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4. **Introduction**

Human development is a naturally occurring phenomenon throughout the human life span. It is effectively the gradual and cumulative change of human characteristics that are essential to realizing the human ideal of self-expression. Development occurs naturally, is often organized and is altered by numerous factors to be considered in this essay. The holistic understanding of human development involves an assessment of the changes that occur in the fundamental areas of life, the variables that are causal to those changes, and the principles that guide them. Historically, development was studied as evolution of a species relying on natural selection. Similarly, physical, cognitive, social and emotional development are regarded with respect to their effect on equality, sustainability, productivity and empowerment of individual human life in society. As the human body is considered to be a system of individual parts, so will the areas of development be considered contributing factors of an interlinked phenomenon, which produces varied, functioning adults who contribute to the overall progress of society.

1. **Physical Development**

The biological change of the human body and brain is the most conspicuous area of development and a natural place to begin trying to understand overall development. It is a combination of an increase in the number of cells in an organism – growth – that occurs according to a genetically programmed sequence – maturation. It is both qualitative and quantitative in this regard, and is continuous throughout a life span, although it’s rate changes. There are continuous, defined stages in physical development, each exhibiting specific milestones unique to it, some of which are direct prerequisites for the more obscure areas of development. For example, change in brain activity in middle childhood initiates logical thinking, memory formation and information processing, which are functions of cognitive development. Cognition is not a physically recognizable aspect of human life, therefore, without knowledge of brain development, it would remain uncharted territory.

**2.1 Stages of Physical Development**

There are six stages of physical change span human life from conception until death – namely prenatal, infancy, childhood, adolescence, adulthood and old age. The most significant physical growth occurs between infancy and adolescence, after which development reverses direction and declines as old age, and eventually death approach. Each stage has unique characteristics of change which are considered normal for human beings. The absence of or delay in the appearance of key characteristics indicates a developmental abnormality which could be the result of an existing disorder. This information is key to medical practitioners, especially in the early stages of life, because early recognition and subsequent prognosis will allow for remediation to take place while reversibility is still fairly easy. This is especially important in practical speech therapy.

* + 1. **Prenatal Stage**

This ten month period from conception until birth is characterized by rapid increase in cell number after germination. The fused sperm and egg form all major appendages, organs and organ systems necessary for sustaining human life, according to the genetic sequence provided by parental DNA. This is the foundation upon which all development is built, and according to Werner’s 1955 research in Kauai, *“children who experienced prenatal or birth complications were more likely than others to develop physical handicaps, mental illness, and learning difficulties.”* (Sieglar, DeLoache, & Eisenberg, 2010, p. 2).

* + 1. **Infancy**

Noted for a drastic change in bodily changes due to accelerated growth over a brief period of two years and rapid maturation initiating the acquisition of motor skills. A new born has the capacity to sustain life through the function of recently fully-formed organs, for example, breathing is automatic once the first breath is taken. Swallowing and suckling are functions of the swallowing, suckling and rooting reflexes, which appear shortly after birth, and are responsible for the infant’s feeding. The swimming reflex – involuntary limb movement, breath holding and brief floating – eventually disappears, however, its presence makes four reflexes that are responsible for preserving life for infants. Locomotor development during this time is also fairly significant. Head raising, becomes sitting which evolves to crawling and eventually, walking over about 10 months. Motor skills favour a cephalocaudal pattern rather than a proximodistal one, although they inevitably develop in both aspects, therefore head and neck movement begin before limb movements As a product of maturation, it is apt to conclude that mastering simple movements is the beginning of motor skill acquisition. As practice creates confidence and provides muscle tone, visual motivation is combined with movement to perform more complex, but coordinated activities. Cognitively, there is some significant change in terms of sound recognition, achieving object permanence, emotional expression, and gestural communication. However, the largely dominant area of change is physical.

* + 1. **Childhood**

Characterized by significant change in cognitive abilities although at a much slower rate than the physical growth preceding it. The expansion of the child’s range of activity, diversification of interactional environment, along with increase in brain function largely contribute to this. Maturation of the reticular formation in the central nervous system increases the child’s capacity to maintain attention. The ability to pay attention for an extended period of time is not only important for formal education, but is a key determinant in detail identification. Therefore, perception is dependent on attention capacity, which increases until puberty. Overall, the brain goes through a large amount of functional increase during this period, and the cognitive and language skills acquired reflect that. The most consequential of these are an increased proficiency in symbolic thought, and its subsequent evolution into logical thinking, memory formation and information processing. Environmental curiosity, interest in creative activities and interpersonal communication cumulatively have a positive effect on brain function, which translates into efficient language acquisition and higher capacity for more complex cognitive activities with time. Language acquisition complements cognitive skill development, and both complement increased brain function. Therefore, only positive feedback is present, meaning cognitive development only exists in an upward trajectory. A larger environment of interaction introduces socialization to a child – which dictates cultural norms, societal conventions and accepted practices the child must adhere to in order to assimilate into society. Physically, growth declines over time, motor skills become more refined, and gross motor activities are more pronounced as muscles tone and peers provide both competition and encouragement. Converse to infancy, cognitive development largely dominates this period of time.

* + 1. **Adolescence**

Final period of significant change in physical development as puberty takes place. Puberty is the sexual maturity triggered by hormonal release in preparation for reproduction. There often is a psychological change accompanying puberty as breasts form and menstruation begins in females, while males grow facial and pubic hair and begin to produce semen. Self-consciousness is a rampant feeling amongst adolescents. Apart from the primary and secondary sexual characteristics, a final growth spurt occurs, achieving just short of complete physical growth. Minimal changes will occur in the body past the growth spurt. Sexual reproduction is a vital adult societal function as procreation is necessary for society to continue to exist. As adolescence is the transition from childhood into adulthood, it is befitting that sexual maturity occurs in this time, as physical development approaches completion and cognitive development continues. Adolescents typically don’t consider reproduction when aspiring to adulthood, but rather show interest in “*accepting responsibility for oneself, making independent decisions*, and *becoming financially independent*” (Arnett, 2013, p. 14) largely due to their growing frustration with parental guidance. The inherent human need of self-expression is evident in these temperamental individuals.

* + 1. **Adulthood**

Biological growth has ceased and mental growth is dependent on individual motivation to acquire further skills. However, individuals are considered fully functional, social beings that contribute to society and are able to develop intimate sexual relationships. The peak of physical, cognitive, social, and behavioral attributes and activities that have been evolving for years is realized in this time. However, gradual decline especially in physical and cognitive abilities begins and general outlook on life is more reflective than aspirational.

* + 1. **Old Age**

In recent years, the onset of the old age feeling has been delayed by increased life expectancy, however, it is an inevitable stage of life as death approaches. The reflective pattern of adult thinking turns into a full evaluation of contribution to society throughout life, and personal feelings of having had a net positive or negative impact. Fitness, health and metabolism decrease irreversibly, and cognitive abilities have depreciated.

Physical development, can be considered the spinal cord and nervous system of the developmental body. It is the easiest to predict with respect to time, and has few variables that affect its course. The same is not true for the other areas of development, as will be outlined below.

1. **Cognitive Development**

Biological change alone cannot realize self-expression because without productivity, little societal contribution is possible. The brain, its functions, and the activities it inspires, have briefly been introduced above. Mental activity is a key component in sustaining human life from birth. Relating back to natural selection of evolution, a failure to adapt to the environment will result in extinction, therefore, to survive, humans must learn to adjust to various environments using a combination of sensation, perception, memory, thought, reasoning, and language – factors which govern environmental interaction. Sensation and perception are a the tools used to experience surroundings, memory, thought and reasoning process sensory information, and language is the vehicle for communication as well as information processing. As language is the dominant factor, our understanding of cognitive development considers it first.

**3.1 Language**

This structured system of communication begins before birth with fetal recognition of mother’s voice, and evolves rapidly through the first years of human life into spoken words. It is intended to be manipulated for listener accommodation and adequate expression of ideas, but children must be taught how to use it. The stages of language development mimic the first three stages of physical development, and have a similarly rapid rate. Language is produced and processed in the brain’s left hemisphere, at Broca’s area and Wernicke’s area, respectively. Theories of language acquisition aim to explain whether nature or nurture is the more dominant factor.

* + 1. **Operant Conditioning**

An observation of mother-infant communication in pre-verbal babbling stage. Babbling is a meaningless vocalization of phonemes by an infant mimicking their environment. Skinner suggests that when a baby vocalizes a need through babbling, a positive response from the mother will encourage future repetition of that request. The baby, through deciphering parental responses to the babbling, will assign a meaning to it, and will do so for multiple words. Consistent positive reinforcement increases language acquisition rate.

* + 1. **Nativism**

Children exhibit an early predisposition to learning language, which suggests that language is innate and unaffected by their environment. The evidence of this is spearheaded by the notion that spoken language does not exhibit all language rules but toddlers have an idea of the grammar without being taught. Furthermore, as toddlers later develop words and sentences, association of words and people or objects is specific to the child, meaning they have some idea of semantics.

* + 1. **Interactionism**

Adults have a tendency to simplify their speech in order for children to understand easily. This language is called child-directed speech and seeks to encourage simulation of conversation. As the child responds, adults may recast the response into more complex grammar for imitation – driving higher language proficiency. This idea is strongly supportive of the effect of social interaction on language.

* + 1. **Cognitive Processing Theory**

Upon further observation, neither nativism, operant conditioning, nor interactionism adequately qualify how children learn language. Learning language requires a child to have received and processed it, before producing. Social interaction may motivate language learning, but the process depends on the genetically assigned ability of the brain. When speech is first hear, Wernicke’s area activates universal grammar, initiating assigning meanings to words, storing those associations in their memory until they are recalled by thought. With motor skill development, Broca’s area begins producing tongue and lip movements which imitate previously perceived articulation. Eventually, words are produced with ease and vocabulary is allowed to grow.

The argument of nature or nurture being the more dominant influence in language acquisition shows that they are both equally responsible. One cannot work without the other effectively. In venturing to understand language learning, the components of environmental interaction have interlinked into a single theory. The remaining two areas are quite abstract in that emotions are individual occurrences, and social change largely depends on the society in question.

1. **Emotional and Social Development.**

Expression of emotion is unique to the individual, however, facial expressions and gestures can be generalized. Emotional development largely consists of personality changes, whereas social development has its main focus in interpersonal relationships. Both of these are the basis of behavior prediction, and are largely influenced by the prevailing culture within society. In observing language acquisition across cultures, it was found that crying mimicked the sounds of the language a child is most exposed to. Subsequently, it is not farfetched to align expressions of emotion with cultural norms. Society differentiates relationships, roles and responsibilities by age across the world, however, the actual assignment of roles is determined by members of that society.

“*Cultural pattern taxonomies are used to illustrate the dominant beliefs and values of a culture*.” (Samovar, Porter, McDaniel & Roy, 2013, p. 211). This classification is a comparison of extreme opposites which explains culture-specific behavior. Similarities in interpreting the meaning of gestures in cultures with similar characteristics, therefore, is evidence of the above assertion. Following similar thought, analysis of cultures and associated trajectories – socioeconomic development, emancipative values and democratization –can predict the emergent beliefs and values when a society changes. They occur simultaneously and in the same direction, and aim to maximize individual choice of life. Unfortunately, because there naturally exists an elite class who governs the society, the effectiveness of freedom of choice and associated rights depends on that group of people’s integrity. First-world countries are currently leading in the presence of all three factors, whereas, poor, African countries, due to lack of resources limiting their options and the presence of corrupt leaders, are still bogged down by largely restrictive values, and formalized but ineffective democracy – eliminating their rights to choice. This creates great disparity in behavior across regions and can lead to grave cross-cultural miscommunication, reducing the likelihood of trade, and reinforcing the lack of resources. Culture is therefore the common factor in achieving emotional and social change over periods of time.

1. **Conclusion**

Holistic development across the four main areas of life are governed by one qualitative trait, one quantitative trait, and one abstract trait – namely maturation, growth and culture, respectively. Through the above analysis, it is evident that the interaction of these three throughout life produces unique individuals, whose characteristics can be fully explained in these terms. There is no more abstract area of human life that cannot be explained or understood through knowledge of growth, maturation and culture, or some permutation of the principles which are governed by them.

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