# LEARNING AND TEACHING : THEORIES, APPROACHES AND MODELS

## CHAPTER 1: DEVELOPMENT AND LEARNING

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### The Meaning of Development

In a general sense, psychology is a science that studies human and animal behaviours, and the reasons of these behaviours.

The symbolic foundation date of psychology is 1879. In this year, Wilheml Wundt (1832-1920) established a psychology laboratory in Leipzig. Psychology is accepted to have started as a science with the establishment of this psychology laboratory. From the point that started with Wilhelm Wundt and his colleagues on, the period of consciousness has mostly been investigated through the method of introspection and the conscious of human has been tried to be analyzed.[1]

Psychology is a branch of science that aims at examining the interaction between environment, human being and behaviour. This branch of science is divided into sub-fields such as experimental psychology, social psychology, psychometric psychology and applied psychology.

Fields of Psychology

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| Experimental psy | Social psy | Psychometric psy | Applied psy |

There are a lot of sub-branches under applied psychology. One of them is educational psychology. Educational psychology is about implementing the findings of psychology in the field of education. Educational psychology mainly composes two sub-fields. These are developmental psychology and psychology of learning.

Developmental psychology is a field of psychology that examines the physical, psychological, cognitive and behavioral changes of a person from the birth to the death. Developmental psychology is one of the basic fields from which educational psychology benefits; because being aware of the developmental features of students' ages ensures an increase in the efficiency of educational period.

### Some Theories and Approaches about Development

The concept of theory can be defined as the group of predications that brings forward proposals in order to find the reasons why events take place. In a sense, theory is a plan that helps to realize some certain ideas in line with previously designed plans. At the same time, theory is a path that is taken as a basis to move and that is followed accordingly.

### Behaviorist Theories

First of all, behaviour is reaction and movements displayed by any organism in a certain situation. The concept of behaviour is mostly used for movements that can be observed from outside. The behavioral learning theories focus on how behaviours are gained. Behaviorist theories accept the idea that learning takes place by establishing a connection between the stimulant and the behaviour and that changing behaviour is possible through reinforcement.[2]

Behaviorists handle learning as a mechanical process and gives priority to objectivity. According to the behaviorists, human beings are not good or bad from birth. The experiences and environment shape a

person's personality. According to them, human brain can be compared to a black box. It is neither possible nor necessary to know what is going on in this black box. What goes into (input) and what comes out of (output) this black box is important rather than what is happening in it. Outputs are objective, can be observed and measured. Inputs and outputs can be adjusted, arranged and controlled. The senses of a person are not important, what is important is their feature reflecting to outside.[7] The pioneers of behaviorist theories are I. Pavlov, J.B. Watson, E.L. Thorndike, E.R. Guthrie and B.F. Skinner.

## Cognitive Theories

Cognition is the sum total of processes carried out by human mind in order to understand the events and situations going on around.[3] Cognition is a very comprehensive concept. Some of the activities related to mental processes that are included in the scope of cognition perceive the stimulants coming from outside, comparing these stimulants to previous information, forming new information, memorizing and remembering the gained information, evaluating the mental products in terms of logic and quality.[4]

Effective use of cognitive theories in the field of education has been increasing regularly in recent years. Cognitive theories focus on attention, perception, memory, forgetting and retrieval.[5] Thus, the focus is on internal stimulants instead of external stimulants in learning.[6]

According to cognitive theories, mental processes are important rather than stimulant-reaction connection in learning. The purpose of cognitive theories is to explain how mental processes are organized and how they work.[7]

## Some Approaches

Apart from behaviorist and cognitive theories, there are a lot more learning theories that come out also influenced by these two theories. Some of these theories are constructivism, psychoanalytical approach and humanist approach.

**Constructivist Approach:** Constructivism is a theory that explains how an individual understands and explains what she/he has learnt and that is about the nature of knowledge.[8] Constructivism is a theory of learning that is about how people start to learn and about explaining the nature of knowledge. This theory claims that people can create new understandings or they can combine things, ideas, events and activities they already know and believe in a manner of mutual interaction.[9] Knowledge is gained in line with the will of a person instead of imitation and repetition.[10] Philosophical explanations of this theory are based on J.Bruner, W. James, J. Dewey, J. Piaget and L.S. Vygotsky.

**Psychoanalytical Approach:** Sigmund Freud put this approach, also known as psychodynamic approach, forth. Some other pioneers of this approach besides Freud are Alfred Adler, Carl Jung. Unconscious and intrinsic motivators are the most basic concepts that are used to explain human behaviours. The most well known elements of this approach are hypnosis, structures of conscious (unconscious, preconscious, conscious); psychic elements of personality (id, ego, superego) and psychosexual developmental periods.

**Humanist Approach:** Gestalt school and existentialism have influenced the leaders of this approach. The pioneers of this approach are Rogers, Maslow, Sartre, Charolette Bühler, Frankl and Binswagner. They have got ideas against behaviorist and psychoanalytical approaches. The way humanist approach handles human being differentiates this approach from other theoretical explanations. A person is a value in him/her, he/she should not be turned into a tool of a certain social or labour organization. A person is responsible for himself/herself, his/her behaviours, his/her identity that he/she will shape. It is up to that person to make life worth living and meaningful. None of the people, who are all mortal, will repeat their lives. Not past or future but present is important. Science is not a goal but a tool for people. More freedom should be ensured instead of controlling people's behaviours.[11]

## Basic Concepts About Development

It is necessary to know basic concepts and principles about development in order to explain the development and developmental features of human being. There are some basic concepts about development. These concepts are human, development, period of development, critical period of development, developing, phase, time effect, growth, maturation, readiness, heredity, age, experience and learning.

**Human:** We can define human as a bio-cultural and social entity.[12] Within the framework of this definition, the first human nature is about biological dimension, the second nature is about cultural dimension and the third nature is social dimension. The biological dimension is accepted to be the basis or must for a human to be human. It is emphasized that human is a living entity that is composed of 46 chromosomes, 23 of which come from mother while the other 23 come from father and that the most important feature of human from other living entities is that human is a living creature who can think. Cultural dimension is also accepted to be sufficient for a human to be human. Human can develop his/her cultural dimension at the end of an interaction with nature. Human that is born as a biological entity grows and develops with the cultural values of the society in which he/she is raised up. The social dimension of human gets started with socialization at the end of an interaction with other humans.[13]

**Development:** It is a process that starts with conception and ends with death and during which an organism experiences changes at the end of learning, growth and maturation.

**Developing:** It is the regular and continual change of organism by means of the interaction between growth, maturation and learning.

**Development Period:** There are some steps where certain features come into prominence. Each of these steps is accepted as a period. These periods are respectively infancy, early childhood, childhood, adolescence, early adulthood and senility.

**Critical Development Period:** A person can be more appropriate to have certain learning experiences and to gain certain skills at certain periods of age. This is a period when a person is more ready to learn than the previous period, when some of his/her features are at the forefront and which can cause continuous and irrevocable results.

*For example; prenatal period is important for physical development. If a mother is subject to a bad environment or takes drug, alcohol, etc., physical development can be influenced badly.*

**Phase:** The term of phase is used to emphasize the discontinuity of an organism's development and to show the features about age and interests in developmental psychology. Each phase is experienced between certain time intervals, a phase cannot be omitted to pass directly to the next one, a certain phase is experienced between the time intervals that are a must, it is impossible to experience a phase in another time interval of another phase.[14]

**Time Effect:** This effect is called as historical time effect. Historical time effect is the effect of events and phenomena that affect the society in which individuals live in terms of individuals' development. This also means the effect of present time on an individual's development.

*For example; it is historical time effect that nowadays children learn how to use mobile phones and computers, how to play computer games and how to use the Internet.*

**Growth:** It is the physical changes in an organism that can be observed quantitatively. Growth is about the body of an individual. It means the increase in the body's height, weight and volume. Growth can take place at different rates of speed at different organs. Growth goes on healthily towards maturity by means of proper nutrition and protection from bad effects.

**Maturation:** It is the biological change that helps the organism that grows physically to carry out physical functions depending on age. In a general sense, we can call the completion of a body's developmental processes as maturation. Maturation is under the effect of both heredity and environmental factors.[15] It is a biological change experienced by the organism depending on heredity regardless of learning experiences in order for the organism to carry out the expected functions. In other words, maturation is the process of biological growth that is species-specific regardless of environmental effects.

**Readiness:** We can say that the term, readiness comprises maturation. Readiness comes out depending on maturing, namely, previous experiences and maturation. We can define readiness as the state of having the necessary sufficiency for learning to take place and for learning experience to be effective[16]. In short, readiness is a term that comprises not only the level of maturation possessed by an individual but also an individual's previous learnings, interests, attitudes, level of motivation, skills and general health condition.

It is the readiness of the individual in terms of physical, biological and psychological factors. Age, motivation and past experiences of an individual are factors that affect the readiness for a new learning.

**Heredity:** This term is used as "inheritance" or "genetic." The terms of inheritance and genetic state that living beings are still under the influence, even under the control of the materials they receive from their ancestors. In other words, heredity means that each living being possesses the same qualities as their ancestors.

*For example; millions of living beings are born on earth every day. Some of them resemble their parents from the moment that are born. Hence, a butterfly looks like a larva when it is born, or comes to the world. On the other hand, a newborn human is a baby. However, it is still just a small example of its parents who cause its birth. The resemblance mentioned here takes place when the characteristics of general structure and special behaviours possessed by each living being pass from parents to the born baby, from one generation to the next one. The state of new offspring's resemblance to the old one and the factors that ensure these features to pass the newborn can be defined as "heredity-inheritance-genetic."[17]*

**Age:** The progress of a person's development is expressed in ages. Age is the criterion to determine the features, differences, progress and changes about developmental areas and periods. Age is the most important factor that determines the formation of a person's decisiveness about his/her interests and knowledge. Age includes some progress and some experience.

*For example; with aging, people's interests and knowledge can gain certainty and decisiveness. In the first years of a human life, interests and knowledge are different and short-term. In the following time, a person concentrates on certain areas. Thus, interests and knowledge of person become definite in a sense.*

**Experience:** Experience is defined as the impression of the interaction between the individual and other individuals or environment on the individual. Experience is divided into two categories as experience in terms of education and experience in terms of living. Gained experience comprises all the activities at the end of the interaction between individuals. Lived experience, on the other hand, comprises just the activities that leave their marks on the individual and that cause a change in individual's behaviour.[18]

**Behaviour:** In a general sense, behaviour is composed of all the movements of an organism. According to the behaviorist psychologists, behaviour is the reaction of an organism to an action or the action to a reaction.

**Learning:** It can be defined as all types of changes that are permanent and that come out as a result of repetition and experiences of an individual.

## Basic Principles about Development

There are some universal principles about development. Development of all people follows these principles:

1. **Development occurs as a result of the interaction between heredity and environment:** The hereditary features of a person influence his/her physical, cognitive and many other features. However, hereditary features take shape as a result of a person's interaction with the environment and thus development occurs.
2. **Development is continuous and occurs through certain phases:** Development is a process that continues all throughout life from conception to death and it occurs through phases. Each phase becomes the basis of the next phase and each phase is fulfilled depending on the accumulations of the previous phases.
3. **Development occurs by turns:** During the critical periods of development, a field of development specific to that period comes to the forefront and accelerates while other development areas experience a lag.
4. **Development follows a predictable line:** Development can be guessed in advance, in other words, development follows a predictable line. This line is as stated below:
   a. **Development occurs from the head to the foot:** The development of an organism starts with the development of head and then it is completed by the development of body, stomach, legs and feet respectively. Apart from this, after the development of internal organs is completed, the development of body is completed.
   b. **Development occurs from inside to outside:** Development follows a direction from the center to outside. For example; first of all, internal organs develop and then skin develops.
   c. **Development occurs from the general to the specific:** Minor muscular movements of an organism develop after major muscular movements develop. After a baby can hold an object with its arms with the development of major muscular movements, it can hold an object with its hands and fingers with the development of major muscular movements.
5. **Development occurs as a whole:** Zones of development are not independent from each other they are in an interaction. A positive or negative feature in a developmental zone also influences another developmental zone.
6. **There are some different people about development:** Each person has got his/her own specific hereditary features, experiences, interaction with environment and personal qualities; because of this reason, the speed of development may also change from person to person.[19]
7. **There are critical periods in development:** An organism can be more sensitive to certain learning experiences and environmental factors at certain times. According to psychosexual and psychosocial approaches, those certain needs are not met at certain times cause the individual to stick to that period. Such individuals cannot display proficiency specific to the next developmental period and so they cannot develop sufficiently in terms of emotional and mental qualities.

## Developmental Periods and Tasks

The term of developmental task was defined and studied by Havighurst (1900-1991). Developmental tasks are developmental responsibilities that come out at a certain period of life and that bring an individual to the following level of behaviour. If a person does not fulfill developmental tasks specific to a phase, he/she cannot fulfill developmental tasks of the following phases in time and healthily and there will also be some problems and defects in the general personality development because of this reason.[20]

## Babyhood (0-2 years)

Developmental tasks of babyhood are of vital and critical importance, because these developmental tasks constitute the core of almost all the following development processes.

*Child starts to talk towards the end of this period. Together with the start of talking, child starts to gain some qualities such as expressing himself/herself, perceiving what is said to him/her and establishing social relations depending on this. Likewise, the organism gains physical balance with the start of walking. Depending on this, infrastructure for a lot of psycho-motor activities are gained and developed.*

The most important developmental tasks of this period are:
- Eating solid food
- Learning how to walk
- Establishing relations with the individuals around

## Developmental Tasks of Early Childhood – Period of Games (2-6 years)
The most important developmental tasks of this period which is also called preschool period are:
- Improving walking and speaking depending on maturation
- Gaining self-care skills such as having meal, getting dressed on his/her own, washing face
- Establishing eye hand coordination
- Learning sexual differences, starting to gain sexual identity
- Learning how to communicate with different age groups by means of taking parents as model and starting to be aware of his/her own feelings
- Starting to learn social rules and roles

## Middle childhood (6-12 years)
The most important developmental tasks of this period, which is also called as school period, are:
- Establishing attitudes for himself/herself
- Establishing groups with peers, enriching communication and interpersonal relations
- Developing three basic skills about reading, writing and maths
- Developing the appropriate role for his/her sex by means of finding a suitable model
- Starting to develop a system of conscience and values
- Personal independence, making decision alone, taking responsibility

## Developmental tasks of adolescence (12-18 years)
The most important developmental tasks of this period are:
- Accepting physical features, experiencing bodily and physical changes, making peace with the new bodily image
- Being independent and different in the family, taking and applying decisions about himself/herself
- Adopting social roles suitable for his/her sex
- Establishing mature relationships with peers of the same and opposite sex
- Getting prepared to choose a profession
- Developing the system of values and moral
- Wishing to take responsibility for and interest in social problems

## Developmental Tasks of Young Adulthood (18-30 years)
The most important developmental tasks of this period are:
- Choosing a suitable spouse
- Learning how to live with wife/husband
- Learning how to be a family and how to keep a house
- Finding a job related to his/her profession
- Fulfilling social responsibilities as a citizen
- Joining a friends-group

## Developmental Tasks of Middle Adulthood (30-65 years)
The most important developmental tasks of this period are:
- Accepting that social responsibilities increase
- Continuing life standard and income-generating financial conditions
- Continuing relationship with children and aged generation, and helping and guiding them

- Spending spare time
- Continuing life as a person integrated to the partner
- Adapting to physiological changes and aging

## Developmental Tasks of Late Adulthood (65+ years)

The most important developmental tasks of this period which is also called as the period of senility are:[21]

- Understanding and adapting to the decreased cognitive and physical power
- Adapting to retirement and decreased income
- Accepting and adapting to the loss in the family
- Adopting and implementing social roles appropriate for his/her own age
- Arranging physical and social environments where he/she feels comfortable

## Main Factors That Affect Development

It has been discussed whether heredity or environment is influential on human development. Both hereditary and environmental factors influence human development.
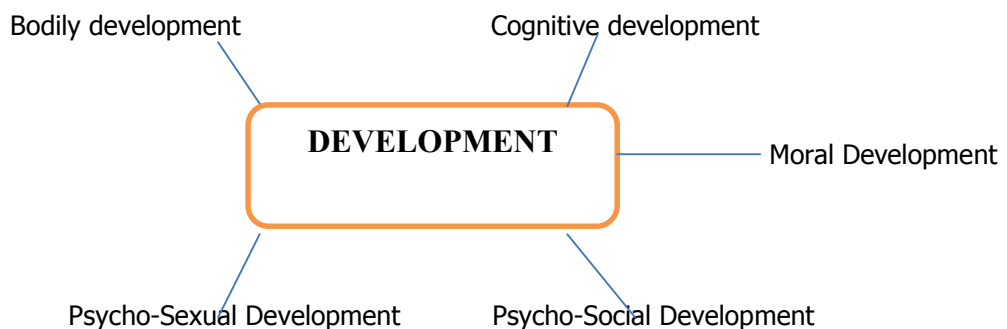


## Heredity

The genes coming from his/her mother and father together with conception determine heredity of a person. **Zygote** that is composed of 46 chromosomes 23 of come from mother and 23 of which come from father comes into existence after mother's egg unites with father's sperm. Various combinations of genes determining the features that will pass to to-be-born baby by heredity are lined in the molecule of deoxyribonucleic acid (DNA). All the hereditary features of the baby, the core of life are coded in DNA molecules. Genes coming from mother and father can be **recessive** or **dominant;** if genes are dominant, they will ensure that their features will pass to the baby whatever other parent's feature is. It is necessary that both parents possess genes having the same features for the features of recessive genes to pass to the baby. Moreover, the features received from mother and father by heredity are different from the features observed in the individual. All the qualities received from mother and father by heredity are called **genotype** (colour of eyes and hair, atc.) while observed qualities are called **phenotype** (features such as intelligence that comes from birth are shaped by the influence of environment and can be conserved from outside). Genes received from mother and father, are the factors that determine the capacity of intelligence that an individual can possess. Studies that investigate the influence of heredity and environment on intelligence show that intelligence is determined by the common effect of hereditary and environmental factors.

## Environment

Factors that arise in the prenatal birth, at the moment of birth and in the postnatal period are influential in shaping features that come with heredity. The illnesses that mother suffers, the drugs she takes, the polluted environment in which she lives, bad eating habits and having stress in the prenatal period influence the development of the fetus in a negative way. Apart from this, if the baby cannot take oxygen or has brain trauma at the moment of birth, these factors also affect the development of the baby badly. What is going on within the family, the attitude of the family, family relations, and family's socio-economical-cultural condition also affect a person's development in the postnatal period.

Parents' attitude towards the child is influential in the child's development to a great extent. Parents' past experiences, their own parents' attitude towards them play an important role in bringing up a child. If parents are strict, tyrannizer, restrictive to the child, this can hinder child to gain self-confidence and self-control. Excessive tolerance and allowance to the child can also affect the development of the child in a negative way. If a healthy relationship is established between the parents and the child, and if parents display a consistent attitude and show that they trust their child; the child can improve his/her self-confidence, self-respect and thus he/she can individualize.

Apart from all these factors, there are a lot of factors that affect a person's development such as the culture in which he/she lives, environment, relatives, school, teachers, friends, the moment of birth, divorce of parents.[22]

## Meaning of Learning

The term of learning is mostly misused conceptually. When one mentions learning, first of all, studying the information related to a curriculum or a programmed education come to everyone's mind. Thus, just the term of learning that means gaining knowledge comes to the foreground. However, we also learn an example of our experiences, feelings, verbal and non-verbal communication with other people. For example, we learn our style of perceiving ourselves, method of perceiving our self and ourselves. Even, daily habits such as having meal three or four times a day, which is a habit determined by culture, are also learnt. Almost all the things about educational interaction go under the title of learning, which is a basic concept of education.

*For example; developing one's productivity, skills, habits and supporting attitudes are dealt with under the heading of learning concept.*

The term of learning is mostly used in a narrow sense. In a general sense, learning is a method of adapting to current social condition, rules and cultural needs. A person who is open to adaptation by nature is born in a social environment. Also, parents know a lot of things, rights and wrongs, and they reflect what they have learnt, in other words, the factors that have determined their personalities and their entities to the child. However, parents are not only an individual entity. Parents also symbolize current traditions, value judgements, prejudices and social musts. They also symbolize conflicts that they could not cope with or perhaps that they have suppressed. The child confronts and identifies with all these starting from the moment she/he is born. Psychoanalysis puts forth that first learning takes place by means of identifying with parents. Continually repeated rules and prohibitions are internalized in time and after a certain period, warning and punishing parents continue their functions although they are not there. The first learning of a child is in the form of submitting to the wishes of parents and to what they symbolize. Most of what parents want is the needs of society as a whole, in other words, the needs of the class where the parents are. It should be kept in mind that the child is in the hands of parents that does not allow opposing from the moment of birth in order to understand that learning means the same as submitting at first. However, with learning, dependence on parents diminishes step by step in the long term. Parents and other educators should allow and support this independence.

Many learning psychologists have offered to define learning as a more or less permanent change of behaviour and that occurs at the end of experience.[23] The changes mentioned here do not comprise types of reaction coming from birth, maturation events or tiredness, drunkenness and other temporary states.[24]

The fact that learning psychologists define learning as a change about behaviours is not based on relation with children at first hand; this definition is rather based on experiments done with animals. In short, defining learning as a change in behaviour is, first and foremost, helps revealing exactly measurable learnings.

## Basic Concepts about Learning

It is necessary to know basic concepts in order to understand how learning occurs. The leading ones of them are act, reflex, instinct, experience, behaviour, sense, perception, attention and memory. It is useful to explain what act is at first.

## Act

This term means performance. What a person does constitutes his/her performance. A goalkeeper can be mentioned to have a high or low performance in a football match. We can define performance as a high or low level of performance.[25]

We can say that a person's performance is influenced directly by heredity and environment. Heredity comprises a person's behaviours from birth while environment comprises behaviours learnt later. We can say that inborn behaviours are divided into two. These are reflex and instinct.

## Reflex

This term is mostly used for behaviours that are displayed suddenly and immediately. We can say that a driver who can easily adapt to new and sudden circumstances has got good reflex. However, it is not enough to explain reflex in that way.

Reflex is an inborn, quite immediate, consistent and simple behaviour displayed to a certain stimulus.[26] According to this definition, behaviour must be inborn, quite immediate, consistent and simple and there must be a stimulus if we call this behaviour a reflex.

*For example, we lift our leg when we hit our knee.*

## Instinct

Instinct means a behaviour that is seen in all the members of a species and that develops not as a result of learning but as a result of maturity. This kind of behaviours is not displayed intentionally. Behaviour should have these features to be called an instinct:

- It must be inborn.
- It must be seen in all the members of a species.
- It must not be seen in other species.
- It must be a complex pattern of behaviour.

We can say that humans do not have instinct. However, humans are also known to have some instinctive behaviour. Perhaps, maternal behaviour of a woman can be thought to be an instinct at first. We can say that maternal behaviour is not an instinct, but an instinctive behaviour. Because, it has been proved by studies that the reason why women display maternal behaviour is about bio-chemical substances.

*For example, a research has proved that women who stay with newborn babies for three weeks release prolactin. When prolactin was injected to a man, the man was also observed to display maternal behaviour.[27]*

## Behaviour

We can call all types of behaviours of a person as behaviour. Behaviour cannot always be observed. In other words, behaviour can be explicit or implicit.

*For example; a person's talking, writing, blinking, waving, thinking, saddening, heart beating are all behaviours.*

Human behaviours are divided into three groups such as inborn behaviours, temporary behaviours and acquired behaviours.

**Inborn behaviours** are behaviours that cannot be changed with learning.

*For example; that a human's pupil shrinks in harsh light and grows in low light are inborn behaviours.*

**Temporary behaviours** are the ones that come out as a result of some factors such as alcohol, drug, narcotic drug, illness and that disappear after these factors disappear.

*For example, that a human talks because of high fever and alcohol can be as an example of this behaviour.*

**Acquired behaviours** are the ones that are not inborn and that are a product of learning. Behaviours that are a product of learning are generally acquired through a planned education or random domestication.

Behaviours acquired through a planned education are terminal and qualified behaviours that tried to be gained or changed at schools or institutions by means of applying a plan.

*For example; telling the definition of learning, keeping the environment clean, keeping healthy, playing a musical instrument are behaviours acquired through a planned education.*

Behaviours acquired through random domestication are behaviours acquired spontaneously without implementing a certain plan.[28]

*For example; these are the behaviours acquired as a result of interaction at a certain level at school, at home, at the cinema.*

Acquired behaviours are expected to be terminal. However, acquired behaviours may not be terminal all the time. Behaviours that are not terminal can be acquired even through a planned education.

### Sense
A person generally processes a piece of information at two levels, which are sense and perception. Sense is a general concept that shows the sensitivity of organism to internal and external stimulant events.

*For example; experiences such as brightness of light, warmth of tea, the pain of pinprick are included in sense.*

We can say that the raw material of experience is sense. However, we should also keep in mind that experience is not just composed of a series of sense. We always process our senses by means of interpreting them in our daily lives.

*For example;* we interpret series of tones as melody, a big and red cubic shape as a red house, cold and wet sense as rain.

### Perception
The process of interpreting and making senses meaningful is called perception. People perceive the world with their sense organs. So, there are perceptions related to all of the senses as visual perception or audio perception. In general, visual perception is the most dominant one in a human life. Objects come to mind when visual perceptions are in question. Perception of objects is partly based on learning. It is possible for a person to name objects and define their functions by learning. However, the basic tendency to organize stimuli into objects is the result of an inborn feature of human's organs and nerve system as well as learning. This natural ability including the perception of objects is called organizer tendencies. The most important organizer tendencies are related to separation of shape and ground, grouping and completing.

### Attention

One of the most leading features of perception is that it is selective. Sense organs of a person meet a lot of stimuli at a certain time. However, we perceive just a few of these stimuli more specifically in this period of time. In other words, people pay attention to just a few of events happening at a certain time. Then, we can say that attention plays an important role in terms of what people perceive. Attention is defined as focusing on some aspects of an experience at a certain time while ignoring the others. Attention has got a focus and a boundary area. Events are perceived specifically at the focus of attention. On the other hand, events are perceived to a lesser degree in the boundary area of attention.

*For example; you are watching a national football match on TV. While watching the match, you focus on the Turkish footballer that is taking the ball to the net of the opposing team. There may also be a lot of other footballers that try to prevent the Turkish footballer to score a goal. The footballers that try to prevent a goal are within the boundary area of your attention.*

### Factors That Affect Learning

We can divide the factors that affect learning into three groups. These are factors about learner, learning methods and to-be-learnt matter. There are also other factors that affect learning while they can be divided into different groups. The major ones of them are teacher and the learning or teaching environments. However, teacher and the learning or teaching environment do not affect learning directly. So, we can look at the factors that affect learning under three groups, which are about learner, learning methods and to-be-learnt matter.

### Factors About Learner

The factors related to the learner comprise the necessary qualities of a person needed to realize learning. These qualities of a person are species-specific readiness, maturation, level of general motivation and anxiety, transferring previous information, motivation and attention.[35]

**Species-specific readiness:** Human can learn to the extent his/her genetic structure allows. In other words, a person is prepared to do some actions while not to do some other actions.

*For example; a person or a dog cannot learn how to fly, because both people and dogs do not have the necessary structure and qualities to fly.*

Species-specific readiness means that a person has got the necessary biological qualities to acquire the expected behaviours. A person can learn just what his/her own species can learn.

**Maturation:** In general, maturation refers to biological development that takes place under the influence of heredity. The most important signal of a person's development and learning is maturation. Maturation is the product of the internal strengths that affect both the structure and functions of a person. A person should be mature at a certain level to realize learning. We can say that there are two kinds of maturation. One of them is maturation in terms of age and the other is maturation in terms of intelligence.

A person should be at a certain age to realize a good learning. In other words, a person should have a maturation of a certain age in order to learn.

*For example; a person should be about 9 months old to learn how to walk and about 2 years old to learn how to speak.*

Some people may not learn even if they reach the maturation of a certain age necessary for learning since they may not reach the necessary maturation in terms of mental processes. Maturation in terms of intelligence is generally handled together with the term of intelligence. Some psychologists accept intelligence as the criteria for learning ability.

*For example; children's speed in learning how to read is about intelligence.*

**Level of general motivation and anxiety:** A person should be motivated at a certain level to learn. The level of motivation means the degree of a person's accepting the stimuli coming from outside. The level of general motivation is very important in learning situations that necessitate complex mental processes.

*For example; we can say that a student who studies on bed has got a low level of motivation since the students tends to relax about studying.*

We can say that a very high level of motivation also prevents learning.

*For example; a highly motivated student can panic and so cannot learn.*

Both low and high levels of motivation make learning difficult. The level of motivation should be at a medium level for a good learning.

Anxiety is also important in learning just like the level of motivation. The effect of anxiety, which means a mild fear possessed without knowing what the problem is, is similar to the level of general motivation. A very high or low level of anxiety makes it difficult to learn. Although the effect of anxiety on learning depends on people, we can say that a medium level of anxiety is necessary for a good learning.

**Past experiences:** The preliminary information to be learnt also plays an important role in a person's learning. Especially adults do not start learning at a zero level since adults have a lot of past experiences in and out of school. They generally build each new learning on their previous knowledge.[36] This phenomenon which is called passing or transferring learning may have positive or negative effects.

*For example; acquiring the skill of four operations in math can make it easier to learn how to solve problem or to do shopping in daily life. Learning the word order of **subject, verb, and object** in Turkish can make it more difficult to learn the word order of **subject, verb, and object** in English.[37]*

**Motivation:** In general, motivation means the impetus that starts, directs and continues the action of a person. Motivation makes learning easier by means of effects such as lengthening the duration of participation in a certain activity, directing behaviours towards a certain purpose. So, a person should be motivated to learn more easily. Motivation is the state of gaining power to achieve certain goals. In other words, motivation is the state of gaining strength that has physiological, cognitive and affective dimensions in a person and that directs a person to do certain activities and that gives energy to a person. We can say that motivation is an important factor that makes learning easier.

*For example; there has been a study about students who have same levels of intelligence but different levels of success. In this study, it has come out that those students who have higher levels of success also have got a higher level of motivation than those who have lower level of motivation.*

**Attention:** Attention plays an important role in a person's learning. We can say that learning process starts with the process of attention. Although there are a lot of stimuli around us, we just learn the information to which we pay attention. We cannot process a piece of information without being aware of or perceiving that information. The level of motivation can affect attention. A high level of motivation can increase attention.

### Factors About Learning Methods
Another group of factors that affect learning are learning methods. The major factors about learning methods are organizing the time and duration of learning, the structure of the subject to be learnt, participation and feedback.[38]

**Organizing the time and duration of learning:** It is a well-known fact that people differentiate in organizing the time and duration of learning. While some people spend an hour a day on the subject or subjects to be learnt while others can learn if they spend two hours on certain days of the week. Such kind of learning is called learning by intermittent study. And there are some other people who learn a subject not by studying intermittently but by studying intensely. Learning by studying intensely is called overall learning. We can say that both types of these learnings are useful for people.

Those students who learn in an overall manner by means of studying intensely just before an exam are more successful at the exams. We can say that this is good for students in terms of exam point. However, overall learning may fade away after a short time. Even, it can be forgotten if the exam is delayed. We can say that learning by intermittent study is more efficient for those who want to achieve a permanent learning. Intermittent learning is more efficient especially in achieving psychomotor behaviours. Intermittent learning can be said to be more useful than overall learning when the learnt subject thought to be used all throughout life. In short, intermittent learning can be preferable for subjects thought to be used later while overall learning is preferable for subjects, which are not thought to be useful some time in life later.

**The structure of the subject to be learnt:** The structure of the subject to be learnt also plays an important role in learning. People learn something as a whole or by means of dividing it into parts. Many studies have been carried out to find out if learning as a whole or by dividing into parts is more efficient. Most of these studies have proved that learning, as a whole is superior to learning by parts. However, the subject to be learnt should have some qualities to say that learning, as a whole is more efficient than learning by parts. These qualities are that the subject should be short, meaningful and easily connectable to each other and it should be suitable for students' abilities.

There are also cases where learning by parts is certainly superior to learning as a whole. The subject to be learnt should have some qualities to say that learning by parts is more efficient. One of these qualities is that the subject should be easily divided into parts. The other quality is that the subject should be too long as a whole.

**Participation:** Studies that have been carried out in the field of learning prove that learning is an individual activity. No one can learn on behalf of any other person. So, a person should take the responsibility for his/her own learning. And this means that a person should participate in learning process efficiently. Participation means that a person interacts with the subject to be learnt and is involved in learning. Participation may not be observed directly. Quiet and passive participation may also be as effective as a clear participation in some cases. Participation is directed and affected by internal and external conditions of a person. The internal factors affecting and directing a person's participation are attention, motivation and readiness. The elements and activities in the learning environment are external factors.

**Feedback:** Feedback or the information about the results means acquiring information about an action that has been carried out. A person who gets information about how right or wrong what he/she does and says can learn more easily. A person can learn slowly if he/she does not know how much she/he proceeds during the learning process. Even he/she can learn the wrong as the right, his/her learning may be interrupted or she/he can never learn. We can say that success is the starter of new learnings.

*For example; a student who solves a problem and learns that the result is true goes on solving problems. Another student who cannot solve the same problem tries to solve the problem again if she/he sees why and where she/he makes a mistake.*

Information about the results makes a person aware of his/her mistakes, deficiencies and level of success. Being successful makes a person happy and increases the wish to learn. The information

about results is useful or not depends on a person's covering up his/her deficiencies and correcting his/her mistakes. So, correction should follow the information about the results.

## Factors About the Subject to Be Learnt

Another important group of factors that affect learning includes factors about the subject to be learnt. The subject to be learnt may be easy or difficult. That a subject is easy or difficult for a person may be related to the qualities of the subject to be learnt. The major ones of these qualities are perceptual distinguishability, meaningfulness and conceptual grouping.

**Perceptual distinguishability:** We can say that those things that are easily distinguishable from the objects and written or oral information around can be learnt more easily. It is about perception to see the thing to be learnt different.

*For example; while watching the sea, not whitish bubbles on blue water but a white sailing boat in a further distance attracts our attention. This is also true for verbal learnings. A number in digits attracts our attention more among a few meaningless words.*

We can say that a number in digits is more distinguishable perceptually than a few meaningless words. Information that is distinguished perceptually attracts a person's attention and what is going to be learnt is learnt more easily.

**Semantic association:** We can say that meaningfulness is one of the most important variables in learning verbal knowledge. The more meaningful a subject is, the easier it is to learnt this subject.
*For example; the sound **grş** that associates with "giriş, görüş, güreş" is more meaningful than the sound **gsr.**[39]*

Semantic association refers to what comes to mind while learning. If there are a lot of associations about what is going to be learnt, it can be said to be very meaningful. Semantic association of what is going to be learnt affects learning in a positive or negative way. When a word is uttered, some other words related to the uttered word should come to our mind. If not, the uttered word cannot be learnt easily and can be forgotten easily. Indeed, this can be accepted as transferring previous knowledge to new learnings.

**Conceptual grouping:** It makes learning easier to group and integrate what is going to be learnt since grouping what is going to be learnt activates a person's sense of exploring. If grouping cannot be achieved, what is going to be learnt is perceived as too much and this makes learning more difficult. Conceptual grouping can be accepted as a class comprising a lot of members.

*For example; metals, animals and jobs are each a conceptual group since each has got a lot of members. For instance, the group of metals can be divided into sub-groups such as rare metals, common metals and alloys. And each of thse sub-groups can be handled separately.[40]*

It may be easy to learn something when conceptual grouping is done and the groups are divided into sub-groups.

## SUMMARY

- The symbolic foundation date of psychology is 1879.
- Psychology studies human and animal behaviours and the reasons of these behaviours.
- All kinds of activities of an organism that can be observed directly or indirectly are called behaviour.
- Educational Psychology is mainly composed of two domains called development and learning.
- The major theories about developmental psychology are behaviorist and cognitive theories.
- Behaviorist theories claim that learning improves by means of establishing a connection between stimulus and behaviour and that change of behaviour can be realized through reinforcement.

# LEARNING AND TEACHING : THEORIES, APPROACHES AND MODELS

- According to cognitive theories, mental processes are more important than the connection of stimulus-reaction in learning.
- There are a lot more learning approaches that come out also by the influence of behaviorist and cognitive theories. Some of them are constructivism, psychoanalytical and humanist approaches.
- There are some basic concepts about development. These are human, development, developing, developmental period, critical developmental period, phase, effect of time, growth, maturation, readiness, heredity, age, experience and learning.
- Each person's development takes place with certain principles.
- Development takes place as a result of heredity and environment.
- Development is continuous and takes place through certain steps.
- Development takes place alternately.
- Development follows a predictable line.
- Development takes place as a whole.
- There are individual differences about development.
- There are some critical periods in development.
- There are some periods in a human's development.
- Babyhood comprises 0-2 years.
- Early childhood – period of games comprises 2-6 years.
- Middle childhood comprises 6-12 years.
- Adolescence comprises 12-18 years.
- Young adulthood comprises 18-30 years.
- Middle adulthood comprises 30-65 years.
- Late adulthood comprises over than 65 years.
- There are both genetic and environmental factors in a person's development.
- A change in behaviour takes place by learning. This change doesn't have to be positive; it may be positive (reading and writing) or negative (smoking and drinking alcohol).
- Learning comes out as a result of a person's own experiences, activities or reactions (repetition or experience).
- All changes of behaviour cannot be accepted as learning.
- Behaviour should be displayed through a certain period of time to be accepted as learning (it should have continuity).
- The change of behaviour should not come out as a result of factors such as illness, drug, tiredness, etc. Behaviours that are observed under the influence of a temporary factor are not learnt (for example, a drunken person's specific actions).
- Instinctive behaviours and reflexes are not evaluated as the product of learning.
- If learning takes place, it is possible to transfer the learnt behaviour to be used in other situations.
- It is not possible to observe learning itself directly. The observable quality is the performance.
- If an organism reacts to a certain stimulus differently from the previous encounter, this is learning.
- Learning is the success of a person. A person learns the necessities of life, whether they are right or wrong, through success. During the period of learning, a person learns by means of attending different establishments from birth to death on one side while he/she learns in the environment where she/he lives on the other side. What a person learns in the environment she/he lives in is as important as what she/he lives in the establishments.
- We can group the factors that affect learning under three headings. These are factors about learner, learning methods and the subject to be learnt. There are also some other factors that affect learning. The major ones of them are teacher and the environment of learning or teaching. However, teacher and the environment of learning or teaching do not affect learning directly.

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