

Growth and Development

An understanding of the nature and principles of human growth and development is very important for studying the human behaviour, which is the main area of psychological study. It is also essential for the development of personality of the child. The study of growth and development is a part of the developmental psychology, which is one of the important areas of pure psychology. Developmental psychology is a scientific study of an individual from his prenatal beginning passing through different stages of development to the end of life. Human life starts from a single fertilized cell. The constant interaction with the environment results in the growth and development of the innate capacities, abilities and potentialities of the child. Therefore, it is important that we must know what growth is and what is development and the difference between growth and development.

GROWTH AND DEVELOPMENT

Growth can be defined as an indicative of increase in bodily dimension i.e. height and weight and it is confined to quantitative changes. According to Gassell, "Growth is the function of the organism rather than of the environment. The environment furnishes the social and the surroundings for the manifestation of development, but these manifestations come from inherent inner organism and an intrinsic physiology of development. Growth is a process so intricate and so sensitive that there must be powerful stabilizing factors, intrinsic balance of the total pattern and direction of the growth trend." Growth means increase in size, height and weight. It implies growth of heart, brain, muscles and body in general. It can be easily observed and measured. According to Crow and Crow, growth connotes change in particular phase or aspect. Although any change in any aspect or part is related to other changes that are taking place within the organization.

Biological changes in structure and functioning of organism's system consist of growth, aging and maturation. Growth simply refers to biological potential such as motor activities in the infant and appearance of secondary sex characteristics in an adolescent. So when we refer to quantitative changes, it is more of growth such as increase in size, weight and aging etc. The growth in terms of quantitative changes is specific, easy to observe, infer and measure, such as

growth in physical, motor or speech area. Hence growth generally relates to biological changes that occur because of physical maturity or aging.

DEVELOPMENT

The terms 'growth' and development are used synonymously. Development stands for the changes that occur due to environmental influences on learning. It is the progressive change in the total organism. It refers to change in structural form or shape and improvement in functioning. According to Harlock, "Development can be defined as a progressive series of changes in an orderly coherent pattern towards the goal of maturity." According to this definition, there are four things in development. (i) It is progressive

(ii) There is an orderly coherent

(iii) There are series of changes. The changes include changes in size, proportions, disappearance of old features and acquisition of new features at physical, intellectual, emotional and social level. (iv) It leads to maturity.

-According to Webster's Dictionary, "Development is the series of changes which an organism undergoes in passing from an embryonic state to maturity."

- In the view of Stevenson, "Development is concerned with the study of changes in behaviour through the life span."

Anderson says, "Development does not consist merely of adding inches in one's height or improving one's ability. Instead, development is a complex process of integrating many structures and functions."

-According to Craig (1976), "Development can be defined as the changes in structure, thought and behaviour of a person which occur as a function of both biological and environmental influences. Usually, these changes are progressive and cumulative,"

Hence development can be defined as the emerging and expanding of capacities of the individual to provide greater facility in functioning such as development of motor ability. It is achieved through growth.

Development refers to interactions of person and his environmental surroundings whose after-products alter existing response tendencies in such a way as to increase (i) their strength; (ii)

the degree of differentiation; (iii) the organization of personality. Development refers to those effects upon the person's cognitive emotional systems which strengthens or one or more of them, increase their number or interrelate them in some different way. Development is confined to qualitative changes in the organism. These changes result in the form of enlarges features and acquisition of new features at physical, intellectual, emotional and social level. (iv) It leads to maturity. According to Webster's Dictionary, "Development is the series of changes which an organism undergoes in passing from an embryonic state to maturity."

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Development is broad and complex as it includes growth and atrophy both; it is not so systematic because in the later stages of life atrophy works more than growth. Development is structural as well as functional; and often results in functional efficiency and integration. Development is the result of physical maturity, learning and environmental conditions.

HUMAN GROWTH AND DEVELOPMENT

STAGES OF HUMAN GROWTH AND DEVELOPMENT

Growth is quantitative whereas Development is qualitative. Growth refers to increase in size-height, weight and the like. Development refers to changes in the desired direction – increase or decrease. (For a bulky person decrease in weight (because of physical exercises) is development whereas for a puny person increase in weight (because of physical exercises) is development. Development implies progressive change influenced by maturation and learning.

Knowledge of the stages of human growth and development will help the teacher and the educational administrator in structuring appropriate curriculum and employ suitable methods of teaching and evaluation. Based on certain common developmental characteristics, psychologists have classified the life span of the human being into the following sequential stages of growth and development.

- Prenatal (before birth)
- Postnatal (after birth)
- Infancy (upto 2 years)
- Childhood - Early (3 to 6 years) –
- Later (7 to 10 years)
- Preadolescence (11 to 12 years)
- Adolescence - Early (13 to 15 years) –
- Later (16 to 19 years)
- Adulthood - Youth (20 to 40 years)
- Middle age (41 to 60 years)
- Old age (60 and above)

Growth: Growth refers to the increase in height, weight, and body size of a person. In biology, growth is considered as the increase in the size of an organ or cell.

Development

On the other hand, development refers to the growth process where a person can develop concerning physical, mental, social, emotional, moral, etc. Developments depend upon both heredity and the Environment.

Difference Between Growth and Development

Growth	Development
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It is Quantitative in Nature	It is both Quantitative & Qualitative in Nature
The term 'Growth' refers to physical changes of an individual like an increase in height, size, length, weight, etc.	Development refers to overall changes in a physical organ or the structure that results in improved functioning of the physical organ
Growth is Purley physical Sense	Development is overall, Physical, Mental, Emotional, Social, moral, or any other
Growth is only a part of the developmental process	Development is a complex and comprehensive process
Growth is limited to a certain age it stops when maturity has been attained	Development is a continuous process starting from the time of conception and continuing until the end of life (Womb to Tomb)
Changes produced by growth can be observed and measured directly	Developmental changes that result in improved behavior or functioning cannot be measured directly
Growth focuses only on one aspect i.e increase in a child's body size	Development focuses on various aspects like interpersonal skills, and intelligence.
Growth is an external process	Development is an internal process.
Growth is structural	Development is considered a functional

Growth is influenced by the development	Development is independent it does not depend upon growth
Can be influenced by both genetic and environmental factors, such as nutrition and exercise	Is influenced by a wide range of factors, including genetics, environment, culture, and experience

Types of growth and development

There are some important points in contrast to Human Growth and Development. There youth.

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- **Physical Growth:** Physical growth refers to the changes in shape, size, height, and physical characteristics of an Individual t. Physical Growth is measurable in terms of height, weight, strength
 - **Cognitive Growth:** It refers to the development of the mind including intellectual abilities, thinking, learning, and remembering. Cognitive growth enables the children's problem-solving capacity and decision-making skills.
 - **Social and Emotional Growth:** It refers to the development of children's ability to build relationships with others, express their emotions and understand what is right and what is wrong in society. Social and emotional growth includes self-awareness, communication, and interpersonal skills.

Conclusion

In conclusion, we can summarize the above points. The term growth and Development is used comprehensively one cannot replace the other. Understanding the knowledge of Growth and development is very important for a teacher. Knowing the difference between growth and development they can maximize the children's development at various stages of life.

Principles of Growth and Development

There are different principles of growth and development, which are discussed below in detail:

1. Principle of Continuity

The development follows the principle of continuity which means that development is a continuous process. It starts with pre-natal and ends with death.

2. Principle of Integration

Development thus involves a movement from the whole to parts and from parts to the whole and this way it is the integration of the whole and its parts as well as the specific and general responses. It enables a child to develop satisfactorily concerning various aspects or dimensions of his personality.

Example: Child first starts to learn hand movement then finger movement and then learn the movement of both hand and finger together this is called integration.

3. Principle of lack of uniformity in the developmental rate

Development through a continuous process but does not exhibit steadiness and uniformity in terms of the rate of development in various development of personality or the developmental periods and stages of life. E.g. A person may have a high rate of growth and development in terms of height and weight but may not have the same pace of mental and social development.



4. Principle of individual difference

Every organism is a distinct creation. One of the most important principles of development is that involves individual differences. There is no fixed rate of development. That all children will learn to walk is universal, but the time at which each child takes his/her first step may vary.

5. Principle of uniformity pattern

Although development does not proceed at a uniform rate and shows marked individual differences concerning the process and outcome of various stages of development, it follows a definite pattern in one or the other dimension which is uniform and universal concerning the individual of a species.

6. Principle of proceeding from general to specific

While developing any aspect of personality. The child first pickup or exhibit a general response and learn how to show specific and goal-directed responses afterwards.

7. Principle of interaction between Heredity and Environment

The development of a child is a process that cannot be defined wholly based on either heredity or environment. Both play an important role in development. There are arguments in favour of both. However, most psychologists agree that an interplay of these two factors leads to development.

Where heredity decides or sets some limits on development (mostly physical), environmental influences complete the developmental process (qualitative). Environmental influences provide space for multidimensional development through interaction with family, peers, society, and so on. Growth and development are a joint product of heredity and environment.

8. Principle of interrelation

Various aspects or dimensions of one's growth and development are interrelated. What is achieved or not achieved in one or other dimensions during the gradual and continuous process of development surely affects the development of other dimensions.

A healthy body tends to develop a healthy mind and an emotionally stable, physically strong, and socially conscious personality. Inadequate physical or mental development may, on the other hand, result in a socially or emotionally maladjusted personality.

9. Principle of Cephalocaudal

Development proceeds in the direction of the longitudinal axis. Development from head to foot or toe. That is why, before it becomes able to stand, the child first gains control over his head and arms and then over his legs.

10. Principle of Proximodistal

Development of motor skills to start at central body parts to outwards. That is why, in the beginning, the child is seen to exercise control over the large fundamental muscles of the arm and then hand and only afterwards over the smaller muscles of the fingers.

11. Principle of predictability

Development is predictable, which means that with the help of the uniformity of pattern and sequence of development. We can go to a great extent, forecast the general nature and behaviour of a child in one or more aspects or dimensions at any stage of its growth and development. We can know the age at which children will learn to walk, speak, and so on.

12. Principle of Spiral versus Linear advancement

The child doesn't proceed straight or linear on the path of development at any stage never takes place at a constant or steady pace. After the child had developed to a certain level, there is likely to be a period of rest for consolidation of the developmental progress achieved till then. In advancing further, therefore, the development turns back and then moves forward again in a spiral pattern.

13. Principle of Association of Maturation and Learning

Biological growth and development are known as maturation. Biological changes involve changes in the brain and the nervous system, which provide new abilities to a child. Development proceeds from simple to complex. In the beginning, a child learns through concrete objects and gradually moves to abstract thinking. This transition happens because of the maturation.

Conclusion

The principle of growth and development is one of the most important topics in child development psychology. We as a teacher must understand the different stages and principles of growth and development so that we can teach the students according to their age, interest, skills, and needs.

Educational Implication of the Principles of Growth and Development

The knowledge of the above-mentioned principles of growth and development may prove beneficial to us in several ways described below:

- **Development is a continuous and non-stop process** at all periods and stages of human life. Therefore, we should never give up our efforts to achieve perfection in terms of development in the different dimensions of our personalities.
- **The principle of individual differences** among children reminds us to understand the wide individual differences at all periods of growth and development. Each child should be helped along the developmental; process according to their ability, strengths, and limitations.
- The principles related to **growth and development** suggest a pattern or trend for the advancement of children on the developmental path. This knowledge can help us to understand as what is often expected in terms of the right growth and development at a specific developmental stage and that we can then plan accordingly to achieve it by organizing the environmental experiences.
- The principles of **proceeding from general to specific** responses and the principles of integration help us to develop appropriate learning experiences to achieve maximum growth and development.
- Principles of **interrelation and interdependence** direct us to make every effort from the very beginning for the all-around harmonious development of the personalities of our child and caution us no to encourage the development of aspects at the cost of another.

- The principles of **spiral advancement** of development help us to make adequate arrangements for subsequent progress and consolidation of the progress achieved during specific developmental stages.
- The **cephalocaudal and proximodistal** tendencies as suggested by the principle of developmental direction help us to arrange suitable learning experiences, processes, and environmental set-ups to accommodate and help the children to grow and develop according to the trend and nature of these tendencies.
- The **principle of interaction** reminds us to recognize the joint responsibilities of heredity and environment in the development of personality. Genetic makeup is inborn and influences a limited amount of development, so we can provide a suitable environment for a child to take out their maximum growth and development.

FACTORS INFLUENCING DEVELOPMENT

Growth and development depend upon some factors, which are very important. They are described as below:

1. **Heredity:** It is considered as one of important factors of growth and development. Growth of an individual depends upon the combination of the genes which he inherits from his parent. Size, height, structure of the body, colour of the hairs and the physique are determined by the types of chromosomes of the parent. Even the intelligence, general ability and aptitude of the child are inherited by him.
2. **Food and nutrition:** Food is also the most important factor for the normal development of the child. Defective teeth, skin diseases and other health problems can be traced directly to poor diet during infancy and childhood. Balanced diet and nutrition is required for proper physical development. Balanced diet consists of carbohydrates, proteins, fats, vitamins and minerals. Care should be taken for proper balanced diet, personal hygiene, cleanliness, various diseases and measures to check these diseases.

3. Fresh Air and Sunlight: These are very important as the child must get especially during the early years of life which influence general health condition size and maturity of the child.

Physical Exercises and Activities: These are very essential for child's physical development. Sports, drills, games, gymnastics, dancing, hiking etc. should be encouraged.

5. Functioning of Glands: Ductless glands which secrete hormones in the blood vessels influence physical and mental development of the child. For example: (i) Overactive thymus gland or pineal gland will retard normal development; (ii) Pituitary glands help in the growth of the body; (iii) Parathyroid glands regulate the level of calcium present in the blood. Deficiency of calcium results in defective bone growth: Deficiency of thyroid glands produces cretins or deformed idiot. (iv) The hyperactivity of sex glands produces early sexual maturity.

6. Child rearing practices: How the child is reared and weaned, and the practices adopted by the parents also determine the growth pattern of the child. Whether the child is breast fed or bottled fed during the infancy period is the basis of the development of personality of the child later.

7. Sex Differences: Gender differences play a vital role in physical and various other aspects of personality development of the child.

8. Intelligence: Low-grade intelligence associated with retardation, high grade intelligence is associated with speeding up of development. It has been found that very bright children start walking at earlier age than idiots.

then it goes to the specific aspects. The child in any sphere of development first makes general responses and with growth he learns to exhibit more specific and goal-directed responses In the early period, a baby makes general bodily movements but as he grows, he learns to make specific movements of eyes limbs, expressions of his face in responding to different stimuli

Effects of Heredity on Growth and Development

The effects of heredity on a child's development are as follows:

Intellectual ability

Heredity is the base upon which rests an individual's intellectual ability. Each child acquires a different type of intelligence from their parents. Depending on their genetics, some children may have an aptitude for creative intelligence while some may be adept in analytical intelligence or some other type of intelligence.

On Individual Personality

Heredity is partially responsible for shaping an individual's personality. Every child is born with a different temperament. They may have different levels of patience, irritability, persistence, shyness, activeness, and the like which affects the child's adaptability to learning.

Mental health

Many mental health conditions are said to be related to genetic factors which can affect one's learning and development. Learners with mental health disorders may face problems in learning and may not be able to pay attention which can delay their learning

“genetic factors set the limit of a given trait but the environment determines how much the potential can be realized.”

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Influence of Pollution

The amount of pollution in the area in which people reside also put some effects on the physical and mental health of the child. This different kind of pollution can cause Asthma, respiratory problems, and many more.

Temperature

Some areas that are relatively hot or cold can also affect an individual's mood to be indulged in activities.

Geological Location

Certainly, the geographic location of the area also put an impact on the growth and development of that area's people. Such as, the snowfall areas are more likely to get closed in winter areas which can slow down the economy of the area in those times.

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