iii. Motor skills: **Although the child does not need to be taught how to crawl, stand, walk, how he performs many skills depends on the environment.**

iv. Intellectual ability: **Even though we have said that heredity has a strong influence, the child has to be stimulated for intellectual development to progress well.**

v. Physical development: **Environment can not change the physical structure except there is an incident. But how well a child grows depends on the nutrients and generally healthy conditions free from infections.. ect.**

vi. Moral values and judgment are learnt in the family and the home in which the children live. The way we are attached to our families and kin group here, the way we respect elders in our communities are not universal. They are important to us in our environment.

PSYCHOLOGICAL DEVELOPMENTAL

"CHARATERISTICS"

INFANTS AND TODDLERS

(Age 0 – 2 years)

Physical Development:

Infants (birth to age 1) and toddlers (" ages 1 - 2 yers " During toddlerhood, babies begin learning how to walk, talk, and make decisions for themselves) grow quickly, bodily changes are rapid and profound. Physical development refers to biological changes that children undergo as they age. Important aspects that determine the progress of physical development in infancy and toddlerhood include physical and brain changes. development of

reflexes, motor skills, sensations, perceptions, and learning skills and health issues.

The first 4 weeks of life are termed the neonatal period. Most babies weigh between (2.5 - 4.5 kg), and are between (45.7 - 55.8 cm) long. Male babies are generally slightly heavier and longer than female babies.

Physical growth is especially rapid during the first 2 years. An infant's birth weight generally doubles by 6 months and triples by the infant's first birthday. Similarly, a baby grows between (25 - 30 cm) in length (or height), and the baby's proportions change during the first 2 years. The size of an infant's head decreases in proportion from 1/3 of the entire body at birth, to 1/4 at age 2, to 1/8 by adulthood.

Fetal and neonatal brain developments are also rapid. The lower (subcortical) areas of the brain (responsible for basic life functions, like

breathing) develop first, followed by the higher (cortical) areas (responsible for thinking and planning). Most brain changes occur prenatally and soon after birth. At birth, the neonate's brain weighs only 25 percent of that of an adult brain. By the end of the second year, the brain weighs about 80 percent; by puberty, it weighs nearly 100 percent of that of an adult brain.

Reflexes and motor skills

Reflexes are automatic reactions to stimulation that enable infants to respond to the environment before any learning has taken place. For instance, babies automatically suck when presented with a nipple, turn their heads when a parent speaks. Some reflexes, such as blinking, are permanent. Others, disappear after several months and eventually become voluntary responses.

Motor skills, or behavioral abilities, develop in conjunction with physical growth. In other words, infants must learn to engage in motor activities within the context of their changing bodies. At about 1 month, infants may lift their chins while lying flat on their stomachs. Within another month, infants may raise their chests from the same position. By the fourth month, infants sit with support. By the fifth month, infants may roll over, and by the eighth month, infants may be able to sit without assistance. At about 10 months, toddlers may stand while holding onto an object for support. At about 14 months, toddlers may stand alone and perhaps even walk. Of course, these ages for each motor-skill milestone are averages. the rates of physical and motor developments differ among children depending on a variety of factors, including heredity.

Sensation and perception

Normal infants are capable of sensation, or the ability to respond to sensory information in the external world. These infants are born with functioning sensory organs, specialized structures of the body containing sensory receptors, which receive stimuli from the environment. Sensory receptors convert environmental energy into nervous system signals that the brain can understand and interpret. For example, the sensory receptors can convert light waves into visual images. The human senses include seeing, hearing, smelling, touching, and tasting.

Cognitive Development:

Much of modern cognitive developmental theory stems from the work of the Swiss psychologist, Jean Piaget. In the 1920s, Piaget observed that children's reasoning and

understanding capabilities differed depending on their age. Piaget proposed that all children progress through a series of cognitive stages of development. According to Piaget, the rate at which children pass through these cognitive stages may vary, but boys and girls eventually pass through all the stages, in the same order.

Piaget's sensorimotor stage

During Piaget's sensorimotor stage (birth to age 2), infants and toddlers learn by doing: looking, hearing, touching, grasping, and sucking. The learning process appears to begin with coordinating movements of the body with incoming sensory data. As infants intentionally attempt to interact with the environment.

Piaget divided the sensorimotor stage into six substages :

In stage 1 (birth through month 1), infants exclusively use their reflexes, and their cognitive capabilities are limited.

In stage 2 (months 1 through 4), infants engage in behaviors that accidentally produce specific effects. Infants then repeat the behavior to obtain the same effect. An example is the infant's learning to suck on a pacifier following a series of trial and error attempts to use the new object.

In stage 3 (months 4 through 8), infants begin to explore the impact of their behaviors on the environment.

In stage 4 (months 8 through 12), infants purposefully carry out goal directed behaviors. Object permanence, or the knowledge that out of sight objects still exist, may begin to appear at about month 9 as infants search for objects that are hidden from view.

In stage 5 (months 12 through 18), toddlers explore cause and effect relationships by intentionally manipulating causes to produce novel (new) effects. For example, a toddler may attempt to make his parents smile by waving his hands at them.

In stage 6 (months 18 through 24), toddlers begin to exhibit representational (symbolic) thought, demonstrating that they have started to

internalize symbols as objects, such as people, places, and things. The child at this stage, for instance, uses words to refer to specific items, such as milk, dog, papa, or mama.

According to Piaget, cognitive development occurs from two processes: Adaptation and Equilibrium.

Adaptation involves children changing their behavior to meet situational demands and consists of two subprocesses: Assimilation and Accommodation.

- **Assimilation is the application of previous concepts to new concepts, such as a child who refers to a whale as a fish.**
- **Accommodation is the altering of previous concepts in the face of new information, such as a child who discovers that some creatures living in the ocean are not fish and then correctly refers to a whale as a mammal.**

Equilibrium is Piaget's term for the basic process underlying the human ability to adapt is

the search for balance between self and the world. Equilibrium involves the matching of children's adaptive functioning to situational demands, such as when a child realizes that he is one member of a family and not the center of the world. Equilibrium, which helps remove inconsistencies between reality and personal perspectives, keeps children moving along the developmental pathway, allowing them to make increasingly effective adaptations and decisions.

Evaluating Piagetian theory

Critics suggest that toddlers and preschoolers are not as egocentric or as easily deceived as Piaget believed. young children may make inferences and use logic. Preschoolers also develop cognitive abilities in relation to particular social and cultural contexts. These abilities may develop differently within enriched or deprived cultural

environments. In other words, children who grow up in middle and upper class families may have more opportunities to develop cognitive skills than those who grow up in lower class families.

Language development:

Language skills begin to emerge during the first 2 years. Psycholinguists, specialists in the study of language, indicate that language is an outgrowth of children's ability to use symbols. Physical development determines the timing of language development. As the brains develop, preschoolers acquire the capacity for representational thinking, which lays the foundation for language. In this way, cognitive development also determines the timing of language development. Observational learning (imitation) and operant conditioning (reinforcement) play important roles in the early

acquisition of language. Children are reinforced to speak meaningfully and reasonably by imitating the language of their caregivers; in turn caregivers are prompted to respond meaningfully and reasonably to the children.

Psycholinguists are especially interested in three elements of language: content (what is meant), form (what is actually said), and use (how and to whom it is said). Psycholinguists claim that all members of the human race use these three elements in some combination to communicate with each other.

According to psycholinguists, acquisition of language also occurs within a social and cultural context. Socializing agents (family members, peers, teachers, and the media) teach children how to think and act in socially acceptable ways. Children learn about the world and society as they learn to use language.

Infants and toddlers understand language before actually speaking language; children have receptive language, or an understanding of the spoken and written word, before acquiring productive language, or an ability to use the spoken or written word.

By the end of the first year, most babies are uttering single words. Soon infants begin to use single words that convey complete ideas. "Mama" (meaning "Mama, come here") and "Milk!" (meaning "Give me some milk!"). When starting to put words together to form sentences, children first use telegraphic speech, in which words that are the most meaningful are used, such as " Want milk ".

EARLYC HILDHOOD

(Age 2 – 6 years)

Physical Development:

Ages 2 through 6 are the early childhood years, or preschool years. Like infants and toddlers, preschoolers grow quickly—both physically and cognitively. Especially evident during early childhood is the fact that development is truly integrated: The biological, psychological, and social changes occurring at this time (as well as throughout the rest of the life span) are interrelated. Although physical development in preschoolers is dramatic, the development is slower and more stable than during infancy.

Physical changes

Children begin to lose their baby fat, or chubbiness, around age 3 years. Toddlers soon acquire the leaner, more athletic look associated with childhood. The child's trunk and limbs grow longer, Even at this early stage of life, boys tend to have more muscle mass than girls.

The preschoolers' physical proportions also continue to change, Three year old preschoolers may grow to be about 96.5 cm tall and weigh about 14.5 kg. For the next 3 years, healthy preschoolers grow an additional 5 to 7.5 cm and gain from 1.8 to 2.7 kg per year. By age 6, children reach a height of about 116.8 cm and weigh about 20.8 kg. Of course, these figures are averages and differ from child to child, depending on socioeconomic status, nourishment, health, and heredity factors.

Brain development

The brain is comprised of two halves, the right and left cerebral hemispheres. competencies, and skills in either or both hemispheres. Specifically, language, writing, logic, and mathematical skills seem to be located in the left hemisphere, while creativity, fantasy, artistic, and musical skills seem to be located in the right hemisphere.

The majority of a child's neurons, or cells that make up nerves, form prenatally. The myelin sheaths that surround, insulate, and increase the efficiency of neurons.

The postnatal developments of cells and myelin sheaths help to explain why older children may perform behaviors that younger children are not capable of.

Motor skills

Motor skills are physical abilities or capacities. Gross motor skills, which include running, jumping, hopping, turning, skipping, throwing, balancing, and dancing, involve the use of large bodily movements. Fine motor skills, which include drawing, writing, and tying shoelaces, involve the use of small bodily movements. Both gross and fine motor skills develop and are refined during early childhood.

Albert Bandura's theory of observational learning is applicable to preschoolers' learning gross and fine motor skills. Bandura states that once children are biologically capable of learning certain behaviors, children must do the following in order to develop new skills :

1. Observe the behavior in others.
2. Form a mental image of the behavior.
3. Imitate the behavior.
4. Practice the behavior.
5. Be motivated to repeat the behavior.

Cognitive Development: (Age 2 – 6)

Pre-schoolers provide remarkable examples of how children play an active role in their own cognitive development, especially in their attempts to understand, explain, organize, manipulate, construct, and predict.

Piaget referred to the cognitive development occurring between ages (2 – 7 yrs) as the pre-operational stage. In this stage, children increase their use of language and other symbols, their imitation of adult behaviors, and their play. Children also play games of make believe: using an empty box as a car, playing family with siblings, and nurturing imaginary friendships.

Piaget also described the pre-operational stage in terms of what children cannot do. Piaget used the term operational to refer to reversible abilities that children had not yet developed.

By reversible, Piaget referred to mental or physical actions that can go back and forth meaning that they can occur in more than one way, or direction. Adding (3 + 3 = 6) and subtracting (6 − 3 = 3) are examples of reversible actions. Children at this stage, according to Piaget, make use of magical thinking, for instance, while speaking with their parents on the telephone and then asking for a gift, expecting it to arrive via the telephone.

Piaget believed that preschoolers' cognitive abilities are limited by egocentrism the inability to distinguish between their own point of view and the point of view of others. The capacity to be egocentric is apparent at all stages of cognitive development, but egocentricity is particularly evident during the preschool years. Young children eventually overcome this early form of egocentrism when learning that others have

differing views, feelings, and desires. Then children may interpret others' motives and use those interpretations to communicate mutually and therefore more effectively with others. Because mutual communication requires effort and preschoolers are still egocentric, children may lapse into egocentric speech during times of frustration. In other words, children (and adults) may regress to earlier behavioral patterns when their cognitive resources are stressed and overwhelmed. Piaget indicated that young children have not mastered classification, or the ability to group according to features.

Piaget also believed that young children cannot comprehend conservation, or the concept that physical properties remain constant even as appearance and form change. Young children have trouble understanding that the same amount of liquid poured into containers of

different shapes remains the same. A preoperational child will tell you that a handful of pennies is more money than a single five dollar bill.

In contrast to Piaget's theories of childhood egocentrism, similar studies indicate that children can and do relate to the frame of reference of others.

Researcher John Flavell suggested that preschoolers progress through two stages of empathy, or sharing perspectives. At the first level, (ages 2 – 3), the child understands that others have their own experiences. At the second level, (ages 4 – 5), the child interprets others' experiences, including their thoughts and feelings. This shifting in perspective is indicative of cognitive changes: At the first level, the child focuses on appearances. at the second level, on reality as they understand it. Hence, young

children develop social cognition. Typical 5 year olds are interested in how their minds and the minds of others work. Children eventually form a theory of mind, an awareness and understanding of others' states of mind and accompanying actions. Children can then predict how others will think and react, particularly based on their own experiences in the world.

Current research of 2 to 5 year olds clearly demonstrates that Piaget incorrectly assumed that preoperational children are only literally minded. In fact, these children can think logically, project themselves into others' situations, and interpret their surroundings. So while the cognitive qualities of Piaget's preoperational stage may apply to some or even many children, these qualities do not apply to all children.

Memory

Memory is the ability to encode, retain, and recall information over time. Children must learn to encode objects, people, and places and later be able to recall them from long term memory.

Young children do not remember as well as older children and adults. Furthermore, these children are better at recognition than at recall memory tasks.

Language Development

Language skills also continue to improve during early childhood. Thus, as their brains develop and acquire the capacity for representational thinking, children also acquire and refine language skills.

Preschoolers learn many new words, That Parents, siblings, peers, teachers, and the media provide opportunities for preschoolers to increase

their vocabulary. Consequently, the acquisition of language occurs within a social and cultural context. Socializing agents teach children how to think and act in socially acceptable ways.

Children learn about society as they learn about language. Society's values, norms, folkways (informal rules of acceptable behavior), and mores (formal rules of acceptable behavior) are transmitted by how parents and others demonstrate the use of words.

Around the world and in the United States, some young children are bilingual, or able to speak more than one language. These children learn two languages simultaneously, usually as a result of growing up with bilingual parents who speak both languages at home. Many of these bilingual children may fluently speak both languages by age 4.

Social development: (Age 2 -6)

1-Family Relationships:

Family relationships are critical to the physical, mental, and social health of growing preschoolers.

a-Parenting

Different parents employ different parenting techniques. The techniques parents choose depend on cultural and community standards, the situation, and the children's behavior at the time. The techniques that parents use to relate to their children are characterized by degrees of parental control and parental warmth.

Parenting styles:

1-Authoritarian parents demonstrate high parental control and low parental warmth. The

authoritarian parenting may produce fearful and dependent children.

2-Authoritative parents, however, demonstrate appropriate levels of both parental control and warmth. The authoritative style of parenting fosters open communication and problem solving between parents and their children.

3-Permissive (tolerant) parents demonstrate high parental warmth and low parental control when parenting. The Permissive parenting may result in rebellious children.

4-Indifferent parents demonstrate low parental control and low warmth. The indifferent parenting may render hostile and delinquent children.

5- In two-parent families, in which each parent has a different parenting style. For instance, a woman's permissive style may counterbalance her husband's authoritarian style.

6- The willingness of parents **This willingness does not imply, however, that everything within a family system is negotiable. Parental negotiating teaches children that quality relationships can be equitable, or equal in terms of sharing rights, responsibilities, and decision making. Most negotiating home environments are warm,**

b- Siblings (Brothers)

Preschoolers may learn as much or more from their siblings as from their parents. sibling relationships mirror other social relationships, providing basic preparation for dealing with people outside of the home. only siblings may provide opportunities for children to practice coping with the positives and negatives of human relationships.

2-Friends and Playmates:

Early family attachments may determine the ease with which children form friendships and other relationships. Children who have loving, stable, and accepting relationships with their parents and siblings are generally more likely to form similar relationships with friends and playmates. First friendships are created when a child is about age 3, although preschoolers may play together before that age. Childhood friendships create opportunities for children to learn how to handle anger-provoking situations, to share, to learn values, and to practice more mature behaviors.

Emotional Development: (Age 2 -6)

Two negative emotions experienced during early childhood are fear (anxiety) and aggression (hostility). Preschool children probably become fearful because of their remarkable fantasy life, and their inability to distinguish between reality and pretending.

Childhood fears are usually temporary. these fears normally disappear with time. Preschoolers (ages 2–6) are typically afraid of animals, bodily injury, dark places, loud noises, strangers, and being separated from their parents. Although childhood fears are normal and to be expected, exaggerated or chronic fears should be evaluated by a professional.

Childhood aggression has been a topic of intense study in recent decades. Aggression, which appears by ages 2 or 3, may involve an

intentional action to harm another (such as biting another child) or directed hostility to attain particular goals (such as taking a toy from another child). Fortunately, most children become less aggressive at about age 6.

Preschoolers probably develop aggression in response to their egocentric perspective. Anyone or anything that frustrates egocentric children by preventing them from getting what they want is likely to trigger a hostile response.

The male hormone testosterone may also explain why males are more likely than females to exhibit aggressive behavior.

Personality Development: (Age 2 -6)

The preschool years are associated with major developments in young children's socialization. No longer totally dependent on their parents, preschoolers begin the long road to

becoming adept at functioning on their own in the world. During early childhood (ages 2–6), children gain some sense of being separate and independent from their parents.

According to Erikson, the task of preschoolers is to develop autonomy, or self-direction, (ages 1–3), as well as initiative, or enterprise (ages 3–6).

Personality includes those stable psychological characteristics that define each human being as particular. Both children and adults have personality traits (long-term characteristics, such as temperament) and states (changeable characteristics, such as moodiness). While a variety of explanations are possible, most experts agree that whatever the causes, an individual's personality is solidly established by the end of early childhood.

According to Freud, the second year of childhood is the anal stage of psychosexual development, when parents face many new challenges while toilet training their children. Fixations at this stage may give rise to characteristic personality traits that fully emerge in adulthood. These personality traits include anal retention (excessive neatness, organization, and withholding) or anal expulsion (messiness and altruism).

Learning theorists claim that personality develops as a result of classical conditioning (Pavlov's learning by association), operant conditioning (Skinner's learning by reinforcement and punishment), and observational learning (Bandura's learning by imitation). whereby children observe and adopt the values, ideas, and standards of their significant others.

Cognitive psychologists speculate that personality arises, in part, from the attitudes and biases expressed by the adults around them.

Gender theorists claim that personality develops from "gender identification" and "gender socialization".

In the final analysis, no perspective alone can adequately explain the complex processes of personality development. A combination of psychosocial, parental, and biological influences are likely responsible for the ultimate determination of human traits and states.

MIDDLE & LATE CHILDHOOD

(Age 7 – 11 years)

Physical Development:

Ages 7 through 11 comprise middle and late childhood. these older children grow both physically and cognitively, although their growth is slower than it was during early childhood.

Physical Changes

By the beginning of middle childhood, children typically have acquired a leaner, more athletic appearance. Girls and boys still have similar body shapes and proportions until both sexes reach puberty,

Girls and boys grow about 5 to 7.6 cm and gain about 3 kg per year until puberty. Skeletal bones and muscles broaden and lengthen, which may cause children to experience growing pains.

Skeletal growth in period of childhood is also associated with losing the deciduous teeth, or baby teeth.

Throughout most of middle and late childhood, girls are smaller than boys and have less muscle mass. As girls enter puberty, however, they may be considerably larger than boys of the same age, who enter puberty a few years later. Once boys begin sexually maturing, their heights and weights eventually surpass the heights and weights of girls of the same age.

Brain and nervous system development

Brain and nervous system developments continue during middle and late childhood. More complex behavioral and cognitive abilities become possible as the central nervous system matures.

Middle-Late childhood, a growth spurt occurs in the brain so that by age 8 or 9, the organ is nearly adult size. Brain development during middle and late childhood is characterized by growth of specific structures, especially the frontal lobes. These lobes, located in the front of the brain just under the skull, are responsible for planning, reasoning, social judgment, and ethical decision making, among other functions. Damage to this part of brain results in erratic emotional outbursts, inability to plan, and poor judgment. The most anterior (front) portion of the frontal lobes is the prefrontal cortex, which appears to be responsible for personality.

As the size of the frontal lobes increases, children are able to engage in increasingly difficult cognitive tasks, such as performing a series of tasks in a reasonable order. An example is assembling a mechanical

toy: unpacking the pieces, connecting the parts, making the model move by adding a power source a series of tasks that must be completed in the correct order to achieve certain results.

Lateralization of the two hemispheres of the brain, also continues during middle-late childhood, as does maturation of the corpus callosum (the bands of neural fibers connecting the two cerebral hemispheres), and other areas of the nervous system. Interestingly, children achieve concrete operations around age 7 when the brain and nervous systems have developed a certain amount of neural connections. When these neural connections have developed, a child's ability to perceive and think about the world advances from an egocentric, magical viewpoint to a more concrete and systematic way of thinking.

Motor skills

Motor skills are behavioral abilities or capacities. Gross motor skills involve the use of large bodily movements, and fine motor skills involve the use of small bodily movements. Both gross and fine motor skills continue to refine during middle childhood.

Children love to run, jump, leap, throw, catch, climb, and balance. Children play baseball, ride bikes, roller skate, take karate lessons, take ballet lessons, and participate in gymnastics. As school-age children grow physically, they become faster, stronger, and better coordinated.

Children enjoy using their hands in detailed ways, too. From early in preschool, children learn and practice fine motor skills. Preschool children cut, paste, mold, shape, draw, paint, create, and write. These children also

learn such skills as tying shoelaces, untying knots, and flossing their teeth. In short, along with the physical growth of children comes the development of fine motor skills, including the sense of competence and confidence to use these skills.

Cognitive Development: (Age 7–11)

School-age children think systematically about multiple topics more easily than preschoolers. Older children have keener (eager) metacognition, a sense of their own inner world. These children become increasingly skilled at problem solving.

Piaget referred to the cognitive development occurring between ages 7 and 11 as the concrete operations stage. Piaget used the term *operations* to refer to reversible abilities that the child has not yet developed. By reversible,

Piaget referred to mental or physical actions that can occur in more than one way, or in differing directions. While in the concrete operations stage, older children cannot think both logically and abstractly. School-age children are limited to thinking concretely in tangible (sensible), definite, exact, and uni-directional terms based on real and concrete experiences rather than on abstractions. Older children do not use magical thinking and are not as easily misled as younger children. Unlike preschoolers, school-age children know better than to ask their parents to take them flying in the air just like the birds do.

In Piaget's view, children at the beginning of the concrete operations stage demonstrate conservation, or the ability to see how physical properties remain constant as appearance and form change. Unlike preschoolers, school-age children understand that the same amount of clay

molded into different shapes remains the same amount. A concrete operational child will tell you that five golf balls are the same number as five marbles, but the golf balls are larger and take up more space than the marbles.

Piaget believed that preoperational cognitive abilities are limited by egocentrism the inability to understand the point of view of others. But egocentrism is not found in children in the concrete operations stage. By the school years, children have usually learned that other people have their own views, feelings, and desires.

Piaget's model of cognitive development has come under increasing attacks in recent years. Modern developmentalists have frequently referred to experimental research that contradicts certain aspects of Piaget's theories. these researchers believe that children

understand far more than Piaget theorized. With training, for instance, younger children may perform many of the same tasks as older children.

Researchers have also found that children are not as egocentric, suggestible, magical, or concrete as Piaget held, and that their cognitive development is largely determined by biological and cultural influences.

School-age children are better at the skill of remembering than are younger children. Experiencing more of the world, older children have more to draw upon when encoding and recalling information.

Youngsters may remember more when participating in cooperative learning, in which adult supervised education relies on peers interacting, sharing, planning, and supporting each other.

Memory

School-age children also begin to evince (prove) metamemory, or the ability to comprehend the nature of memory and predict how well one will remember something. Metamemory helps children sense how much study time is needed for next week's math test.

Childhood intelligence

Psychologists and other authorities are keenly interested in childhood intelligence. Intelligence is " an inferred cognitive capacity that relates to a person's knowledge, adaptation, and ability to reason and act purposefully".

Around the beginning of the twentieth century, Alfred Binet and Theophile Simon measured perception, memory, and vocabulary in children. These researchers divided a child's mental age, or level of intellectual attainment, by

his or her chronological age, or actual age, to yield the child's intelligence quotient (IQ). Years later, the average IQ for a child was set at 100.

Today, the two most famous IQ tests for children are the Stanford-Binet Intelligence Scale and the Wechsler Intelligence Scale for Children (WISC), both of which have been updated numerous times.

For instance, Howard Gardner proposed that children exhibit multiple intelligences, including musical ability, complex movement, and empathy. Similarly, Robert Sternberg proposed the triarchic (tridimensional) theory of intelligence, which states that intelligence consists of three factors: information-processing skills, context, and experience. These three factors determine whether cognition or behavior is intelligent.

Social-Emotional Development: Age7-11

- Family Relationships: Age 7–11

Although school-age children spend more time away from home than they did as younger children, their most important relationships continue to be established at home. Children's family relationships normally include their parents, grandparents, siblings, and extended family members.

Middle - Late childhood is a transitional stage a time when parents begin sharing power and decision making with their children. However, because children have limited experiences upon which to draw when dealing with adult situations and issues, parents must continue to establish rules and define boundaries.

Children experience an increase in responsibility during this middle and late

childhood period. In addition to increased freedom, such as going unsupervised to spend a fun time with their peers. The majority of school-age children appreciate and enjoy their parents' acceptance of their more adult-like role in the family.

Discipline, while not necessarily synonymous (equal) with punishment, remains an issue in middle-late childhood. Today, most authorities agree that punishment is probably of less value than positive reinforcement, or the rewarding of acceptable behaviors.

- Friendships: Age 7–11

Friendships, especially same-gender friendships, are prevalent (widespread) during middle and late childhood. Friends serve as classmates, fellow adventurers, confidantes, and sounding boards. Friends also help each other to

develop self-esteem and a sense of competency in the social world. As boys and girls progress through middle and late childhood, their peer relationships take on greater importance. For example, older children are likely to enjoy group activities, such as skating, riding bikes, and building forts (castle).

- Social Cognition: Age 7–11

As children grow up, they improve in their use of social cognition, or experiential knowledge and understanding of society and the rules of social behavior. Children's use of social inferences, or assumptions about the nature of social relationships, processes, and others' feelings, also improves.

in school, help children to develop quality relationships. Competitive activities, such as team sports, help school-age children to discover

athletic talents as well as how to manage conflicts. In time, these children become better at predicting socially appropriate and workable behaviors.

- Stressors: Age 7–11

Boys and girls in the grade-school years are not immune to the stressors of their worlds. Homework, changing neighborhoods and schools, working parents these stressors and more are normal and expected during the course of growing up. Unfortunately, some children are exposed to more severe stressors, including divorce, physical abuse, and sexual abuse.

- Child Physical Abuse: Age 7–11

Child physical abuse is the intentional infliction of pain, injury, and harm onto a child. Child abuse also includes emotional and psychological abuse, including humiliation,

embarrassment, rejection, lack of attention, neglect, isolation, and terrorization.

Most modern experts believe child physical abuse is harmful to the emotional development of children. Adults who were physically and emotionally abused as children frequently suffer from deep feelings of anxiety, shame, guilt, and betrayal.

Researchers have also noted a wide range of emotional dysfunction during, soon after, and long after physical abuse. Emotional problems may be exhibited as anxiety attacks, suicidal tendencies, angry outbursts, withdrawal, fear, and depression, among others

- Child sexual abuse: Age 7–11

One emotionally damaging form of child abuse is child sexual abuse. Also known as child molestation.

Education is the best preventive measure for child molestation (harassment). Parents should explain to their children how to avoid being touched inappropriately and what to do when touched in an inappropriate manner.

Self-Concept: Age 7–11

According to Erikson, the primary developmental task of middle-late childhood is to attain industry, or the feeling of social competence. Competition (athletics, careless activities) and numerous social adjustments (trying to make and keep friends) mark this developmental stage. Successfully developing industry helps a child build self-esteem, or an evaluative attitude toward the self, which in turn builds the self-confidence necessary to form lasting and effective social relationships.

Most boys and girls develop a positive sense of self-understanding, self-definition, and self-control in middle-late childhood. Supportive and loving parents, teachers, and friends who make the children feel competent foster this type of development. When lacking skills in one area, children in this age group typically find another area in which to excel. For example, a child who does not like math may take up piano as a hobby and discover a talent for music. The more positive experiences that children have excelling in one or more areas, the more likely that these children will develop the self-confidence necessary to confront new social challenges.

Self-esteem, self-worth, self-regulation, and self-confidence ultimately form a child's self-concept.

ADOLESCENCE

(Age 12–19)

Physical Development: (Age 12–19)

Adolescence: the transition period between childhood and adulthood encompasses ages 12 to 19. It is a time of tremendous change and discovery. During these years, physical, emotional, and intellectual growth occurs at a dizzying speed, challenging the teenager to adjust to a new body, social identity, and expanding world view.

An early sign of maturation is the adolescent growth spurt, or a noticeable increase in height and weight. The female growth spurt usually begins between ages 10 and 14, and ends by age 16. The male growth spurt usually begins between ages 10 and 16, and ends by age 18.

Girls generally begin puberty a few years earlier than boys, somewhere around ages 11 to 12. Increasing levels of estrogen trigger the onset of puberty in girls. They grow taller; their hips widen; Around the age of 12 or 13, most girls today begin menstruating. The onset of menstruation is termed menarche.

Increasing levels of the hormone testosterone trigger the onset of puberty in boys around ages 12 to 14. Boys become taller, heavier, and stronger; their voices deepen; their shoulders broaden; hair grows on the face, and on other parts of the body.

The resulting changes of puberty can have wide ranging effects on teenagers' bodies. For both adolescent girls and boys, differences in height and weight, general awkwardness, emotional ups and downs, and skin problems (acne or pimples) are common.

Cognitive Development: Age 12–19

Most adolescents reach Piaget's stage of formal operations (ages 12 and older), in which they develop new tools for manipulating information. Previously, as children, they could only think concretely, but in the formal operations stage they can think abstractly and deductively. Adolescents in this stage can also consider future possibilities, search for answers, deal flexibly with problems, test hypotheses, and draw conclusions about events they have not experienced firsthand.

Cognitive maturity occurs as the brain matures and the social network expands, which offers more opportunities for experimenting with life. Because this worldly experience plays a large role in attaining formal operations, not all adolescents enter this stage of cognitive

development. Studies indicate, however, that abstract and critical reasoning skills are teachable. For example, everyday reasoning improves between the first and last years of college, which suggests the value of education in cognitive maturation.

i- Intellectual development

According to Robert Sternberg's triarchic theory, intelligence is comprised of three aspects: componential (the critical aspect), experiential (the insightful aspect), and contextual (the practical aspect). Most intelligence tests only measure componential intelligence, although all three are needed to predict a person's eventual success in life. Ultimately, adolescents must learn to use these three types of intelligence.

Componential intelligence is the ability to use internal information processing strategies

when identifying and thinking about solving a problem, including evaluating results. Individuals who are strong in componential intelligence do well on standardized mental tests. Also involved in componential intelligence is metacognition, which is the awareness of one's own cognitive processes—an ability some experts claim is vital to solving problems.

Experiential intelligence is the ability to transfer learning effectively to new skills. In other words, it is the ability to compare old and new information, and to put facts together in original ways. Individuals who are strong in experiential intelligence cope well with novelty (modernity) and quickly learn to make new tasks automatic.

Contextual intelligence is the ability to apply intelligence practically, including taking into account social, cultural, and historical

contexts. Individuals who are strong in contextual intelligence easily adapt to their environments, can change to other environments, and are willing to fix their environments when necessary.

An important part of contextual intelligence is tacit (implicit) knowledge, or savvy (intelligence), which is not directly taught. Tacit knowledge is the ability to work the system to one's advantage.

ii- Moral development and judgment

Another facet of cognitive development is moral development and judgment, or the ability to reason about right and wrong. Lawrence Kohlberg proposed a theory of moral development with three levels consisting of six stages:

-The first level, pre-conventional morality, has to do with moral reasoning and behavior based on rules and fear of punishment (Stage 1) and

nonempathetic self-interest (Stage 2). -The second level, conventional morality, refers to conformity and helping others (Stage 3) and obeying the law and keeping order (Stage 4). -The third level, post-conventional morality, is associated with accepting the relative and changeable nature of rules and laws (Stage 5) and conscience directed concern with human rights (Stage 6).

Moral development depends, in part, on the appearance of empathy, shame, and guilt. Internalization of morality begins with empathy, the ability to relate to others' pain and joy. Children in their first year begin to show signs of basic empathy in that they become distressed when those around them do likewise. Internalization of morality also involves shame (feelings of not living up to others' standards) and guilt (feelings of not living up to personal

standards). Shame develops around age 2, and guilt develops between ages 3 and 4. As children mature cognitively, they evidence an increasing ability to weigh consequences in light of self-interest and the interest of those around them. Teenagers typically demonstrate conventional morality as they approach their 20s, although some may take longer to gain the experience they need to make the transition.

Research tends to support much of Kohlberg's model; however, the theory has been criticized on several counts. According to some experts, the model favors educated individuals who are verbally sophisticated. People may also regress in their moral reasoning or behave differently than their moral reasoning may predict. Culture, family factors, and gender affect the attainment of the higher levels of moral judgment. hence, Kohlberg's model has been

criticized as limited in terms of certain cultures, family styles, and distinction between differences in male and female moral development.

An alternative to Kohlberg's model is that of Carol Gilligan. Gilligan proposed that men and women evince moral reasoning that is equally viable but that appears in different forms. She notes that men tend to be more concerned with justice, while women lean toward compassion. The differences most often appear in circumstances where men and women make moral judgments.

Similar to moral development is religious development. The three levels are the same as Kohlberg's: pre-conventional (fundamentalistic black or white and egocentric thinking based on religious laws and rules); conventional (conformity to accepted religious traditions and

Standards); and post-conventional (relativistic gray thinking; the acknowledgment of religious contradictions, human interpretations, and the changeable nature of rules). This latter stage is reached when the person has moved out of Piaget's concrete operations and into formal operations or post-formal operations, both of which involve extensive use of critical thinking skills. As with moral development, teenagers often evidence conventional religious thinking as they approach their 20s. Some move on to post-conventional religious thinking during college, where they are exposed to a large number of different people and viewpoints.

Health Issues: (Age 12–19)

Adolescent health problems are often correlated with low socioeconomic status, poor diet, inadequate health care, risk-taking

activities, personality issues, and a sedentary lifestyle. Yet the teenage years are typically healthy, although major health problems can emerge. Three possible major health problems include eating disorders, depression, and substance abuse.

- Eating Disorders

Eating disorders involve a preoccupation with food. anorexia nervosa, or self-starvation. The typical anorexic is a model teenager who eats very little. Related to anorexia is bulimia nervosa like anorexics, are obsessed with food.

- Depression

As many as 40 percent of adolescents have periods of depression, a type of mood disorder characterized by feelings of low self-esteem and worthlessness, loss of interest in life activities, and changes in eating and sleeping patterns.

Adolescent depression is often due to hormonal changes, life challenges, and/or concerns about appearance. More teenage females than males suffer from depression.

- Substance abuse

Some adolescents abuse substances to escape the pains of growing up, to cope with daily stresses. As alluring symbols of adulthood, Drug, tobacco/nicotine and Marijuana are the easily available drugs of choice for adolescents.

Sexual Identity, Orientation: (Age12-19)

A part of discovering one's total identity is the firming of sexual orientation, or sexual, emotional, romantic, and affectionate attraction to members of the same sex, the other sex, or both.

The Search for Identity: (Age 12–19)

Adolescence is the period of transition between childhood and adulthood.

Developmentalists have traditionally viewed adolescence as a time of psychosocial storm and stress of bearing the burdens of wanting to be an adult long before becoming one.

Developmentalists today are more likely to view adolescence as a positive time of opportunities and growth, as most adolescents make it through this transition without serious problems or rifts with parents.

Because early pioneers in development were interested only in childhood, Freud explained that the genital stage encompasses all of adulthood, and he described no special difference between adolescent and adult years.

In contrast, Erikson noted that the chief conflict facing adolescents at this stage is one of identity versus identity confusion. Hence, the psychosocial task for adolescents is to develop individuality. To form an identity, adolescents must define a personal role in society and integrate the various dimensions of their personality into a sensible whole. They must wrestle with such issues as selecting a career, college and political party.

Researchers Carol Gilligan and Deborah Tannen have found differences in the ways in which males and females achieve identity. Gilligan has noted that females seek intimate relationships, while males pursue independence and achievement.

The hormonal changes of puberty affect the emotions of adolescents. Along with emotional and sexual fluctuations (swing) comes the need

for adolescents to question authority and societal values, as well as test limits within existing relationships. This is readily apparent within the family system, where adolescents' need for independence from the parents and siblings can cause a great deal of conflict and tension at home. Societal mores and expectations during adolescence now restrain the curiosity so characteristic of young children, even though peer pressure to try new things and behave in certain ways is also very powerful. Added to this tug of war are teenagers' increasing desires for personal responsibility and independence from their parents.

ADULTHOOD (Age 20 – 65 +)

INTRODUCTION

The stage of adulthood is the last phase of human development. Although there is no clear poin when adulthood begins it is universally agreed that adolescence gradually fades into young adulthood and at a later point, full adulthood begins.

DEFINITION OF ADULT

The definition of who an adult is varies from culture to culture. Adulthood can be explained from biological, psychological, chronological age, social responsibility and perceived maturity perspectives.

Biologically, adulthood commences from the onset of puberty when the individual can produce off-springs.

Psychologically, adulthood is defined by maturity and the way the individual perceives himself/herself. This will include the chronological age, level of confidence in certain tasks, emotional stability and social responsibilities.

Chronologically, adulthood is defined by the number of years the person has lived on earth. This is the most controversial because there is no consistency in age for determining adulthood. While some claim 18 years, others suggest 20 or 21 years yet in some African countries anybody below age 25 years may not be considered as adult.

MATURATION AND AGING

Maturation refers to progress towards maturity or adulthood. It is the process of gradually bringing the various physiological and psychological features to full development in readiness for adult social participation.

In order for the individual to survive, the biological features of human beings mature first and start functioning adequately. These are followed by psychological capabilities such as attitude, interest, personality, and self-concept. The last sets of features are the social features of an individual which make him to cope with others and the society.

Growing old is considered as aging. Ageing is a continuous process that begins at conception through birth, infancy, childhood, adolescence, adulthood and ends with death. Aging is also

described as a decline in physiological competence that inevitably increases the incidence and intensifies the effects of accidents, disease and other forms of environmental.

Some of the theories use to explain the process of aging include:

(a) The physiological theory: as a man grows, he simply wears out and the structures and organs of his body decline both in function and appearance.

(b) The homeostatic imbalance theory holds that aging is characteristically an increase in homeostatic faults i.e. PH and sugar levels. Some diseases are associated with this.

(c) The hereditary theory which states that people with grand-parents who live long also tend to live even longer than their grand-parents.

(d) The environmental factor theory states that aging may be due to external factors such as diseases, viruses, rural living and radiation. The theory asserts that there are some factors operating in the environment which initiate and sustain the process of aging.

All these changes have implications for adults learning and should be well understood by teachers of the adult learners.

Physical Development In Adulthood

Naturally, growth ceases at 18 and human beings mature physically between the age of 25-30 years when the body reaches its maximum size and strength. From this period, wearing down of the tissues. The living processes then starts slowing down and aging sets in. Physical, speed and endurance (bearing) also decline.

VISUAL ACUITY

Though a number of other factors may account for visual impairment at adulthood (accident, muscle, impairment, diseases, cataract, glaucoma etc.) aging is the most critical factor. More and more of adults need reading glasses for near vision with increasing age and have difficulty seeing in weak light after middle age.

HEARING ACUITY

Our ability to hear high-pitched tones declines after 20 years, with loss of ability to hear lowpitched sounds beginning in the 60s. decline in hearing often starts at the age of 20 when the Central Nervous System begins to decline in function.

SENSE OF TASTE

Our sense of taste remains much intact into late life though many adults often report that food tastes more bland(nice).

REACTION TIME

Reaction time measures the time interval between receiving a stimulus and reacting to it. Reaction time increases from early childhood, reaches its maximum at about 18 and then significantly declines beyond 40s.

Other Physiological Changes

A substantial number of older adults show marked declines due to cerebral(brain) arteriosclerosis (hardening of the arteries) which results in serious loss of intellectual ability. The rate and extent of these declines differ markedly from individual to individual depending partly on the level of healthy exercise and activity that the

individual maintains during adulthood. Between 42 and 50, there is a decline in the strength and speed of movement in the heart. Oxygen supply to the brain also diminishes(shortage) with increasing age. All these will affect the capacity of an adult to learn.

Cognitive Development In Adulthood

Cognitive development continues to take place during adulthood. Small but steady improvement occurs from 20s to 70s in the components of crystallized intelligence such as knowledge of facts and word meanings. No declines occur before about age 75 in such fundamental aspects of intelligence as the ability to reason about everyday problems, and understand mathematical concepts, or to learn and remember meaningful information.

However, declines do occur in fluid intelligence and short term memory during later adulthood.

Older adults tend to perform slightly less well than younger adults in abstract problem solving, divergent thinking and cognitive tasks that must be performed quickly. The cognitive performance of older adults is generally slow than younger adults. Older adults, however, do better than younger adults on tasks of word meaning and decision making and perform equally on learning and reasoning about every day concepts.

EMOTIONAL DEVELOPMENT

Erikson proposed stages of adulthood development which are clearly different from those of the childhood in that:

(a) not every adult goes through the stages.

(b) the order of the changes can vary for some individuals.

(c) the timing of the changes is not controlled by biological maturation.

EARLY ADULTHOOD: (20 - 45)

The challenge of this stage is to enter into committed, loving relationships with others that partially replace the bunds with parents. If the individual succeeds in this task, there is the intimacy needed to progress in adult life. If not, he/she becomes isolated and less capable of full emotional development. This is a period of vigorous (powerful) health and the potential `for occupational advancement is high'.

MIDDLE ADULTHOOD: (40-65 YEARS)

The challenge here is to find meaning in our generative activities, work, family life, religion, community activities. The focus is now more on others rather than self. This could be the most productive and creative period in ones live. Generativity is a matter of reaching out rather than being self-centered. A person who is self-absorbed in this period will stagnate (stop active) and find that life loses much of its meaning during middle adulthood.

LATER ADULTHOOD: (65 YEARS ON)

The older adult who sees meaning in his/her life when considered as a whole continues to live a satisfying existence instead of merely (just) staying alive.

Most adults live beyond the traditional retirement age of 65. Many often plan second

careers, get involved in politics, writing and other engaging activities in their sixties, seventies and eighties. Older people are often anxious about death and this is a frightening realization for some but for many it is accompanied by a positive focusing on the meaningful emotional priorities of life.

DEATH AND DYING

The life cycle begins with the life of a single cell and ends with the death. Everything has an end, including each of our lives. Contemplating and planning for one's death is a normal part of age. Older adults often come to accept its inevitability with little anguish(grief). Highly religious individuals experience the least fear of death while those that do not consistently practice their faith experience the greatest fear of dying.

EDUCATIONAL IMPLICATIONS

(Children Cognitive Development)

As teachers we must take into account the relevance of Piaget's theorie and apply them for effective teaching and learning.

•Activity and Cognitive Growth

A major educational implication of cognitive development is that growth in any stage depends on activity. That development of brainpower is not fixed at birth, but is a function of appropriate activity during any particular stage which produces cognitive growth.

This is because the thinking of some 12-15 year old children is more or less still like that of the children of 7-10 who are at the concrete operational stage. Therefore, your teaching methods must be varied to incorporate both

concrete representations and abstract ideas in your lessons.

• Curriculum and Cognitive Development

Curriculum should not take cognitive development for granted but should provide specific educational experiences based on children's developmental levels and ability.

This is particularly important at the formal operational stage. Simply because they have reached formal logical thought processes does not necessarily mean they can automatically think logically. Problem solving should be encouraged based on logical scientific methodology, and where possible with models that will help to conceptualize the problem.

• Learning Materials

Piaget's theory tells us that since children have developed full formal pattern of thinking, they

are able to attain logical, rational abstract strategies, symbolic meaning and metaphors. Stories with morals can be generalized, simulations and games can be presented and understood, e.g. in monopoly game.

We should at all times examine curriculum materials. If they are clearly above their ability, we should revise the lessons and use material that they can understand rather than assume that all our students are capable of understanding them. Failure day by day will make them lose interest completely in the subject e.g. in mathematics. We should provide experiences and activities that stimulate thinking.

EDUCATIONAL IMPLICATIONS

(Children Emotional Development)

We have seen that the experiences at home are transferred to the school and these tend to affect the emotional development of children.

To promote effective learning, a certain amount of tension and emotional involvement is necessary but this must be moderate since an excess will do more harm than good. In other words, we are saying that with proper handling, emotion can make learning to take place if the teacher follows these principles.

i. Children should be highly motivated. This can be done by giving them new tasks to perform but they must be related to the pupil's level of maturity.

ii. The children must be emotionally involved in the classroom activities by making them to appreciate the need for learning new tasks.

iii. **The use of appropriate incentives like verbal praises 'Fine' Good' and sometimes rewards like sweets are capable of arousing the pupil's self esteem and prestige.**

iv. **Any new learning task must be related to the cultural background of the pupils.**

v. **The teacher's treatment of a particular child might spread to other members of the class. For instance, if a teacher gives corporal punishment to a child, others might be afraid not to say something out of fear that they might equally be punished. This will definitely affect the other children's desire to learn.**

EDUCATIONAL IMPLICATIONS
(Adolescents Physical Development)

- School must support the attainment of developmental tasks of adolescents if the adolescents are to completely adjust and become successful in their adult life. For example, it is important for schools to incorporate things like preparation for family life and career counseling in school curricula.

- Respect adolescents' desire for independence from parents and other adults by giving them less command and encouraging them to follow rules on their own initiatives.

Students should be allowed more opportunities to participate in organizing their own learning activities. Teachers should make students realize that while physical appearance is important, it is not the only quality that should be emphasized. Responsible behaviour

is also very important.

- The importance of adolescent nutrition should be emphasized in school and at home.

- School curriculum should allow time for resting, relaxation and recreation for their fast growing bodies to recoup.

EDUCATIONAL IMPLICATIONS

(Adolescents Cognitive Development)

The mental characteristics of adolescence have some educational implications for the classroom teacher.

1. Teachers, as much as possible, should expose adolescents to rich experiences. This enables them to see challenging situations. For example adolescents would like to watch a court proceeding instead of a lecture on the concept of justice.

2. Teach adolescents through the problem solving approach. You might ask, for example, `if you become a Commissioner for Finance in your state, suggest ways of generating new revenue for your State'. They will enjoy such assignments.

3. Guided discovery method should be used for teaching the adolescent classes. For example the teacher could guide an adolescent class through a project aimed at solving community water problem. Most of the thinking could be done by the adolescents.

4. Finally, provide for adolescents libraries and other opportunities for free discussion and independent work.

EDUCATIONAL IMPLICATIONS

(Adolescents Social Development)

The social relationships of adolescents have educational implications.

1. The teacher should provide opportunities for effective use of the social groups for classroom work. A group could be asked to supervise for the teacher the class manual labour.

2. Peer teaching and group assignments should be exploited to the full.

3. As teachers, we should provide enough lectures on moral and sex education.

4. The schools should have guidance and counselling experts to guide these adolescents.

EDUCATIONAL IMPLICATIONS

(Adolescents Emotions Development)

- As a teacher, you should understand the body changes taking place in adolescents and how they affect their emotional reactions. You should make allowances for occasional outbursts and guide them to understand and overcome the effect of these changes.

- Know that an emotional behaviour can be generalized from one situation to another, the school should be a pleasant place to work and play in.

- If the ensuing (origin) emotional experience is pleasant, it will lead the student to love learning. If failure is greeted with scolding, and corporal punishment, with little attention to motivation, students will dislike schooling. When experience of learning becomes so unpleasant, it creates the

emotion of fear and boredom. In such situations, even the bright pupils will fail to profit from learning.

- Emotional reactions such as fear, anxiety, guilt, jealousy and anger can inhibit bodily functions growth and even learning, therefore teachers must learn to satisfy the emotional needs of children.

- Teachers must promote the emotions of love, tenderness, rest, joy, pleasure, humour and laughter to facilitate mental health among learners.

- Moods created by emotional experiences last for a long time in many adolescents. The moods inhibit their disposition to learn.

EDUCATIONAL IMPLICATIONS

(Adulthood)

- **The teacher is a facilitator.**
- **Learners are seen as individuals not group.**
- **Illumination in the classroom should be adequate.**
- **Ensure circular seating to ensure that all learners can hear the facilitator and see demonstrations clearly.**
- **Use the informal, friendly approach in greeting and working with adults.**
- **Outline specific objectives and both short and long term benefits of programmes.**
- **Use positive reinforcement frequently.**
- **Provide regular feedback.**
- **Encourage the sharing of ideas and collaborative learning.**

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