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A study on the child development

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Abstract

The sole aim of education is to bring an all-round development in the personality of individual. Educational psychology, being a science and technology of education, should help in the realization of this aim. The constant interaction with the environment results in the growth and development of the innate capacities, abilities and potentialities of the child. As far as the human being is concern, life starts with the conception in the mother's womb as a result of the process of fertilization of the ovum of the mother by the sperm cell of the feather. The mother's womb then becomes the site and the means for the growth and development of the new life. In all animals, including human beings, the pre-natal period resembles the time taken by a germinating seed to come out of the soil, which then grows and develops into a full-fledged plan or tree. This paper analyses the child development on the basis of the theories of Piaget, Erickson and other related issues of child development.

Key words: ***All-round development, personality of individual, growth and development, innate capacities, fertilization, potentialities.***

Introduction: Child development refers to the biological, psychological and emotional changes that occur in human beings between birth and the end of adolescene, as the individual progresses from dependency to increasing autonomy. It is a continuous process with a predictable sequence yet having a unique course for every child. It does not progress at the same rate and each stage is affected by the preceding types of development. Because these developmental changes may be strongly influenced by genetic factors and events during prenatal life, genetics and prenatal development are usually included as part of the study of child development. Related terms include developmental psychology, referring to development throughout the lifespan, and pediatries, the branch of medicine relating to the care of children. Developmental change may occur as a result of genetically-controlled processes known as maturation, or as a result of environmental factors and learning, but most commonly involves as interaction between the two. It may also occur as a result of human nature and our ability to learn from our environment.

There are various definitions of periods in a child's development, since each period is a continuum with individual differences regarding start and ending.

Some age-related development periods and examples of defined intervals are: newborn (ages 0-4 weeks); infant (ages 4 weeks-1 year); toddler (ages 1-3 years); preschooler (ages 4-6 years); school-aged child (ages 6-13 years); adolescent (ages 13-19). However, organizations like Zero to Three and the World Association for Infant Mental Health use the term infant as a broad category, including children from birth to age 3.

Promoting child development through parental training, among other factors, promotes excellent rates of child development. Parents play a large role in a child's life, socialization, and

development. Having multiple parents can add stability to the child's life and therefore encourage healthy development. Another influential factor in a child's development is the quality of their care. Child care programs present a critical opportunity for the promotion of child development. In addition there are also some theories that seek to describe a sequence of states that compose child development.

Objectives of the study:

The objectives of this paper are–

i. To analyze the child development pattern according to Piaget, Erickson and other theories.

ii. To analyze the mechanisms of child development.

Analyses and Presentation of data

Theories:

Piaget

Main articles: Jean Piaget and Piaget's theory of cognitive development.

Piaget believed the origin of knowledge came from Psychology and began working on the first "standardized intelligence test" al Alfred Binet labouratories, thie influenced his career greatly. As he carried out this intelligence testing he began developing a profound interest in the way children's intellectualism works. As a result, he developed his own labouratory and spent years recording children's intellectual growth and attempted to find out how children develop through various stages of thinking. This led to Piaget develop four important stages of cognitive development: sensorimotor stage (birth to age 2), preoperational stage (age 2 to 7), concrete-operational stage (ages 7 to 12), and formal-operational stage (ages 11 to 12, and thereafter).

Piaget stages:

Sensorimotor: (birth to about age 2).

According to Piaget, when an infant reaches about 7-9 months of age they begin to develop what he called object permanence, this means the child now has the ability to understand that objects keep existing even when they cannot be seen.

Preoperational: (begins about the time the child starts to talk to about age 7)

During this stage of development, young children begin analysing their environment using mental symbols. These symbols often include words and images and the child will begin to apply these various symbols in their everyday lives as they come across different objects, events and situations. However, Piaget's main focus on this stage and the reason why he named it "preoperational" is because children at this point are not able to apply specific cognitive operations, such as mental math. In addition to symbolism, children start to engage in pretend play in which they pretend to be people they are not (teachers, superheroes). In addition, they sometimes use different props to make this pretend play more real. Some deficiencies in this stage of development are that children who are about 3-4 years old often display what is calle egocentrism, which means the child is not able to see someone else's point of view, they feel as if every other person is experiencing the same events and feelings that they are experiencing. However, at about at 7 thought processes of children are no longer egocentric and are more intuitive, meaning they now think about the way something looks instead of rational thinking.

Concrete: (about first grade to early adolescence) During this stage, children begin developing cognitive operations and begin applying this new thinking to different events they may encounter. Unlike the preoperational stage, shildren can now change and rearrange mental images and symbols to form a logical thought; an example of this is reversibility in which the child now has the ability to reverse an action just by doing the opposite.

Formal operations: (about early adolescence to mid/late adolescence) The final stage of Piaget's cognitive development defines a child as now having the ability to "think more rationally and systematically about abstract concepts and hypothetical events". Some positive aspects during this time is that child or adolescent begins forming their identity and begin understanding why people behave the way they behave. However, there are also some negative aspects which include the child or adolescent developing some egocentric thoughts which include the imaginary audience and the personal fable. An imaginary audience is when an adolescent feels that the world is just as concerned and judgmental of anything the adolescent does as they are, an adolescent may feel as is they are "on stage" and everyone is a critique and they are the ones being critiqued. A personal fable is when the adolescent feels that he or she is unique person a everything they do is unique. They feel as if they are the only ones that have ever experienced what they are experiencing and that they are invincible and nothing bad will happen to them it will only happen to others.

Erik Erikson:

Main articles: Erik Erikson and Psychosocial development.

Erikson, a follower of Freud's, synthesized both Freud's and his own theories to create what is known as the "psychosocial" stages of human development, which span from birth to death, and focuses on "tasks" at each stage that must be accomplished to successfully navigate life's challenges.

Erikson's eight stages consist of the following:

- Trust vs. mistrust (infant).
- Autonomy vs. shame (toddlerhood).
- Initiative vs. guilt (preschooler).
- Industry vs. inferiority (young adolescent).
- Identity vs. role confusion (adolescent).
- Intimacy vs. isolation (young adulthood).
- Generativity vs. stagnation (middle adulthood).
- Ego integrity vs. despair (old age).

Other theories: The "core knowledge perspective" is an evolutionary theory in child development that proposes "infants begin life with innate, special-purpose knowledge systems referred to as core domains of thought". There are five core domains of thought, each of which is crucial for survival, which simultaneously prepare us to develop key aspects of early cognition; they are: physical, numerical, linguistic, psychological and biological.

Continuity and discontinuity in development: Although the identification of developmental milestones is of interest to researchers and to children's caregivers, many aspects of developmental change are continuous and do not display noticeable milestones of change. Continuous developmental changes, like growth in stature, involve fairly gradual and predictable progress toward adult characteristics. When developmental change is discontinuous, however, researchers may identify not only milestones of development, but related age periods often called stages. A stage is a period of itme, often associated with a known chronological age range, during which a behaviour or physical characteristic is qualitatively different from what it is at other ages. When an age period is referred to as a stage, the term implies not only this qualitative difference, but also a predictable sequence of developmental events, such that each stage is both preceded and followed by specific other periods associated with characteristic behavioral or physical qualities.

Stages of development may overlap or be associated with specific other aspects of development, such as speech or movement. Even within a particular developmental area, transition into a stage may not mean that the previous stage is completely finished. For example, in erikson's discussion

of stages of personality, this theorist suggests that a lifetime is spent in reworking issues that were originally characteristic of a childhood stage. Similarly, the theorist of cognitive development, Piaget, described situations in which children could solve one type of problem using mature thinking skills, but could not accomplish this for less familiar problems, a phenomenon he called horizontal decalage.

Child playing with bubbles: One kind of environmental guidance of development has been described as experience-dependent plasticity, in which behavior is altered as a result of learning from the environment. Plasticity of this type can occur throughout the lifespan and may involve many kinds of behaviour, including some emotional reactions. A second type of plasticity, experience-expectant plasticity, involves the strong effect of specific experiences during limited sensitive periods of development. For example, the coordinated use of the two eyes, and the experience of a single three-dimensional image rather than the two-dimensional images created by light in each eye, depend on experiences with vision during the second half of the first year of life. Experience-expectant plasticity works to fine-tune aspects of development that cannot proceed to optimum outcomes as a result of genetic factors working.

Developmental milestones:

Main article: Child development stages: Milestone are changes in specific physical and mental abilities (such as walking and understanding language) that mark the end of one developmental period and the beginning of abother. For stage theories, milestones indicate a stage transition. Studies of the accomplishment of many developmental tasks have established typical chronological ages associated with developmental milestones. However, there is considerable variation in the achivement of milestones, even between children with developmental trajectories within the typical range. Some milestones are more variable than others; for example, receptive speech indicators do not show much variation among children with typical hearing, but expressive speech milestones can be quite variable.

A common concern in child development is developmental delay involving a delay in an age-specific ability for important developmental milestones. Preventtion of and early intervention in developmental delay are significant topics in the study of child development. Developmental delays should be diagnosed by comparison with characteristic variability of a milestone, not with respect to average age at achievement. An example of a milestone would be eye-hand coordination, which includes a child's increasing ability to manipulate objects in a coordinated manner. Increased knowledge of age-specific milestones allows parents and others to keep track of appropriate development.

Aspects: Child development is not a matter of a single topic, but progresses somewhat differently for different aspects of the individual. Here are descriptions of the development of a number of physical and mental characteristics.

Physical growth: Physical growth in stature and weight occurs over the 15-20 years following birth, as the individual changes from the average weight of 3.5 kg and length of 50 cm at full term birth to full adult size. As stature and weight increase, the individual's proportions also change, from the relatively large head and small torsp amd limbs of the neonate, to the adult's relatively small head and long torso and limbs. The child's pattern of growth is in a head-to-toe direction, or cephalocaudal, and in an inward to outward pattern (center of the body to the peripheral) called proximodistal.

Speed and pattern of development: The speed of physical growth is rapid in the months after birth, then slows, so birth weight is doubled in the first four months, tripled by age 12 months, but not quadrupled untile 24 months. Growth then proceeds at a slow rate until shortly before puberty

(between about 9 and 15 years of age), when a period of rapid growth occurs. Growth is not uniform in rate and timing across all body parts. At birth, head size is already relatively near to that of an adult, but the lower parts of the body are much smaller than adult size. In the course of development, then the head grows relatively little, and torse and limbs undergo a great deal of growth.

Mechanisms of developmental change: Genetic factors play a major role in determining the growth rate, and particularly the changes in proportion characteristic of early human development. However, genetic factors can produce the maximum growth only if environmental conditions are adequate. Poor nutrition and frequent injury and disease can reduce the individual's adult stature, but the best environment cannot cause growth to a greater stature than is determined by heredity.

Speed and pattern of development: The speed of motor development is rapid in early life, as many of the reflexes of the newborn alter or disappear with the first year and slows later. Like physical growth, motor development, shows predictable patterns of cephalocaudal (head to foot) and proximodistal (torso to extremities) development, with movements at the head and in the moore central areas coming under control before those of the lower part of the body or the hands and feet. Types of movement develop in stage-like sequences; for example, locomotion at 6-8 months involves creeping on all fours, then proceeds to pulling to stand, "cruising" while holding on to an object, walking while holding an adult's hand, and finally walking independently. Older children continue the sequence by walking sideways or backward, galloping, hopping, skipping with one foot and walking with the other, and finally skipping. By middle childhood and adolescence, new motor skills are acquired by instruction or observation rather than in a predictable sequence. There are Executive Functions of the brain (working memory, timing measure of inhibition and switching) which are important to motor skills. Critiques the order of Executive Functioning leads to Motor Skills, suggesting Motor Skills can support Executive Functioning in the brain.

Mechanisms of motor development: The mechanisms involved in motor development involve some genetic components that determine the physical size of body parts at a given age, as well as aspects of muscle and bone strength. The main areas of the brain involved in motor skills are the frontal cortex, parietal cortex and basal ganglia. The dorsolateral frontal cortex is responsible for strategic processing. The parietal cortex is important in controlling perceptual-motor integration and the basal ganglia and supplementary motor cortex are responsible for motor sequences. Nutrition and exercise also determine strength and therefore the ease and accuracy with which a body part can be moved. Flexibility is also impacted by nutrition and exercise as well. It has also been shown that the frontal lobe develops posterio-anteriorally (from back to front). This is significant in motor development because the hind portion of the frontal lobe is known to control motor functions. This form of development is known as "Portional Development" and explains why motor functions develop relatively quickly during typical chilhood development, while logic, which is controlled by the middle and front portions of the frontal lobe, usually will not develop until late chilhood and early adolescence.

Mechanisms of cognitive development: Cognitive development is primarily concerned with ways in which infants and children acquire, develop and use internal mental capabilities such as problem solving, memory and language. Cognitive development has genetic and other biological mechanisms, as is seen in the many genetic causes of intellectual disability. Environmental factors including food and nutrition, responsiveness of parents, daily experiences, physical activity and love can influence early brain development of children. However, although it is assumed that brain functins cause cognitive events, it has not been possible to measure specific brain changes and show that they cause cognitive change. Developmental advances in cognition are also related to

experience and learning and this is particularly the case for higher-level abilities like abstraction, which depend to a considerable extent of formal education.

Mechanisms of social and emotional development: Genetic factors appear to regulate some social-emotional developments that occur at predictable ages, such as fearfulness, and attachment to familiar people. Experience plays a role in determining which people are familiar, which social rules are obeyed and how anger is expressed.

Parenting practices have been shown to predict children's emotional intelligence. The objective is to study the time mothers and children spent together in joint activity, the types of activities that they develop when they are together, and the relation that those activities have with the children's trait emotional intelligence. Data was collected for both mothers and children (N = 159) using self-report questionnaires. Correlations between time variables and trait emotional intelligence dimensions were computed using Pearson's Product-Moment Correlation Coefficient. Partial correlations between the same variables controlling for responsive parenting were also computed. The amount of time mothers spent with their children and the quality of their interactions are important in terms of children's trait emotional intelligence, not only because those time of joint activity reflect a more positive parenting, but because they to promote modeling, reinforcement, shared attention and social cooperation.

Conclusion: Development is said to be a complex process in comparison to the process of growth. The result of growth in terms of quantitative changes are very specific, fairly easy to observe and measurable. The results of development, in comparison, are quite complex and difficult as far as their actual assessment and measurement is concerned.

Moreover, development in general, from conception onward in various dimensions of one's personality is found to follow some basic rules known as the principles of development, the knowledge of these principles of growth and development proves quite useful to parents and teachers for ensuring the harmonious growth and development of the personalities of their children.

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