

1. Details of Module and its structure

Module Detail	
Subject Name	Psychology
Course Name	Psychology 01 (Class XI, Semester - 1)
Module Name/Title	An Introduction to Human Development - Part 1
Module Id	kepy_10401
Pre-requisites	Understanding of biological and environmental factors influencing behaviour.
Objectives	After going through this lesson, the learners will be able to understand the following: • To describe the meaning and process of development.. • To explain the influence of heredity, Environment and context on human development.
Keywords	Development, Growth, Maturation, Evolution, Processes of development, Lifespan Perspective, Genotype, Phenotype, Ecological Models of development

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INTRODUCTION

Go back to the earliest memories of your childhood. You will agree to the fact that you have tremendously changed over the years in many ways. Have your bodies changed? Are you able to reach the top shelf of an almirah? Were you able to do that when you were five years old?

What about changes in your thinking? Do you still believe that Santa Claus exists in real?

Which were the most significant relationships you had as a 6 year old? Has it changed now?

When we reflect about these changes in our lives, we are considering the process of human development. From conception until the moment of death, we not only change physically, but we also change in the way we think, use language, and develop social relationships. These changes occur in a person in an integrated manner. The term development is not applied to all the changes that occur in an organism. It refers to only those changes that appear in an orderly manner and stay for a longer duration of time. Any temporary change in an individual, caused due to illness or under the influence of any drug, is not considered as a part of development. Thus, **development is the pattern of progressive, orderly, and predictable changes that begin at conception and continue throughout life.** Development mostly involves changes — both growth and decline, as observed during old age. All changes which occur as a result of development are not of the same kind. Thus, changes in size (physical growth), changes in proportion (child to adult), changes in features (disappearance of baby teeth), and acquiring new features are varied in their pace and scope level.

MEANING OF GROWTH, DEVELOPMENT, MATURATION AND EVOLUTION

Distinction between Growth and Development

The changes in various aspects of an individual are mainly of two types – quantitative and qualitative. **Growth refers to the changes in the quantitative aspect** – increase in size, length, height and weight. Whereas, the term development implies the overall changes occurring in

both the quantitative as well as qualitative aspects. Therefore, development as a term carries a wider and more comprehensive meaning than the term growth.

Since growth is limited to the description of quantitative changes, its scope is confined to only those aspects which can be measured and quantified. That is why we come across descriptions such as physical growth and mental growth and rarely social, emotional or moral growth.

In comparison to growth, development as a comprehensive term describes changes in all directions – physical, mental, social or moral. The quantitative changes in these aspects are not directly observable or measurable. Therefore, when we talk of development in any dimension, we are describing and explaining the overall changes in the structure and functioning of that aspect. For example, when we study physical development, we do not aim to describe the changes in the size and proportions of the physical organs in a solely physical sense but also to point out the impact of these physical changes in terms of improvement in the working or functioning of the organs.

Thus, the term growth carries a limited and narrower meaning. It is a subsystem of the development. Growth does not continue throughout one's life, it stops when maturity has been attained while development is a continuous process.

Table : Comparison between growth and development

GROWTH	DEVELOPMENT
Quantitative changes in size, weight height etc.	Qualitative and quantitative changes in different dimensions – physical, cognitive, socio-emotional
Narrower concept - one of the subsystems of development.	Wider concept - overall changes in the individual. Growth is one of its parts.
Does not continue throughout life. Stops with the attainment of maturity.	Continuous process- from conception till death
Changes may be measured, observed and quantified.	Changes are qualitative in nature & cannot be measured in all aspects.

Maturation refers to the changes that follow an orderly sequence and are largely dictated by the genetic blueprint which produces commonalities in our growth and development.

For example, most children can sit without support by 7 months of age, stand with support by 8 months and walk by one year. Once the underlying physical structure is sufficiently developed, proficiency in these behaviours requires adequate environment and little practice. However, special efforts to accelerate these behaviours do not

help if the infant is maturationally not ready. These processes seem to “unfold from within”: following an inner, genetically determined timetable that is characteristic of the species.

Evolution refers to species-specific changes. Natural selection is an evolutionary process that favours individuals or a species that are best adapted to survive and reproduce. The evolutionary changes are passed from one generation to the next within a species. Evolution proceeds at a very slow pace. Emergence of human beings from great apes took about 14 million years. It has been estimated that the ‘Homo sapiens’ came into existence only about 50,000 years ago.

Processes of Development

Development is influenced by an interplay of biological, cognitive, and socio-emotional processes.

- Development due to genes inherited from parents, such as in height and weight, brain, heart, and lungs development, etc. all point towards the role of biological **processes**.
- The role of **cognitive processes** in development relate to mental activities associated with the processes of knowing, and experiencing, such as thought, perception, attention, problem solving, etc.
- **Socio-emotional processes** that influence development refer to changes in an individual’s interactions with other people, changes in emotions, and in personality. A child’s hug to her/his mother, a young girl’s affectionate gesture to her/his sibling, or an adolescent’s sorrow at losing a match are all reflections of socio-emotional processes deeply involved in human development.

It is important to remember that **the biological, cognitive, and socio-emotional processes are interwoven, they overlap and interact**. Thus, biological processes govern cognitive processes, cognitive processes monitor socio-emotional processes. These processes influence changes in the development of the individual as a whole throughout the human life-span.

LIFE-SPAN PERSPECTIVE ON DEVELOPMENT

The study of development according to the Life-Span Perspective (LSP) includes the following assumptions:

- i. **Development is lifelong**, i.e. it takes place across all age groups starting from conception to old age. Hence, adulthood or old age is not the endpoint of development. Each period of development has its own unique features and importance; none is of

more or less value than any other. It includes both gains and losses, which interact in dynamic (change in one aspect goes with changes in others) ways throughout the life-span.

- ii. **Development is multidimensional.** The various processes of human development, i.e. biological, cognitive, and socio-emotional are interwoven in the development of a person throughout the life-span.
- iii. **Development is multi-directional.** Some dimensions or components of a given dimension of development may increase, while others show decrement. For example, the experiences of adults may make them wiser and guide their decisions. However, with an increase in age, one's performance is likely to decrease on tasks requiring speed, such as running. In language development, the capacity for acquiring second and third languages decreases specially after early childhood.
- iv. **Development is highly plastic,** i.e. within person, modifiability is found in psychological development, though plasticity varies among individuals. This means skills and abilities can be improved or developed throughout the life-span. With an increase in age, decline in certain cognitive abilities is common. But, in a research study conducted by Willis & Schaie (1994), reasoning abilities of older adults were enhanced through retraining.
- v. **Development is influenced by historical conditions.** People belonging to a particular generation may have common developmental influences. For example, the experiences of 20-year olds who lived through the freedom struggle in India would be very different from the experiences of 20 year olds of today. The career orientation of school students today is very different from those students who were in schools 50 years ago. The technological awareness of children in present times is different from children of 50s and 60s.
- vi. **Development is the concern of a number of disciplines.** Different disciplines like psychology, anthropology, sociology, and neuro-sciences study human development, each trying to provide answers to development throughout the life-span. For example, to know what influences the intellectual development in children, we study genetics and health related factors; cultural and social impacts; role of parenting, education and experience.
- vii. **Development is contextual.** Individual responds and acts on contexts, which include what was inherited, the physical environment, social, historical, and cultural contexts. Certain occurrences have a major impact on an individual's life. For example, the life

events in everyone's life are not the same, such as, death of a parent, accident, earthquake, etc., affect the course of one's life as also the positive influences such as winning an award or getting a good job. People keep on changing with changing contexts.

FACTORS INFLUENCING DEVELOPMENT

Do you have answers to the following questions?

- Is IQ inherited or determined by early environment?
- Is there a 'criminal' gene?
- Is sexual orientation a choice or genetically determined?

What role do you think heredity or environment have in influencing human development?

The Role of Genes

Have you observed in your class that some of you are tall and some are short, colour of your hair and eyes are different, some are quiet or sad while others are talkative or cheerful. People also differ with respect to intelligence, learning abilities, memory, and other psychological characteristics besides physical characteristics. Despite these variations, no one can be mistaken for any other species: we all are homo sapiens. What causes us to be different from each other but at the same time more like each other? The answer lies in the interaction of heredity and environment.

You have already learned in Chapter 3 that the principles of heredity explain the mechanism for transmission of characteristics by every species from one generation to the next. We inherit genetic codes from our parents, which are in every cell of our body.

Our genetic codes are alike in one important way; they contain the human genetic code. It is because of the human genetic code that a fertilised human egg grows into a human baby and cannot grow into an elephant, a bird or a mouse. Genetic transmission is very complex. Most characteristics that we observe in humans are combinations of larger number of genes. You can imagine the combinations produced by 80,000 or more genes – accounting for a variety of characteristics and behaviours. It is also not possible to possess all the characteristics made available to us by our genetic structure. The actual genetic material or a person's genetic heritage is known as **genotype**. However, not all of this genetic material is apparent or distinctly identifiable in our observable characteristics.

Phenotype is the way an individual's genotype is expressed in observable and measurable characteristics. Phenotypes include physical traits, such as height, weight, eye and skin colour,

and many of the psychological characteristics such as intelligence, creativity, and personality. These observable characteristics of an individual are the result of the interaction between the person's inherited traits and the environment. You know it is the genetic code which predisposes a child to develop in a particular way. Genes provide a distinct blueprint and timetable for the development of an individual. ***But genes do not exist in isolation and development occurs within the context of an individual's environment.*** This is what makes each one of us a unique person.

What are the environmental influences?

How does the environment affect development? Imagine a child, with genotype that predisposes her/him to be introverted, in an environment that promotes social interaction and extroversion. The influence of such an environment may make the child a little extroverted. Let us take another example.

An individual with "short" height genes, even if s/he is in a very good nutritional environment, will never be able to be taller than average. This shows that genes set the limit and within that limit the environment influences development.

You know by now that parents provide the genes for the child's development. Do you know that they also play an important role in determining the type of environment their children will encounter? Sandra Scarr (1992) believes that the environment parents provide for their children depends to some extent on their own genetic predisposition. For example, if parents are intelligent and are good readers they would provide their children with books to read, with the likely outcome that their children would become good readers who enjoy reading. A child's own genotype (what s/he has inherited) such as being cooperative, and attentive is likely to result in teachers and parents giving more pleasant response as compared to children who are not cooperative or not attentive. Besides these, children themselves choose certain environments based on their genotype. For example, because of their genotype, children may perform well in music or sports and they will seek and spend more time in environments, which will enable them to perform their musical skills; similarly an athlete would seek sports-related environment. These interactions with environment keep changing from infancy through adolescence. Environmental influences are as complex as the genes we inherit.

If your class monitor is selected on the basis of being academically bright and a popular student, do you think it is because of her/his genes or the influence of the environment? If a child from a rural area who is very intelligent, is not able to get a job because of her/his

inability to express herself/himself fluently or handle computers, do you think - it is because of genes or environment?

CONTEXT OF DEVELOPMENT

Development does not take place in a vacuum. It is always embedded in a particular sociocultural context. Transition during one's lifetime such as entering school, becoming an adolescent, finding jobs, marrying, having children, retirement, etc. all are joint functions of the biological changes and changes in one's environment. The environment can change or alter during any time of the individual's lifespan.

Urie Bronfenbrenner's Contextual View of Development

VIDEO LINK: Urie Bronfenbrenner's Ecological Model

<https://www.youtube.com/watch?v=01BnvOrEDPM>

Also known as the *Ecological Systems theory* of development, this view emphasises the role of environmental factors in the development of an individual. This theory suggests that in order to fully understand human development, relationship between individuals and their environment (ecology) must be focused on. Various levels at which such relationships exists are:

The **microsystem** is the immediate environment/setting in which the individual lives. It is in these settings where the child directly interacts with social agents – the family, peers, teachers, and neighbourhood. It involves personal, face-to-face relationships.

The **mesosystem** consists of relations between these contexts i.e. the interaction between two or more microsystems. For instance, how a child's parents relate to the teachers, or how the parents view the adolescent's friends, are experiences likely to influence an individual's relationships with others.

The **exosystem** includes events in social settings where the child does not participate directly, but they influence the child's experiences in the immediate context. For example, the transfer of father or mother may cause tension among the parents which might affect their interactions with the child or the general amenities available to the child like quality of schooling, libraries, medical care, means of entertainment, etc.

Macrosystem includes the culture in which the individual lives, widely shared beliefs, laws, values, which influence all of the inner systems, and hence the child's life and development. For example, whether the child is growing up in a nuclear or joint family is influenced by the culture.

Chronosystem involves events in the individual's life course, and socio-historical circumstances of the time such as, divorce of parents or parents' economic setback, and their effect on the child.

In a nutshell, Bronfenbrenner's view is that a child's development is significantly affected by the complex world that envelops her/him – whether it be the minutiae of the conversations s/he has with her/his playmates, or the social and economic life circumstances into which s/he is born.

Research has shown that children in impoverished environments have unstimulating environment devoid of books, magazines, toys, etc., lack experiences such as visits to library, museum, zoo, etc., have parents who are ineffective as role models, and live in overcrowded and noisy surroundings. As a result of these conditions children are at a disadvantage and have difficulties in learning.

Durganand Sinha's Ecological Model

Durganand Sinha (1977) has presented an ecological model for understanding the development of children in Indian context. Ecology of the child could be viewed in terms of two concentric layers.

The “**upper and the more visible layers**” consist of home, school, peer groups, and so on. The most important ecological factors influencing development of the child in the visible upper layer constitute the:

- **home**, its conditions in terms of overcrowding, space available to each member, toys, technological devices used, etc.,
- **nature and quality of schooling**, facilities to which the child is exposed, and
- **peer group** - nature of interactions and activities undertaken with peer groups from childhood onwards.

These factors do not operate independently but constantly interact with one another. Since these are also embedded in a larger and a more pervasive setting, the “**surrounding layers**” of the child's ecology constantly influence the “upper layer” factors. However, their influences are not always clearly visible. The elements of the surrounding layer of ecology constitute the:

- i. **General geographical environment** that includes space and facilities for play and other activities available outside the home including general congestion of the locality and density of population,

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- ii. **Institutional setting** provided by caste, class, and other factors, and
 - iii. **General amenities** available to the child like drinking water, electricity, means of entertainment and so on.

The visible and the surrounding layer factors interact with one another and may have different consequences for development in different people. The ecological environment can change or alter during any time of the individual's life-span. Therefore, to understand differences in the functioning of an individual, it is important to see the individual in the context of her/his experiences.