

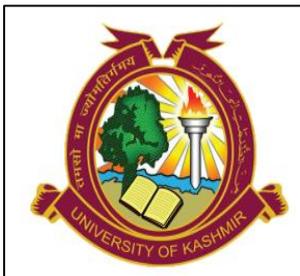
B. Ed.

PROGRAMME

Paper : Learning and Development

Course Code. : BED-15102

Semester : 1st



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Published By

Prof. (Dr.) Neelofar Khan
Director
Directorate of Distance Education
University of Kashmir, Srinagar.
Year of Publication: 2016
ISBN:



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Course Code: BED-1502

Learning and Development

Unit I

Psychology & Educational Psychology

- i) Nature, Meaning and Scope of Psychology
- ii) Nature & Meaning of Educational Psychology
- iii) Functions Educational Psychology

Unit II

Understanding Learner

Stages of Human Development

- i) Physical, Social, Emotional & Cognitive development patterns.
- ii) Stage - specific Characteristics of Infancy & Childhood
- iii) Characteristics & Problems of Adolescents.
- iv) Guidance & Counseling for adolescents

Unit III

Learning and Motivation

- i) Concept of learning & its nature
- ii) Factors of influencing learning – Personal & Environmental
- iii) Motivation – Nature, Types - Techniques of enhancing learner's motivation
- iv) S-R Theory of Learning (Thorndike)
- v) Operant Conditioning theory of learning (Skinner)
- vi) Constructivism -Vygotsky

Unit IV

Intelligence and Personality

Intelligence

- i) Nature & Meaning
- ii) Measurement of Intelligence – Concept of I.Q, Verbal and Non-verbal (One test from each category to be discussed)
- iii) Theory of Multiple Intelligences (Howard Gardner)
- iv) Structure of intellect (Guilford)

Personality

- i) Nature & Meaning
- ii) Determinants of Personality – biological & socio-culture determinants
- iii) Trait-theory of Personality (Allport)
- iv) Psycho analytic theory of Personality (Freud)
Educational Implications of the above mentioned theories.

Introduction to Paper

Dear Students,

This paper comprises of four units which highlights the conceptual understanding of the various concepts and theories associated with the class room learning and the various developmental patterns associated with the learner. The main objective of this paper is to familiarize the learners about the basic concepts of educational psychology.

Unit I: It deals with meaning and scope of psychology. It also explains the concept of educational psychology. An attempt has also been made to deliberate up on the functions of educational psychology in this unit.

Unit II: Understanding learner is the key concept in educational psychology. The second unit as such deals with the stages of human development with special reference to their educational implications. It highlights the role of parents, teachers and especially the guidance in solving the problems of adolescents.

Unit III: This unit tends to explain the concepts of learning and motivation. In dealing with the classroom learning, an attempt has been made to orient you with the various factors influencing the process of learning. The unit also deals with the theories of learning. Finally the Types and Techniques of enhancing learner's motivation have also been discussed in this chapter.

Unit IV: This unit discusses the concept of Intelligence and Personality. First of all the Measurement of Intelligence followed by the Theories of Intelligence have been discussed in this unit. The concept and determinants of personality have also been an epoch task of this unit. Finally an attempt has been made to discuss the important theories of personality followed by their educational implications.

Wish you a happy reading!

Course- Coordinator

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UNIT I

**LESSON NO: 01 NATURE, MEANING AND SCOPE OF
PSYCHOLOGY**

Lesson Structure

- 1.0 Introduction**
- 1.1 Objectives**
- 1.2 Historical Development of Psychology as a Science**
- 1.3 Schools of Psychology**
- 1.4 Meaning and Nature Of Psychology**
- 1.5 Psychology – How Thinkers View It?**
- 1.6 Scope of Psychology**
- 1.7 Basic Psychological Processes**
- 1.8 Fields of Psychology**
- 1.9 Methods of Psychology**
- 1.10 What Makes Psychology Scientific**
- 1.11 Let us Sum Up**
- 1.12 Check your Progress**
- 1.13 Suggested Readings**

1.0 Introduction

As human beings our curiosity drives us to know the reasons behind various events happening around us. Whenever we meet somebody or see someone doing something we immediately try to understand as to why this person is doing this kind of activity. Similarly we often try to understand our own experiences and behaviors in different situations. The eagerness and curiosity guide us to think as to how people are different from each other in terms of their intellect, aptitude and temperament: Why do they become happy or sad? How do they become friendly or develop antagonistic relationships? How do some people learn anything quickly while others take relatively more time? The answer to all these questions may be given by a novice as well as a person who has learned psychology. The answer of the novice can be guided by common sense but a psychologist can study the reasons behind such activities in a systematic way and can provide scientific answers to these questions which can be tested time and again. In this lesson we will try to understand the nature and scope of psychology in detail.

1.1 Objectives

After going this lesson, you should be able to:

- Explain the nature of psychology and its definition;
 - Describe the scope of psychology;
 - Elaborate the basic psychological processes; and
 - Explain the fields of psychology.
-

1.2 Historical Development of Psychology as a Science

We could go back to the first human who introspected, and reflected upon questions such as why do I feel what I feel? Think what I think? Do what I do? We could start on the continent of Africa, with the Egyptian physician Imhotep, who dissected and observed the human body. His later Greek counterpart, Hippocrates, concluded that

mental disorders were not due to demonic possession, but to physical problems with the body. He is also credited with the first physicians' oath embodying ethical principles and professional obligations. Galen, who lived in Rome during the first century of the common era, concluded that the brain and nervous system had a central role in thought and emotion. A clearer understanding of how mind and body interact had to await the foundation provided by chemistry and biology in the last hundred years.

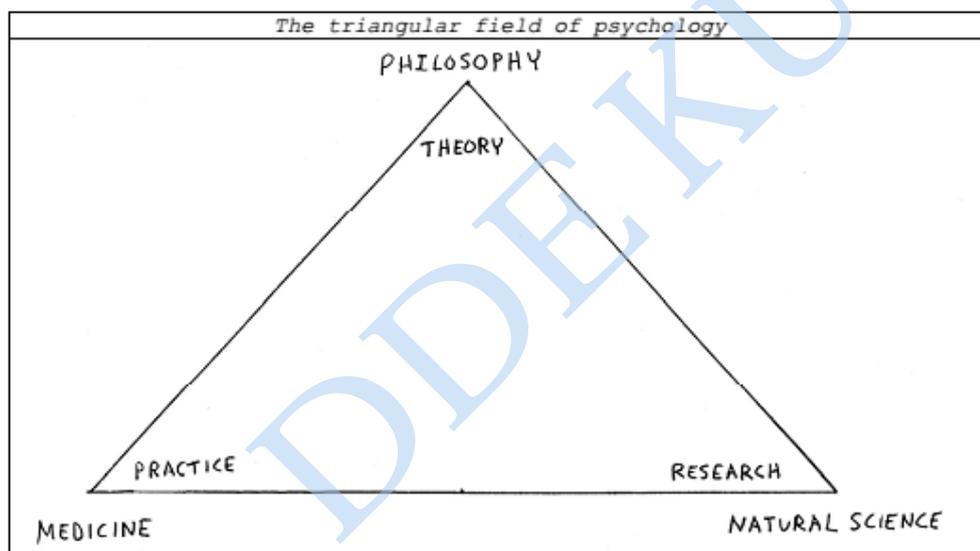
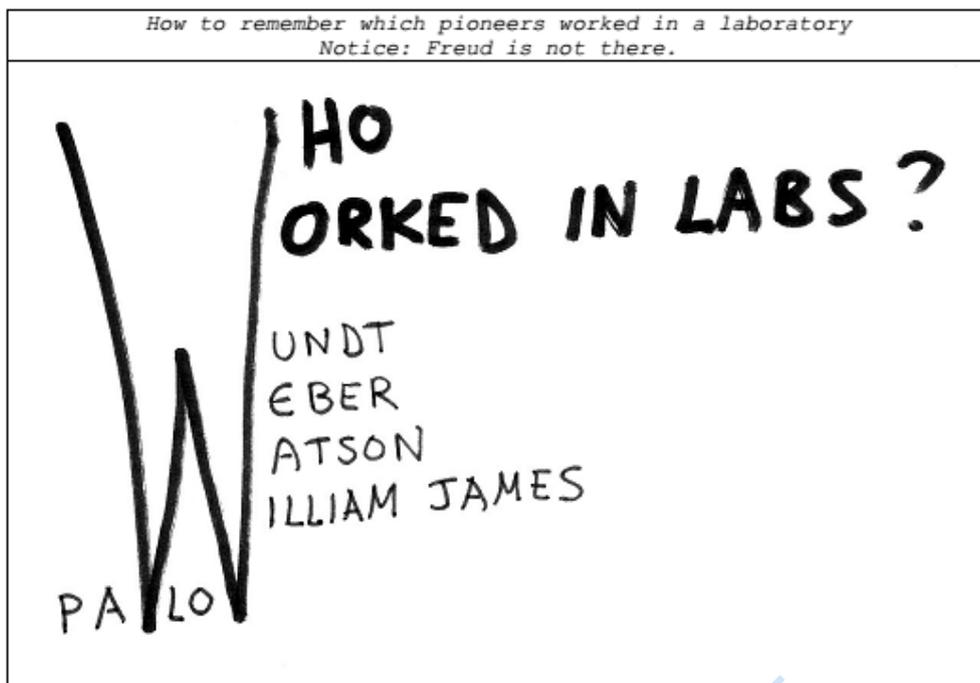
Philosophers and theologians have long addressed the question of human behavior and free will (whether people actually choose what they are going to do) or determinism (that their thoughts, emotions, and behaviors are completely determined by forces of heredity and environment). In ancient Greece, Socrates advocated the use of questioning as a method of furthering knowledge. His student, Plato, concluded that the healthy mind (soul) was governed by reason and kept the body's passions and the quest for honor in check. Plato's student, Aristotle, advocated more of an empirical approach for understanding the world, but he did not always stick to rigorous observation. For example, Aristotle used mere reasoning to conclude that the heavier an object is, the faster it will fall to earth. It took almost two thousand years before Galileo actually performed an experiment at the leaning tower of Pisa to conclude that it was an object's mass density, not its weight, which determined the rate of its descent.

Modern science is generally traced from events in Europe known as the Renaissance and the Enlightenment. British philosophers such as Bacon and Locke emphasized the importance of empiricism as the basis for science. Gradually, the empirical method advanced with the use of the telescope to observe the planets, the microscope to watch germs, and the laboratory to perform experiments on chemicals, cells, and electricity. With science comes math. In 19th century England, nursing pioneer Florence Nightingale and physician Sir Francis Galton applied statistics to health care and epidemiology: "Wherever you can, count." In Germany, physicist Gustav Fechner (say "FEKNER") developed mathematical formulas that related the brightness of light to the ability of humans to detect the stimulus. Today, we would regard much of the research of Galton and Fechner as being within the field of psychology.

The first psychology laboratory is usually credited to Wilhelm Wundt (say "VOONT") of Leipzig, Germany, in 1879. He was a physician by training, but developed an interest in investigating human behavior. He established the first university department of psychology, and the first professional journal in the field. However, much of his laboratory work would not be considered true experiments by present day standards. His main research technique was still introspection, reflecting on his own private mental activities. Wundt's school was known as German Structuralism because he maintained that the structure of the mind could be inferred from observing the structure of its thought. Wundt influenced the first generation of scientific psychologists in Europe and abroad.

On this side of the Atlantic, William James was an American physician who offered the first U.S. course in psychology in 1875 and also developed a demonstration laboratory at Harvard. He also studied the contents of his own "stream of consciousness" but acknowledged some of the limitations of introspection. His school became known as American Functionalism because he emphasized how organisms function with respect to their environments. Although James recognized the power of habits, he championed the doctrine of free will: that people are not mere billiard balls who react to their environment, but conscious organisms with the power of deciding how to respond.

More than anyone else, it was William James who put together the modern field of psychology in his definitive book, *Principles of Psychology* in 1890. The field of modern scientific psychology is actually triangular, with the three corners representing the three starting points of medicine, natural science and philosophy. Each of these left a different focus in the study of human behavior: clinical practice, laboratory research, or theoretical formulations. William James had training as a physician, a laboratory for some rudimentary research, and a growing interest in pragmatic philosophy.



Today, a good undergraduate curriculum in the field of psychology must cover all the corners of this triangle. Regardless of your future career objective within the field of

psychology, you must learn about its theories, research methods, and clinical applications. The American Psychological Association was founded in 1892 by G. Stanley Hall of Clark University. Credit for the current definition of psychology should go to John B. Watson (the founder of Behaviorism) who urged that psychology reject the purely introspective approach of studying the mind, and define itself as the science of behavior. In next page, we have tabulated the main pioneers of psychology with their academic background.

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Pioneers in Psychology				
Name	Dates	Country	Background	Methods
Weber	1795-1878	Germany	Physiology	Math Laboratory
Fechner	1801-1887	Germany	Physics	Math Laboratory
Nightingale	1820-1910	England	Nursing	Statistics Cases
Galton	1822-1911	England	Medicine	Statistics
Wundt	1832-1920	Germany	Medicine	Introspection Laboratory
Bucke	1832-1903	Canada	Medicine Literature	Introspection Cases
James	1842-1910	U.S.A.	Medicine Art	Introspection Laboratory
Pavlov	1849-1936	Russia	Medicine Physiology	Laboratory
Hall	1844-1924	U.S.A.	Divinity	Survey Laboratory
Ladd Franklin	1847-1930	U.S.A.	Psychology	Animal behavior
Ebbinghaus	1850-1909	Germany	Philosophy	Graphs Laboratory
Ramon y Cajal	1852-1934	Spain	Medicine Physiology	Laboratory
Kraepelin	1856-1926	Germany	Medicine	Cases
Freud	1856-1939	Austria	Medicine	Introspection Cases
Binet	1857-1911	France	Law Entomology	Testing
Calkins	1863-1930	U.S.A.	Psychology	Introspection
Titchener	1867-1927	England	Philosophy Physiology	Introspection
Watson	1878-1958	U.S.A.	Psychology	Laboratory
Wertheimer	1880-1943	Czech	Psychology	Laboratory

Modern psychology owes its advances to men and women who differed greatly in terms of their academic training, research methods, topics of interest, and countries of

origin. Although most of the earliest figures in psychology were white males, the field soon attracted women and persons of all ethnic backgrounds. Margaret Washburn was the first woman Ph.D. in psychology in 1894. Mary Whiton Calkins was the first woman president of the American Psychological Association in 1905. Kenneth B. Clark was the first African-American president of the American Psychological Association, over a half century ago. Today, two thirds of the students in American graduate programs in psychology are women. In foreign countries, the figure is well above three-quarters.

Many of the pioneers of scientific psychology developed a loyal cadre of followers who continued to advance the founder's research and theory. One early school was the Structuralism of Wundt. It developed in Germany, but was brought to England and the U.S. by Edward Titchener. Structuralism was based primarily upon introspection and assumed that the structure of the mind could be inferred by observing the structure of how it perceived. The approach of William James became known as American Functionalism. He wanted to focus more on how the organism adapted to its environment, but he still used introspection in the form of following his own "stream of consciousness". The more extreme environmental approach of Behaviorism rejected introspection as unscientific, and instead suggested that research be confined to laboratory studies of human and animal behavior.

		When the School Started	
		Before 1900	After 1900
W H E R E	European	Structuralism Wundt: demo labs and introspection	Psychoanalysis Freud: case studies and introspection
	American	Functionalism Wundt: demo labs and introspection	Behaviorism Watson and Skinner: serious labs Humanism Maslow and Roger: case studies and introspection
S T A R T E D			

Within psychotherapy, the first great school was Freud's psychoanalysis, with its emphasis on the unconscious determinants of behavior: sexual and aggressive drives. After 1960, the psychoanalytic hold on American psychotherapy gave way to the more Humanistic approach of Rogers, emphasizing free will, and the great reservoir of human potential and goodness.

1.3 Schools of Psychology

A. Structuralism

The ideas of Wundt formed the basis of the first school of thought (or perspective) in psychology, known as structuralism. In reality, though, it was one of Wundt's students, Edward B. Titchener, who formally established this psychological school of thought. Structuralism, as the name suggests, was centered on investigating the structure of the mind. Wundt believed that psychology should focus on breaking down consciousness into its basic elements, in much the same way a child would pull apart a toy to reveal its component parts. The idea of determining the specific structure of something so abstract and dynamic as the mind may seem absurd to many today. Yet, structuralists were confident that not only could they accomplish this goal, but that they could do so scientifically. Wundt advanced the technique of introspection as the "scientific" tool that would enable researchers to unveil the structure of the mind. Introspection involves looking inwards; reflecting on, analyzing and trying to make sense of our own internal experiences as they occur. In employing this technique, trained subjects were presented with various forms of stimuli and asked to describe as clearly and "objectively" as possible what they experienced. Reports would then be examined to determine the basic elements of consciousness. For example, if you were presented with a slice of cake, it would not be enough to simply identify the type of food before you. You would also need to explain the basic elements of the cake that you are able to sense. For example, you might describe the taste, smell, texture, colour, and shape of the cake in as much detail as possible.

Structuralism played a significant role in shaping the field of psychology during its formative years. Wundt and his followers helped to establish psychology as an independent experimental science and their emphasis on scientific methods of inquiry remains a key aspect of the discipline today. Nevertheless, structuralists could not escape criticism. Despite their noble attempt at scientific investigation, introspection was less than ideal because no two persons perceive the same thing in exactly the same way. Subjects' reports therefore tended to be subjective and conflicting. Some of the fiercest criticisms of structuralism came from the person like William James, one of the leading proponents of the functionalist perspective.

B. Functionalism

From the point of view of American scholar William James, structuralists were sorely misguided. The mind is fluid, not stable; consciousness is ongoing, not static. Attempts to study the structure of the mind would therefore be futile at worst and frustrating at best. A more fruitful endeavor, they argued, would be to study the *function*, as opposed to the *structure*, of the mind. Function in this sense can mean one of two things – first, how the mind operates – that is, how the elements of the mind work together – and second, how mental processes promote adaptation. Clearly influenced by the teachings of Charles Darwin and the principle of natural selection (survival of the fittest), James believed that mental processes serve vital functions that enable us to adapt and survive in a changing world. Thus, while the structuralists asked “what happens” when we engage in mental activity, the functionalists were more concerned with “how it happens” and “why.”

Functionalism contributed greatly to the development of psychology. It extended both the subject matter of psychology as well as the range of methods used to acquire data. For example, the functionalists' emphasis on adaptation led them to promote the study of learning since this is believed to improve our adaptability and chances of survival. Their concern with “why” certain mental processes occur also meant that they did extensive work on motivation. Functionalists are also credited with bringing the study of animals, children and abnormal behaviour into psychology, as well as an emphasis on

individual differences (Hergenhahn, 2009). In addition, while the structuralists established psychology as a pure science, the functionalists broadened this narrow focus by also concentrating on the practical application of psychology to real-world problems. As it relates to research methods, functionalists added to the existing repertoire by utilizing mental tests, questionnaires and physiological measures, in addition to introspection (Schultz & Schultz, 2011).

Nevertheless, functionalists had their share of flaws. Like structuralists, they relied heavily on the technique of introspection with all the shortcomings previously mentioned and were criticized for only providing a vague definition of the term “function.” Despite repeated verbal attacks aimed at each other, neither structuralism nor functionalism remained at the forefront of psychology for very long. Both made significant contributions to psychology but neglected one important influence on human thought and behaviour – the unconscious. Here is where Sigmund Freud made his great début.

C. Psychoanalysis

Mention the word psychology, and few persons would fail to recall Sigmund Freud. Like the structuralists and functionalists before him, Freud believed in studying covert behavior, but unlike his predecessors, Freud was not content with examining only conscious thought; he dived head-first into the unconscious. Freud compared the human psyche to an iceberg – only a small portion is visible to others with most of it lying below the surface. Freud also believed that many of the factors that influence our thoughts and actions lie outside of conscious awareness and operate entirely in our unconscious. Psychology therefore needed to study these unconscious drives, motives and impulses to arrive at a more complete understanding of the individual.

Not all modern psychologists subscribe to Freud’s psychoanalytic theory but none can deny the significant impact that this man has had on psychology. He opened up whole new frontiers in psychology and proposed one of the most comprehensive theories of personality ever written, complete with explanations of how the unconscious mind works and how personality develops in the early years of life. Many later theorists were

influenced directly and indirectly by Freud as they either built on, modified or reacted to his sometimes controversial views. Freud's work led to the development of the first form of psychotherapy – one which has been modified and used by countless therapists throughout the history of psychology. Even all this, to use Freud's analogy, is just the very "tip of the iceberg" as far as his contributions are concerned.

No other psychological school of thought has received as much attention, admiration and criticism as Freud's psychoanalytic theory. One of the biggest criticisms is that his theory falls short of being scientific as many of his concepts are not testable. Freud also failed to recognize how experiences after childhood contribute to personality development and focused mainly on psychological disorders rather than more positive, adaptive behaviours (Burger, 2011).

D. Behaviourism

Despite their differences, structuralism, functionalism and psychoanalysis all shared an emphasis on mental processes – events that are unseen to the naked eye. John B. Watson, a staunch supporter of behaviourism, strongly objected to this approach and prompted a revolution in psychology. Watson was an advocate of scientific scrutiny but for him, covert behavior, including mental processes, could not be studied scientifically. The emphasis, from his perspective, should only be on overt or observable behavior. Behaviourists believed that human behavior can be understood by examining the relationship between stimuli (events in the environment) and responses (observable behavior). They saw no need to employ subjective techniques such as introspection to infer mental processes over which even trained subjects and researchers could not agree. What was once the study of the mind thus became the study of observable behaviour.

B.F. Skinner, another famous behaviourist, supported Watson's view by advancing the idea that human behavior can be explained by reinforcement and punishment – observable, environmental factors – with no need to consider inner mental processes. Later behaviourists adopted a more balanced view of matters, embracing the study of both overt and covert behavior. These became known as cognitive behaviourists.

Watson's call for greater objectivity, radical as it was, greatly propelled psychology along the path to become a science rather than a mere body of philosophical thought (Benjafield, 2004, cited in Coon & Mitterer, 2010). Many of the learning theories used by psychologists today were also born out of the behaviourist school of thought and are frequently applied in behavior modification and the treatment of some psychological disorders (e.g. phobias). Nevertheless, the strict behaviourist view of Watson was in no way superior to the narrow emphasis of structuralists and functionalists on mental life alone. Indeed, "many aspects of human experience (e.g. thinking, intrinsic motivation, creativity)...lie outside a strict behavioural definition of psychology" (Walters, 2002, p.29). These too must be studied in order to gain a more complete understanding of the individual. This was one of the key arguments of another emerging school of thought known as Gestalt psychology.

E. Gestalt Psychology

The word "gestalt" means "form, pattern or whole." Gestalt psychologists believed that psychology should study human experience as a "whole," not in terms of separate elements as the structuralists would contend. Their slogan, "the whole is greater than the sum of its parts" conveyed the idea that meaning is often lost when psychological events are broken down; only when these pieces are analyzed together and the whole pattern is visible do we find true meaning in our experiences. To use an example, imagine breaking apart the words you are now reading into individual letters and scattering them as you wish across the page. Would you be able to discern anything meaningful from them? Quite likely, you wouldn't. Only when the letters are properly combined to form words and then structured into sentences do you grasp any true meaning. The "whole" then becomes something different, something greater than the accumulation of its "parts."

Gestalt psychologists, such as Max Wertheimer, did extensive work on various aspects of cognition, including perception, problem-solving and thinking. Additionally, their insistence on studying individuals and experiences as wholes is still preserved in psychology today. Their work also led to the emergence of a form of psychotherapy widely practiced by modern psychologists.

F. Humanistic Psychology

With the rise of each school of thought mentioned previously, the face of psychology was gradually taking shape. Yet, not all were satisfied with the way things were progressing. Foremost among these were the humanistic psychologists, such as Carl Rogers, who were uncomfortable with the highly deterministic view of two of the major forces in psychology – psychoanalysis and behaviourism. Determinism is the idea that our actions are controlled by forces beyond our control. For the psychoanalysts, these forces are unconscious; for the behaviourists, they exist in our environment. Humanistic psychologists, however, viewed humans as free agents capable of controlling their own lives (as opposed to being controlled), making their own choices, setting goals and working to achieve them. Humanism asserted a positive view of human nature, stressing that humans are inherently good. A unique form of therapy also emerged out of this school of thought, with emphasis on helping people to achieve their full potential. This differed greatly from psychoanalysis which only focused on reducing maladaptive behavior.

School	Start	Major Figure/s	Studies	Branch	Research
Structuralism	19 th C	Wundt Titchener	Perception	Experimental	Demo labs
Functionalism	19 th C	James Angell	Adaptation to environment	Experimental	Demo labs
Psychoanalysis	19 th C	Freud	Unconscious drives of sex and aggression	Clinical	Cases
Behaviorism	20 th C	Pavlov Watson Skinner	Conditioned behaviors	Experimental	Serious labs
Humanistic	20 th C	Adler Rogers Maslow	free will	Clinical	Cases

1.4 Meaning and Nature of Psychology

“Psychology has a long past but only a short history.” With these few words, Hermann Ebbinghaus, one of the great thinkers in psychology, aptly captured the essence of this field’s development. Since time immemorial, men and women have pondered over questions that are psychological in nature. From the early Egyptians to the ancient Greek philosophers, there has been no letup in efforts to understand human thought and behavior. Yet, in spite of its long past, the formal history of psychology dates back only 133 years to 1879 – the year when Wilhelm Wundt opened the doors of the first psychology laboratory in Leipzig, Germany. As a result of this significant move, Wundt is widely regarded as the founder of psychology. Yet, this was just the beginning of Wundt’s contributions to the field. He went on to become the first of several spirited speakers to engage in an ongoing debate over what should be the focus of psychology.

Etymologically, the term ‘Psychology’ comes from two Greek words ‘Psyche’ which means ‘mind’ or ‘soul’ and ‘logos’ which means the study of. Therefore in Greek, the original meaning of psychology means “the study of mind or soul”. Mind or souls are elements believed to differentiate innate objects and plants from animals and human beings. But now psychology is no more considered as a science of mind or soul. It has moved away from this focus and established itself as a scientific discipline which deals with the various processes and behaviour of organism. Most of the contemporary psychologists agree on a definition of psychology as the scientific study of behaviour and mental processes of organism. There are three key terms in the above definition of psychology which have been clarified below: **Scientific study** means using techniques such as observation, description, and experimental investigation to collect information and then organizing this information. **Mental processes** refer to private and cognitive process such as attention, perception, remembering (memory), problem-solving, reasoning, decision-making, feelings, thinking, motives etc. **Behaviour** refers to all the actions or reactions of an organism (person or animal) in response to external or internal stimuli. The behaviour of an individual, in a broad sense, refers to anything the individual

does. According to Leagans (1961), behaviour refers to what an individual knows (Knowledge), what s/he can do (skill – mental or physical), what s/he thinks (attitude), and what s/he actually does. Behaviour may be simple or complex, short or enduring. Human behaviour may be *overt* (expressed outside) or *covert* (expressed inside). While symbolic adoption is an example of covert behaviour, use adoption is an example of overt behaviour. Both overt and covert behaviour can be measured.

Psychology is best defined as the “scientific study of behavior in humans and animals.” Behavior is what people and animals do: e.g., what a person says about last night's dream, and how long it takes a rat to run a maze. Dear students you might think that psychology was the “study of the mind” due to the fact that the prefix ‘psyche’ is Greek for mind, soul, spirit, and the suffix ‘ology’ refers to the study of something. Almost a hundred years ago, John Watson decided that psychology should be a science: not just a vague and introspective reflection on our own thoughts and feelings. Watson urged that psychology be defined as the scientific study of behavior.

During earlier times it was considered as a discipline which deals with the study of soul. In India the study of such questions was the main concern during Vedic and Upanishadic period. Various aspects of mental processes were analyzed. Subsequently the schools of Yoga, Samkhya, Vedant, Nyaya, Buddhism, and Jainism provided detailed accounts of mind, mental processes and methods to control mind. In India, it started at Calcutta University in 1916 with establishment of the Department of Psychology.

In the western world, the formal beginning of psychology as an independent discipline goes back to 1879 when Wilhelm Wundt established the first experimental laboratory at the University of Leipzig, in Germany. Since then the growth of psychology has covered a long journey. Today it is one of the very popular subjects among social sciences. It studies all the shades of experiences, mental processes and behaviours. A comprehensive analysis of all these aspects provides a scientific understanding of human nature. In the following sections we will try to understand all the components which collectively define psychology:

- A. Study of experience:** Psychologists study a variety of human experiences which are mainly personal or private in nature. They may range from experiences of dream, conscious experiences at different stages of life and experiences when the consciousness is altered through meditation or use of psychedelic drugs. The study of such experiences helps the psychologist to understand the personal world of the individual.
- B. Study of mental processes:** Psychology as the study of mental processes tries to investigate the activities happening in the brain which are primarily non physiological in nature. These mental processes include perception, learning, remembering and thinking. These are internal mental activities which are not directly observed but inferred from the behavioural activities of the person. For example, we can say that somebody is thinking if he or she displays certain activities related to finding solution to a mathematical problem assigned to him or her.
- C. Study of behaviour:** The range of behaviours studied in psychology is very broad. It includes simple reflexes (e.g. eye blinking), common response patterns such as talking to friends, verbal reports about feelings and internal states and complex behaviours such as handling computers, playing piano and addressing a crowd. These behaviours are either observed directly through naked eyes or are measured through instruments. They are generally exhibited verbally or nonverbally (e.g. facial expression) when an individual reacts to a stimulus in a given situation.

Thus in psychology the main unit of investigation is the individual human being and his or her experiences, mental processes and behaviours.

NOTE

- It is important to note that psychology is a science because its methods of studying behavior are based on observation and experimentation, an approach commonly used in natural science such as physics and chemistry.

1.5 Psychology – How Thinkers View It?

- **Woodworth:** Psychology is the science of the activities of individual in relation to the environment
- **Watson:** Psychology is the positive science of behaviour.
- **Cruze:** Psychology is the science of human behaviour and experience.
- **Guilford:** Psychology is the science of mental activity of an organism.
- **Charles E. Skinner:** Psychology deals with the responses to any and every kind of situation that life presents. By responses or behaviour is meant all forms of processes, adjustments, activities, and experiences of the organism.
- **Crow & Crow:** Psychology is the study of the human behavior and the human relationships.

An Analysis of above definitions gives the following picture of psychology:

1. **Psychology studies the mental processes.** Mental processes are the activities largely taking place in brain. However, they cannot be considered as purely physiological or bodily activities. They are related to not only the mental representations and neural activities taking place in the brain but are significantly linked with the objects, events, and activities existing in the outer world.
2. **Psychologists are interested in the study of the experiences of the people.** Psychologist studies the personal experiences such as dreams, sleep or conditions in which consciousness is alerted or any experience which one has in everyday life.
3. **Psychology deals with behavior.** Psychologist attends to all forms of behaviour. The behaviours may be of short or long duration, simple or complex, verbal or motor, overt or covert.
4. **Psychologists use scientific methods in their studies.** Psychologists use scientific methods for studying mental processes, experiences and behaviours.

1.6 Scope of Psychology

Psychology is chiefly concerned with human behaviour. Anything that has a direct bearing on the behaviour of an individual can be included in the scope of psychology. Scope of psychology includes its fields of study. Some of the major fields or areas of psychology are discussed below:

- 1. Developmental processes.** It deals with the development of perception, cognition, language, skills, personality and social relationships of an individual. It also tells us about the stages of growth, principles of growth and factors of growth.
- 2. Cognition.** Cognitive psychology deals with conscious and unconscious mental processes: sensation and perception, conditioning and learning, attention and consciousness, sleep and dreaming, memory and forgetting, reasoning and decision making, imagining, problem solving, and language.
- 3. Comparative physiological psychology.** It deals with the study of similarities and differences between the behaviour of various animals.
- 4. Abnormal psychology.** It seeks to describe, explain, predict and control behaviours that are considered strange or unusual. Its main focus is on classification, assessment, treatment, and prevention of mental disorders.
- 5. Personality.** All that is discussed in psychology is ultimately concerned with the psychological concept of personality. Personality can be understood as an umbrella enveloping all the aspects of psychology related to human behaviour.
- 6. Clinical and counseling psychology.** Clinical psychologist is a trained practitioner who diagnoses and treats psychological disorders. Counselor helps those with mild problems of social and emotional adjustments.
- 7. Cross-cultural and cultural psychology.** It is the study of the ways in which social and cultural forces shape human behaviour and how they too in return are shaped by human behaviours.

- 8. Education and learning process.** This field is concerned with all aspects of educational problems like learning, teacher training, classroom situation, counseling of children etc. Psychology also studies meaning of learning, theories, factors and principles of learning.
- 9. Environmental psychology.** This field deals with the interaction between the physical world like noise, heat, humidity, pollution, and crowding etc and human behaviour.
- 10. Industrial and organisational psychology.** It studies the principles of psychology to the work place. It tries to investigate the factors that affect the people working in an organisation.
- 11. Social psychology.** It attempts to understand the nature and causes of individual behaviour and thought in social situations.
- 12. Psychological assessment.** It deals with assessment of aptitude, intelligence, personality, attitude, values and many other psychological characteristics.
- 13. Other fields.** Other fields are military psychology, forensic psychology, rural psychology, managerial psychology, political psychology etc.

1.7 Basic Psychological Processes

While studying behaviour it is one of the most important tasks for psychologists to understand the processes which collectively influence a particular behaviour. These psychological processes are:

1. **Sensation:** It refers to our awareness about various stimuli which we encounter in different modalities such as vision, hearing, touch and taste.
2. **Attention:** During attention we selectively focus on a particular stimulus among many stimuli available to us. For instance while listening to a lecture in the classroom we attend to the words pronounced by the teacher and, try to ignore the other stimuli present in the classroom, such as noise made by the fan.

3. **Perception:** In the case of perception we process information and make out the meaning of the stimuli available to us. For example, we look at a pen and recognize it as an object used for writing.
4. **Learning:** It helps us acquiring new knowledge and skills through experience and practice. The acquired knowledge and skills further bring a relative change in our behavior and facilitate our adjustment in varied settings. For example, we learn language, riding a bicycle and applying mathematical skills to solve various problems.
5. **Memory:** The information we process and learn is registered and stored in the memory system. Memory also helps us to easily retrieve the stored information when it is required for use. For example, writing the answers in the examination after studying for the paper.
6. **Thinking:** In the case of thinking we use our stored knowledge to solve various tasks. We logically establish the relationships among various objects in our mind and take rational decision for a given problem. We also evaluate different events of the environment and accordingly form an opinion.

1.8 Fields of Psychology

During its journey of more than a hundred years, psychology as a field of enquiry has grown in many directions. In contemporary times a number of specialized fields with focused area of application have developed. The emergence of different fields in psychology indicates the importance and relevance of these areas in our daily life. In this section we will briefly learn about some of these fields.

- **Abnormal Psychology:** This branch of psychology tries to describe, assess, predict and control those categories of behaviours which are considered as unusual and non-normative. It also deals with various categories of psychological disorders which affect the mental health of the individual. It assesses abnormality in the individual through standardized psycho-diagnostic tools and suggests problem specific treatment.

- **Cognitive Psychology:** It deals with acquisition, storage, transformation and application of information the individual uses to understand and interpret events happening around him/her.
- **Clinical and Counseling Psychology:**
 - Clinical psychology is primarily concerned with diagnosis and treatment of various psychological disorders. A clinical psychologist is trained in psychotherapeutic techniques which are used to treat people suffering from psychological disorders. They are employed in hospitals and clinics dealing with mental health problems. The counseling psychologist deals with mild problems pertaining to adjustment in social and emotional life, and provides specialized services to deal with marital problems, stress oriented problems and career choice.
- **Educational Psychology:** This field of psychology is mainly concerned with academic performance. It studies the role of various factors which influence learning processes in classroom setting. It focuses on assessing the aptitude, skills and intellectual potential of the students and evaluating their performance. An educational psychologist also helps students to overcome learning difficulties.
- **Environmental Psychology:** This field is concerned with the study of interaction between physical environment and human behaviour. It studies the impact of noise, heat, humidity, pollution and crowding on human performance. It also focuses on the impact of physical environment on psychological health of individuals.
- **Health Psychology:** This field focuses on the impact of various psychological factors (e.g. stress) on the onset progress and treatment of illness. It also deals with various life style diseases such as hypertension, coronary heart disease, cancer and diabetes.
- **Organizational Psychology:** This field is concerned with application of psychological principles and models to study the selection and performance of employees in organizational settings. It also studies the concepts of leadership, motivation, job satisfaction and performance appraisal.

- **Developmental Psychology:** This field is concerned with the study of various physical and psychological factors which influence the systematic changes which the individual experiences across the different stages of life.
- **Emerging Fields:** In addition to the fields mentioned above a number of new areas have emerged. Some of these fields are sports psychology, military psychology, aviation psychology, forensic psychology, peace psychology, neuropsychology, political psychology, feminist psychology and positive psychology.

Fields of Psychology			
Specialty	Proportion	Where they work	Activities
Clinical	about half	Private Practice Clinics, Hospitals, universities	Diagnosis Psychotherapy
Cognitive	small but growing	Universities	Basic Research
Community	small but growing	Government, Universities	Applied Research
Comparative	small but growing	Universities	Basic Research
Consumer	small but growing	Corporations Private Practice	Applied Research
Counseling	a tenth	Private Practice Clinics Hospitals Universities	Counseling
Cultural	small	Universities	Basic Research Applied Research
Developmental	small but growing	Universities	Basic Research Applied Research
Educational	small but growing	Schools Universities	Applied Research
Engineering	small but growing	Corporations Universities	Applied Research
Environmental	small	Universities	Applied Research
Forensic	small but growing	Law Enforcement	Applied Research
Gender	small	Universities	Basic Research
Health	small but growing	Hospitals Universities	Applied Research
Industrial/ Organizational	small but growing	Corporations Private Practice Military	Applied Research

Learning	small	Universities	Basic Research
Medical	small but growing	Hospitals Universities	Applied Research
Personality	small	Universities	Basic Research
Political	small	Universities Campaigns	Applied Research
School	small but growing	Schools Universities	Applied Research
Sensation and Perception	small	Universities	Basic Research
Social	small	Universities	Basic Research
Sports	small	Sports Teams	Applied Research

1.9 Methods of Psychology

A. Experimental Method

Experimental method is not the original method of psychology. It has been borrowed from sciences. According to Garret, experiment is the question asked systematically. In this method the experimenter starts with the problem. He tries to solve the problem through a certain procedure. According to Wilson, an experiment is a consciously directed purposeful observation under controlled conditions. In this method all conditions or variables affecting behaviour are kept unchanged (or controlled). Only one specific condition (i.e., independent variable) is changed and conclusions are drawn after the completion of the experiment.

Procedure/steps of experimental method: A number of steps are needed for conducting experimental research. The major steps are given below:

1. **Choosing a problem.** The first step is to choose a problem. The problem should be an important one. It should be such as can be solved by experimental research.
2. **Survey of related literature.** We have to make a survey of related literature so that our perception about the problem becomes clear.
3. **Statement of the problem.** The problem is to be stated clearly. The important words are explained.

4. **Forming hypothesis.** We have to form the hypothesis. Hypothesis is an intelligent guess. Suppose our hypothesis is “Punishment is necessary for learning”.
5. **Finding out variables.** We have to find out the independent variables and dependent variables. Independent variable is that variable which is the cause and the dependent variable is that variable which is the effect. In our hypothesis shown above, punishment is independent variable and learning is dependent variable.
6. **Administering independent variables.** Independent variable is to be administered according to needs of the experiment.
7. **Collection of data.** The data are collected after the test is given.
8. **Analysis and interpretation.** The data are analysed. They are put in different categories. They are also interpreted. Without interpretation data are meaningless.
9. **Acceptance or rejection of hypothesis.** On the basis of results, we either accept the hypothesis or reject it. sometimes we partly accept and sometimes we partly reject the hypothesis.
10. **Generalization.** Lastly we make generalization.

Merits:

1. This method is exact.
2. The procedure can be repeated and the results can be verified.
3. This method has helped psychology in becoming a science.
4. It finds wide application in almost all the branches of psychology.
5. As it is pre-planned, the experimenter is well equipped to make accurate observations and arrive at valid conclusions.
6. The experimenter can create and control conditions himself.

Demerits:

1. This method deals with artificial situations. It mostly solves those problems which are limited to laboratory setting.

2. In psychology we are dealing with the behaviour of a man. It is very difficult to control his behaviour. This makes the results of the experiment unreliable.
3. It is very difficult to secure the cooperation of the subject.
4. All variables cannot be adequately controlled.
5. It is lengthy and time consuming.
6. There is great gulf between life and laboratory.

B. Observation

Observation is the process in which one or more persons observe what is accruing in some real-life situation, and they classify and record pertinent happenings according to some planned scheme. It is used to evaluate the overt behaviour of individuals in controlled and uncontrolled situations.

Kinds of observation

Observation may be either participant or non-participant.

1. **Participant or non-participant observation.** In the participant observation, the observer becomes more or less one of the groups under observation. In such situations, the observer will be in sight of the person being observed and may actually take part in some activity with the observed individual or group. In non-participant observation, observer takes a position where his presence is not disturbing the group. He may follow in the detail the behaviour of one individual or may describe one or two behaviour characteristics of dozen or more individuals.
2. **Structured or unstructured observation.** Unstructured observation is mainly associated with participant observation and it is often an exploratory technique. The structured observations are much too formal and they are designed to provide systematic description to test casual hypotheses. Structured observations are executed in controlled situations like classroom or laboratory settings. In the unstructured observations, it may not be possible to categorize behaviour in advance of observation. Instead of using pre-determined categories, the observer considers aspects of behaviour in terms of their context or in situations of which they are part.

Steps involved in observation. Observation is to be carried out in following steps:

1. Planning for observation. Planning is the first step of observation. The process of observation is to be planned so that we get reliable and valid results. According to Good (1966, p. 244-245) planning for observation includes the following factors:

- An appropriate group of subjects to observe.
- Selection and arrangement of any special condition for the group.
- Length of each observation period, interval between periods, and number of periods.
- Physical position of the observer and possible effect on the subject or subjects.
- Definition of specific activities or units of behaviour to be observed.
- Entry of frequencies or tallies in the record, as a total for the entire observation period or by sub-division of time within the observation period.
- Scope of observation, whether for an individual child or for a group.
- Form of recording, including consideration of mechanical techniques and such quantitative factors as number, time, distance and spatial relationships.
- Training of the observer in terms of expertness.
- Interpreting of observations.

2. Execution of observation. An expert execution of observation includes:

1. Proper arrangement of specific conditions for the subject or subjects to be observed.
2. Assuming the proper role or physical positions for observing.
3. Focusing attention on the specific activities, or units of behaviour under observation.
4. Handling well the recording instruments to be used.
5. Utilizing the training and experience fairly well in terms
6. of making the observation and recording the facts.

3. Recording and interpreting the observation. The recording of the observation data may either be simultaneous or soon after the observation. In the former case, the

observer goes on recording his observation data simultaneously with the occurrence of the phenomena observed. In the latter case, the observer undertakes to record his observations not simultaneously with his actual observation process, but immediately after he has observed for a unit of time while the details are still fresh in his mind.

In viewing, classifying and recording behavior, the observer must take utmost care to minimize the influence of his biases, attitudes and values on the observation report by using various mechanical instruments such as cameras, tape-recorders, stopwatches etc.

Merits.

1. It is a natural method. There is no artificiality.
2. We can gather the information on the spot. We have not to wait for results.
3. It needs no laboratory. It is economical.
4. It is simple and easy.
5. It is applicable for to all individuals and groups.
6. It is suitable in many different situations.

Demerits.

1. There can be bias on the part of observer.
2. Every behaviour of a person cannot be observed.
3. If a person comes to know that he is under observation, he may exhibit artificial behaviour.
4. It is difficult to get well-trained observer.
5. Some personal problems cannot be observed.

C. Interview

The interview is a process of communication or Interaction in which the subject or interviewee gives the needed information verbally in a face-to-face situation. Although the interview is generally associated with counseling or psychotherapy, it can be used effectively to collect useful information about individuals in many research situations. Interviews vary in design or structure. In some situations, an interviewer may interview

one individual at one time. It is called an 'individual interview'. In a 'group interview', a group of individuals are interviewed by an interviewer. The size of the group should be neither too small nor too large. In the group interview, the interviewees may hesitate to reveal certain facts or experiences in the presence of others.

Interviews are also classified as 'structured' and 'unstructured'. A structured interview is one in which the procedure to be followed is standardized and is determined in advance of the interview. Structured interviews impose a degree of formality which does not permit the interviewer to establish the kind of relationship between himself and the interviewee which is necessary if the interview is to be conducted at some depth.

Unstructured interviews provide greater flexibility. Although the series of questions to be asked and the procedure to be followed are decided upon before hand, the interviewer is largely free to arrange the form and timing of the questions.

Techniques of interviewing: There are some techniques that need to be considered while interviewing. These techniques deal with preparation for the interview, conduct of the interview and recording of the data.

- 1. Preparation for the interview:** The interviewer must decide exactly what kind of data the interview should yield. Whether the structured or unstructured procedures will be more useful, and how the results of the interview should be recorded. It is advisable to try out the interview on another person before using it for actual investigation.
- 2. Conducting the interview:** In the execution of an interview, a harmonious relationship between the interviewer and the interviewee is most essential. To elicit adequate responses from the interviewee, Turney and Rohb (1971, pp. 134 – 135) have suggested certain rules that should be followed during the conduct of interview to facilitate data collecting:
 - i. Ask only one question at a time.
 - ii. Repeat a question if necessary.
 - iii. Try to make sure that the subject understands the question.
 - iv. Listen carefully to the subject's answers.

- v. Observe the subject's facial expressions, gestures, and tone of voice.
- vi. Allow the subject sufficient time to answer the question, but do not let the interview drag.
- vii. Avoid suggesting answers to the question.
- viii. Do not show signs of surprise, shock, anger, or other emotions if expected answers are given.
- ix. Maintain a neutral attitude with respect to controversial issues during interview.
- x. Take note of answers that seem to be vague, ambiguous or evasive.
- xi. In the unstructured interview, ask additional questions to follow up clues or to obtain additional information.
- xii. Use tact and skill in getting the subject back to an area of inquiry when he has strayed too far from the original question.

3. Recording of the interview: The interviewer may make use of a schedule, a structured format, rating scale or a tape recorder to record the responses of interviewee. The use of tape-recorder during the conduct of interview not only eliminated the omissions, distortions, elaboration and other modification of data usually found in written interviews, but it also provides an objective basis for evaluating the adequacy of the interview data in relation to the performance of the interviewer.

Advantages and Limitations:

The interview has certain advantages. It provides an opportunity to the interviewer to question thoroughly certain areas of inquiry. The interview permits greater depth of response which is not possible through any other means. It also enables an interviewer to get information concerning feelings, attitudes or emotions in relation to certain questions.

The interview, however, has certain limitations. It is a time consuming technique. The effectiveness of the interview depends greatly upon the skill of the interviewer not ordinarily possessed by inexperienced researchers. There is a constant danger of

subjectivity on the part of the interviewer. Moreover, even in the presence of a skilled interviewer, some interviewees will not respond freely, frankly and accurately.

D. Introspection

It is the oldest known method of psychology for studying human behaviour. The profunder of this method are the structuralists who defined psychology as the study of conscious experience of the individual. Introspection is derived from two Latin words 'intro' meaning 'within or inward' and 'spection' meaning 'looking or observing'. This method helps the individual to analyze and report his own mental feelings. Suppose you are happy and in this state of happiness you look within yourself. It means that you are introspecting your own mental feelings and examining what is going on in your mental process in the state of happiness. Introspection is also defined as the notice which the mind takes of itself. Different persons have given different definition about introspection.

- **Wood Worth.** "Introspection is self observation".
- **Stout.** "To introspect is to attend to the working of one's own mind in a systematic way."

Merits:

1. It is simple, economical and readily available method.
2. It is the only method with the help of which an individual can know his emotions and feelings.
3. It is useful in bringing improvement in one's personality.

Demerits:

1. This method is unscientific, subjective and personal in nature and the verification of the collected data isn't possible.
2. Introspection can only be applied to adult normal human beings. It is not applicable to children, abnormal, illiterates and animals.
3. Certain experiences like birth and death experiences can't be introspected. Hence it is inadequate to explain all the aspects of human behaviour.
4. Mental experiences are transitory and short-lived. They evaporate as we begin to introspect them.

E. Case Study

Case study is an intensive study about the different important aspects of the individual. It is a pen picture about the individual. It is prepared for those children who are supposed to be problem children the material for case study is gathered through the use of many techniques, i.e., tests of intelligence and achievement self-reports, interview, observation, home visits etc. This method is employed by clinical psychologists, psychiatrists, social workers, guidance workers and counselors.

Case study outline:

➤ **Identifying data**

1. Name of the child.
2. Date of birth.
3. Age.
4. Class
5. Sex
6. Name of the father
7. Address

➤ **Statement of the problem**

➤ **case referred by:**

1. Family history.

- i. Father's occupation, education, socio-economic status, attitude towards family etc.
- ii. Mother's education, occupation, income, social status, attitude towards the family etc.
- iii. Sibling inter-relationship.
- iv. Physical conditions at home, locality, number of rooms, ventilation, cleanliness, sleeping and studying arrangements, recreational facilities etc.

2. Personal history.

- i. **Birth.** Full term or premature delivery; height and weight at the time of birth.

- ii. **Development history.** Breast fed or bottle fed; age of weaning, development of habits like thumb sucking; nail biting etc.
 - iii. **Emotional development.** Submissive or aggressive, happy or unhappy, calm or tense, sensitive or insensitive.
 - iv. **Social history.** Extent of his participation in social, cultural, religious and political activities; gang affiliations; his relationship with playmates, classmates, teachers, etc
 - v. **Recreational interests.** Participation in leisure time activities and hobbies; special interests etc.
- 3. Educational and vocational history.**
- a. **School history.** Age at entering school, schools attended, attitude towards school, teachers, classmates, subjects and co-curricular activities, educational plans.
 - b. **Vocational history.** Jobs held in the past, vocational interests and ambitions.

Steps of case study:

1. **Determining the present status of the individual.** The first step is to determine the present status of the individual under investigation. Here the psychologist goes far beyond casual observation or superficial description. There are numerous standardized tools that are useful to the psychologist in this assessment process.
2. **Forming a hypothesis.** The next step is to determine the most probable antecedents of the case and to formulate a hypothesis.
3. **Testing the hypothesis.** The case is then checked for the presence or the absence of the antecedents supposed to apply to the situation under investigation.
4. **Suggesting remedial measures.** After verification of the hypothesis, the next step is directed towards further validation of the diagnosis. Some remedial measures in the light of the causes found are suggested.
5. **Follow-up.** The last step of the case study is the follow-up of the case. The case under study is re-examined to ascertain whether changes have been produced by the treatments introduced. If the change is positive and significant, the diagnosis is taken to be correct.

Merits:

1. It provides us insight into the nature of the problem.
2. It is useful research technique.
3. It is useful in providing treatment to maladjusted persons.

Demerits:

1. It is a time consuming method.
 2. People generally do not cooperate in giving true information.
 3. It requires trained persons; such persons are not easily available.
 4. Sometimes it is not easy to get complete data.
-

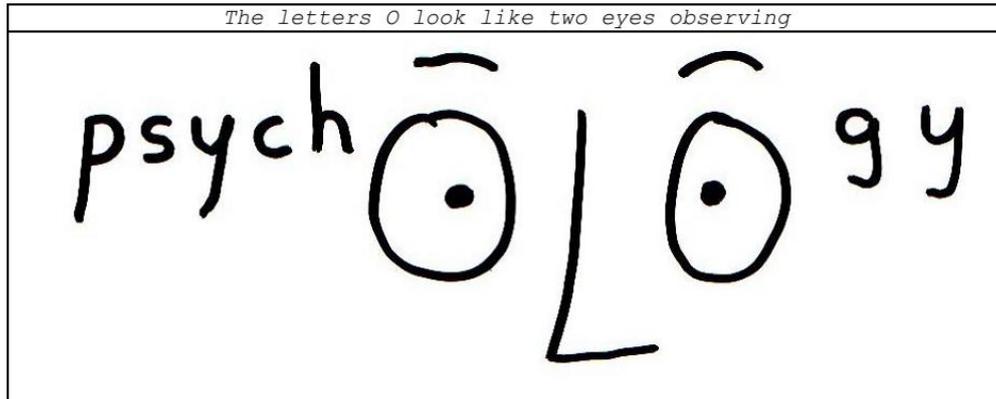
1.10 What Makes Psychology Scientific

Psychology is a science because it follows the empirical method. The scientific status of any endeavor is determined by its method of investigation, not what it studies, or when the research was done, and certainly not by who did the investigation. All sciences use the empirical method. Empiricism emphasizes objective and precise measurement. Psychology and the other behavioral or social sciences (sociology, anthropology, economics, political science) are not as precise in their measurements as are biology, chemistry or physics, but to the extent that psychologists use empirical evidence, their findings may be referred to as scientific.

It is this emphasis on the empirically observable that made it necessary for psychology to change its definition from the study of the mind (because the mind itself could not be directly observed) to the science of behavior. We can directly observe and carefully measure externals such as what a person does, says, and marks down on a psychological test. We cannot directly observe a person's mind (e.g., internal thoughts, emotions).

Here is how to remember that a psychologist is a scientist who studies behavior using the empirical method. Notice that in the word psychologist the letter **O** is repeated twice. That does not happen in psychiatrist or psychoanalyst or even psychotherapist.

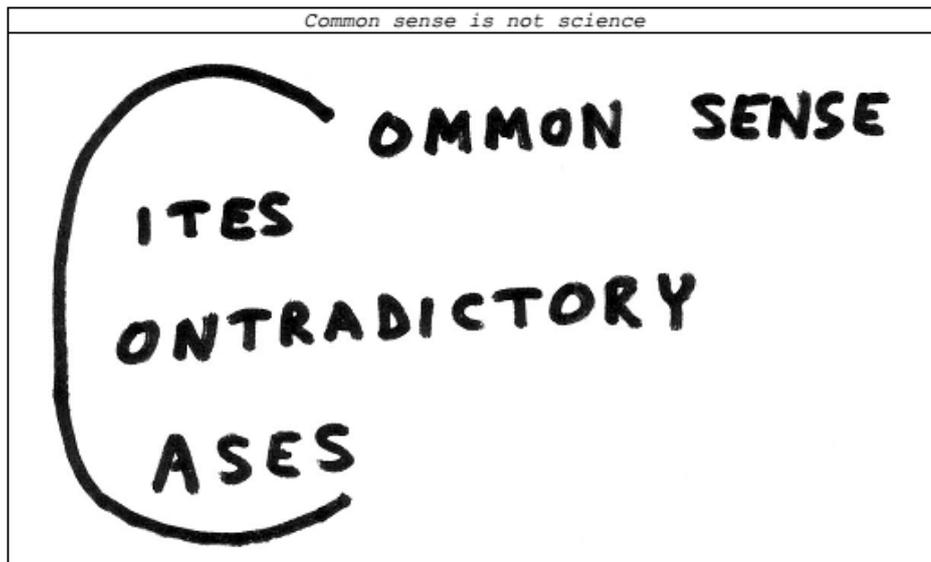
Imagine that those letters are eyeballs opened wide, so that the psychologist can better observe behavior: e.g., what a rat does in a maze or how a patient behaves.



Pseudo-psychology is phony, non-scientific speculation about human behavior. Astrology (trying to predict a person's behavior or character on the basis of the position of planetary bodies) is generally regarded as a pseudo-science because of its origin in ancient Babylonian religion, not in the modern science of astronomy, which carefully measures and calculates the position of the planets. If someone were to gather enough data to prove that astrology could consistently and systematically predict behavior or character, then astrology would become a genuine science. However, until that evidence is presented, scientists, including psychologists, prefer to err on the side of skepticism.

Common sense, by itself, is not sufficient for science. Common sense refers to generally accepted ideas about human behavior, but many of these have not been subjected to the kind of systematic investigation that formal science demands. Common sense tends to limit its database to self-reflection (introspection) and over-emotionalized, isolated examples (case studies), some of which might even be contradictory.

Common sense may be a starting point for some of our hypotheses about human nature, but we cannot stop there: we must go forward and systematically gather data to test those hypotheses. So it is best not to use the term common sense in this course.



1.11 Let Us Sum Up

In the few years since psychology emerged as a distinct science, it has grown and changed in innumerable ways. Each major school of thought fought for dominance but in the end, none emerged as clear winners. At the same time, none were losers. How so? Well each school of thought left an indelible mark on psychology, helping to mold it into the respected discipline that it now is. In addition, many psychologists today adopt an eclectic approach – instead of clinging to one particular perspective, they carefully choose from each school of thought those ideas and methods they believe are most appropriate for achieving their objectives. Psychology has never been nor will it ever be a static field of study. Even now, there are new theories being written, new topics being studied and new ideas yet to be explored.

1.12 Check your Progress

1. Define Psychology? Discuss in detail the scope of Psychology?
2. State the historical development of Psychology as a Science?
3. Give a detailed account about the Schools of Psychology?

4. Explain in detail the various Methods of Psychology?
-

1.13 Suggested Readings

1. Bernstein, A.D (1988). Psychology. Houghton Company: Dallas Campbell, C.Y. (2002). Psychology. Chicago: Rand McNally.
2. Burger, J. M. (2011). *Personality*. Belmont, CA: Wadsworth.
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5. Hergenhahn, B. R. (2009). *An introduction to the history of psychology* (6th ed.). Belmont, CA: Wadsworth.
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7. Lahey, B. (1998). Psychology: An Introduction. McGraw-Hill New York.
8. Oladele, J.O. (1998). Fundamentals of Psychological Foundations of Education. Yaba: Johns-Lad Publishers Ltd.
9. Perrin, L. (1986). Understanding Psychology. (4th Ed.). McGraw Hill: California.
10. Schultz, D. P., & Schultz, S. E. (2011). *A history of modern psychology* (10th ed.). Belmont, CA: Wadsworth.

**LESSON NO: 02 NATURE, MEANING AND FUNCTIONS
OF EDUCATIONAL PSYCHOLOGY**

Lesson Structure

- 2.0 Introduction**
- 2.1 Objectives**
- 2.2 Historical Development of Educational Psychology**
- 2.3 Prominent Pioneers in Educational Psychology**
- 2.4 Meaning of Educational Psychology**
- 2.5 Nature of Educational Psychology**
- 2.6 Implications of Educational Psychology to
Classroom Situations**
- 2.7 Scope of Educational Psychology**
- 2.8 Schools of Psychology and Their Bearing on Education**
- 2.9 Let us Sum Up**
- 2.10 Check your Progress**
- 2.11 Suggested Readings**

2.0 Introduction

In the previous lesson, we learnt about the meaning of Psychology. We also explained some branches of psychology, one of its branch is Educational Psychology.

Having defined and described the nature of Psychology let us now look specifically at Educational Psychology. We will discuss it in terms of its definition and more importantly, why is it an essential area of study for prospective teachers. This knowledge will enable us to assess the measure in which our knowledge meets the objective of preparing us for a teaching career. The relevance of Educational Psychology in the classroom cannot be over-emphasized. This is because a teacher who has skills and knowledge in psychology will be able to manage his/her classroom effectively. Besides, knowledge of psychology is a sine-quo-non to successful teaching-learning activities.

2.1 Objectives

After going through this lesson, you should be able to:

- Describe the historical background of Educational Psychology.
- Define Educational Psychology;
- Discuss the scope of educational psychology;
- Identify the importance of Educational Psychology to the classroom situation; and
- Explain the importance of studying Educational Psychology to teachers.

2.2 Historical Background of Educational Psychology

Educational Psychology did not start as an abstract field. It has history as well as pioneers. The field of educational psychology was founded by several psychologists before the start of 20th Century. Some of the great educational psychology pioneers include the following:

- **William James (1842 – 1910):** He gave a series of lectures to teachers in which he discussed the application of psychology in educating children. James argued that lessons should be given to children just beyond the child's level of knowledge and understanding, in order to stretch the child's mind.

- **John Dewey (1859 – 1952):** A second major pioneer in shaping the field of educational psychology. He became the driving force in practical application of psychology to education. He established his first major educational psychology laboratory in the United States of America in 1894. He believed that children should not be narrowly educated in academic topics but should learn how to think and solve problems for themselves.
- **E.L. Thorndike (1874 – 1949):** He initiated an emphasis on assessment and measurement and promoted the scientific underpinnings of learning. Thorndike argued that one of schooling's most important tasks is to motivate children's reasoning skills. Furthermore, he suggested the idea that Educational Psychology must have a scientific base that it should focus strongly on measurement.
- **Jean Piaget (1896-1980):** Best known for his research on children's cognitive development, Piaget studied the intellectual development of his own three children. Piaget's theory described stages that children pass through in the development of intelligence and formal thought processes. The theory describes four stages; (1) the sensori-motor stage, (2) the preoperational stage, (3) the concrete operational stage, and (4) the formal operation stage.

Jean Piaget provided support for the idea that children think differently than adults. His research identified several important milestones in the mental development of children. His work also generated interest in cognitive and developmental psychology. Piaget's theories are widely accepted and studied today by students of both psychology and education.
- **B. F. Skinner (1904-1990):** Skinner was an American Psychologist born in Pennsylvania. In 1948, he joined the psychology department at Harvard University where he remained for the rest of his life. He became one of the leaders of behaviorism and his work contributed immensely to experimental psychology.

He also invented the ‘Skinner box,’ in which a rat learns to obtain food by pressing a lever.

B.F. Skinner is famous for his research on operant conditioning and negative reinforcement. He developed a device called the “cumulative recorder,” which showed rates of responding as a sloped line. Using this device, he found that behavior did not depend on the preceding stimulus as Watson and Pavlov maintained. Instead, Skinner found that behaviors were dependent upon what happens after the response. Skinner called this operant behavior. In his research on operant conditioning, Skinner also discovered and described schedules of reinforcement. In the last several decades of 20th Century Educational Psychologists have increasingly focused on socio-emotional aspects’ of pupils’ lives and information processing. Educational psychology is now one of the major branches of psychology we should not miss to learn it.

2.3 Prominent Pioneers in Educational Psychology

➤ ***Joseph Mayer Rice***

He is one of those who set the stage for Thorndike. He was the great muckraker and classroom observer. He is considered as the father of research on teaching.

➤ ***Edward Lee Thorndike***

E.L.Thorndike, an American pioneer in comparative psychology, was born in Lowell, Massachusetts in 1874 to the family of a Metyhodist minister. He became interested in the field of psychology after reading William James. He was awarded the doctorate for his classic thesis” Animal Intelligence” which was an experimental study of the associative processes in animals. He became an instructor of psychology at Teachers College at Columbia University and there he studied human learning, education, and mental testing.

Thorndike’s pioneer investigations in the fields of human and animal learning are among the most influential in the history of psychology. In 1912 he was recognized for his accomplishments and elected president of the American Psychological Association.

He introduced the concept of reinforcement. His work is often called connectionism because of the idea that bonds between stimulus and response take the form of neural connections. According to him learning involves the “stamping in” of connections, and forgetting involves “stamping out” connections.

He gave the “Law of Exercise” which means connections become strengthened with practice, and weaken when practice is discontinued. He said that intelligence is a function of the number of connections made. He was also among the first to apply psychological principles in the area of teaching. Hull accepted Thorndike’s view that connections were formed between stimuli and response rather than between reward and response.

Psychology enlarges and refines the aim of education. Psychology contributes to understanding of the means of education. First, because the intellects and characters of anyone’s parents, teachers and friends are very important means of educating him. Secondly, because the influence of any other means, such as books, maps or apparatus cannot be usefully studied apart from the human nature which they are to act upon.

Thorndike’s views resulted in the major shift in psychology. His teaching experience in schools was not a happy one. Instead of practicing the practice in school, he tried to open an educational laboratory. It was different from Dewey’s view, who saw the school as the laboratory. Thorndike wrote 50 books and 400 articles. He wrote Educational Psychology textbooks. He gave us the first standardized achievement test and developed intelligence tests and compiled dictionaries as well. Thorndike believed that only empirical work should guide education. In his book “Introduction to Teaching” he wrote that psychological science is to teaching, as botany is to farming, mechanics is to architecture, and physiology and pathology are to the physician. Thorndike wrote that “Man is free only in a world whose every event he can understand and foresee... We are captains of our souls only in so far as... we can understand and foresee every response which we will make to every situation. According to him psychology does not need to go into the classroom, it can derive its laws from the laboratory and hand them down to the teachers. He promoted the belief that only science would save education. He believed that

quantitative experiments should be preferred over qualitative, clinical or naturalistic observation.

Criticism on Thorndike:

Thorndike first failed to distinguish between the goals and the methods used in the physical and the social sciences. To Thorndike people were as easy to study as stones and toads. Secondly, Thorndike did not pay enough attention to the social and historical contexts in which people lived and in which schools operated. Third, Thorndike had a blind faith that all of the achievements of science were desirable. He seemed to believe this even after Hiroshima and Nazi extermination camps, the event which causes many people to question their faith in science. Finally, Thorndike overlooked the aesthetic dimension of science. The art of educational psychology surfaces occasionally, as it does in every other branch of science.

➤ ***Lewis Madison Terman***

Lewis Terman was known for his research on intelligence, and in particular on the gifted. He translated the Binet test of intelligence into English, set new age norms and standardized the scores. His version came to be called the Stanford-Binet test. Lewis Terman grew up in rural Indiana, where he was the 12th of 14 children, from a prosperous farming family. Terman received a BS from a local teachers' college, MA from Indiana University, and his Ph.D. from Clark University in Massachusetts. His dissertation was on comparing mental and physical abilities of children from different ability groups. Terman worked as a high school principal and then as a professor at teachers' college. In 1910, Stanford offered him a job in the Department of Education. Terman later transferred to the psychology department which he chaired for 20 years. He wrote the book "The Measurement of Intelligence". Working with other psychologists during World War I, Terman was largely responsible for the first notable group intelligence tests, the Army Alpha and the Army Beta. Terman also published the Terman Group Test of Mental Ability in 1920, and he co-authored the Stanford Achievement Test, which was revised many times and continued to be widely used in the 1980's.

Terman defined intelligence as “the ability to carry on abstract thinking” and used the label IQ or Intelligence Quotient. Terman’s studies undoubtedly are still the most recognized and frequently quoted research on the gifted children. His last progress report on this continuing study was *The Gifted Child Grows Up* (1947).

Among Terman’s most interesting findings from his study of the development of gifted children were that they tended to be healthier and more stable emotionally than the average children. He said that gifted children excelled in measures of academic achievement. He found that gifted children did not fit the existing stereotypes often associated with them: they were not weak and sickly social misfits, but in fact were generally taller, in better health, better developed physically, and better adapted socially than other children. He was the psychologist who developed some of the earliest and most successful measures of individual differences. Terman believed that mental abilities were primarily a product of heredity.

As a result of his research with the gifted, Terman devoted the latter part of his career to assessing non-intellectual personality traits. He also produced the first questionnaire to measure masculinity and femininity. The test reflected the gender norms of the 1930’s. He emphasized to educate the girls and boys so that they would conform to the existing gender norms. Terman’s contributions to the development of testing and the study of the intellectually gifted ensure his position as one of the pioneers of American psychology. He believed that IQ was inherited and was the strongest predictor of one’s ultimate success in life.

➤ ***Leona Tyler***

She was born on May 10, 1906 in Wisconsin. Tyler’s mother’s principles provided the basic foundation for Tyler’s spirituality and moral principles. Tyler skipped several grades and graduated at high school at the age of fifteen and college at the age of nineteen. She was most enthusiastic about chemistry, but she lacked the equipment for the advanced courses in chemistry, then she obtained her B.S. in English literature. After graduating she taught English and other subjects in junior high schools.

In 1947 she wrote *The Psychology of Human Differences*. She found that her teaching, writing and counseling all interacted to stimulate reevaluation and integration of ideas about human nature. Tyler conducted a longitudinal study of first graders that “stimulated ideas about theory and research related to interests and general development”. She proposed that “individuality is based on the choices people make and the cognitive structures people use to organize their experiences”. This changed the direction of the field from psychometrics to developmental and learning processes. One of her major contributions is that she wrote the primary textbook for graduate students in counseling psychology.

➤ ***John Dewey***

John Dewey was an American philosopher and educator whose writings and teachings have profound influences on education in the United States. He founded and directed a laboratory school at the University of Chicago. His first major work on education is *The School and Society* (1899). His interest in educational theory continued during his later work at Teachers College in Columbia. This led to the publication of “*How We Think*”, an application of his theory of knowledge to education, and *Democracy and Education* is perhaps his most important work in the field.

Dewey was also an educational reformer and a pioneer in the field of educational psychology. In education he stressed on learning by doing, as opposed to authoritarian teaching methods and rote learning. In 1886 he wrote the first American psychology textbook, titled *Psychology*.

➤ ***Hermann Ebbinghaus***

The German psychologist, Hermann Ebbinghaus developed techniques for the experimental study of memory and forgetting. Before Ebbinghaus, these higher mental processes had never been scientifically studied, the importance of this work for the practical world of education was immediately recognized.

➤ ***Granville Stanley Hall***

He was an American psychologist and an educator. Hall was a child psychologist whose theories of child psychology strongly influenced the educational psychology. He

was a pioneer in developing psychology in United States. His wide ranging and prolific writings reveal a central theme best characterized as genetic psychology or evolutionism. In 1878 under the guidance of his friend William James, he received from Harvard the first doctorate in psychology ever given in the United States.

From 1882-1888 he taught psychology at Johns Hopkins University. There, Hall objected vehemently to the emphasis on teaching traditional subjects e.g. Latin, mathematics, science and history, in high school, arguing instead that high school should focus more on the education of adolescents than on preparing students for college. He set about building up the first American laboratory for psychology. In 1887 he founded and edited the American Journal of Psychology, the first journal of its kind in the United States. In 1892 about fifteen psychologists drew up plan for the American Psychological Association. Hall was its first president. He wrote many articles and dozens of books. Among his important works are Adolescence (1904), and Founders of Modern Psychology (1912).

Hall was a significant figure in the early period of American psychology. He is remembered primarily as an organizer, teacher and editor and as the president of Clark University. He founded North America's first formally accepted university psychology laboratory. He gave the psychological concept of adolescence. He pioneered the empirical study of individual religious experience by assembling data on the religious experiences of children, and in 1904 he founded The American Journal of Religious Psychology and Education. He helped to establish a scientific base for experimental psychology.

Darwin's theory of evolution was an influence on Hall. This promoted him to undertake a scientific examination of child development in order to learn about the inheritance of behavior. Hall coined the phrase "Storm and Stress" with reference to adolescence, taken from the German Sturm and Drang-movement. Its three key aspects are: conflict with parents, mood disruptions, and risky behavior. Hall's major books were Adolescence, and Aspects of Child Life and Education.

➤ ***William James***

In the late 1890's William James of Harvard University examined the relationship between psychology and teaching.

➤ ***James McKeen Cattell***

The American psychologist and editor James Cattell was a pioneer in American psychology, who influenced the profession to use objective methods of study and to apply psychology to practical aspects of life. He was born in 1860 in Easton, Pennsylvania. He was educated by a private tutor in his home. Cattell's father was a professor of ancient languages, later he became the president of the college. Cattell joined college officially when he was 20 years old and got his undergraduate degree. Cattell held the first professorship in psychology in 1888 at the University of Pennsylvania. He made his greatest contributions to the field of psychology when he was professor at Columbia University. Thorndike was his student at Columbia University. He researched reading and perception, psychophysics, individual differences and individual's reaction times to various stimuli. Moreover, Cattell said that scientific findings should be utilized in practical ways. He revolutionized some educational practices such as methods of teaching reading and spelling. He was also one of the founders of the American Psychological Association and of several other scientific societies. He launched and published several scientific journals including Psychological Review, Science, Scientific Monthly, School and Society and The American Naturalist. He also prepared and published the first editions of American Men of Science and Leaders in Education.

2.4 Meaning of Educational Psychology

Educational psychology is one of the many branches of psychology dealing mainly with the problems, processes and products of the education. It is an attempt to apply the knowledge of psychology in the field of education. It may be defined as that branch of psychology which studies the behavior of the learner, his educational needs and his environment.

Educational Psychology is an integral part of psychology which seeks to find how positive relationship/interaction can be established between the teacher, students and the learning process. According to Oladele (1998), educational psychology is an applied psychology which studies the ways in which the learner can be most effectively brought into contact with the learning process. Educational psychology is geared towards investigating or exploring the factors that will stimulate, enhance or obstruct the learning process. The knowledge and skills acquired from educational psychology will guide and direct in resolving the enormous problems confronting both the teachers and students in the classroom.

Various psychologists and scholars have defined educational psychology. Let us analyze a few important definitions.

- According to Skinner (1958): Educational psychology is that branch of psychology which deals with teaching and learning.
- Crow and Crow (1973) defined educational psychology as: Educational psychology describes and explains the learning experiences of an individual from birth through old age.
- Another psychologist named Peel (1956) says: Educational psychology is the science of education. Education in its applied form is centered around the process of teaching and learning.
- In the words of Stephen – “Educational Psychology is the systematic study of the educational growth and development of a child.”
- To quote Judd – “Educational Psychology is the Science which explains the changes that take place in the individuals as they pass through the various stages of development.”

From the above discussion, it can be said that educational Psychology is the branch of Psychology that specializes in understanding teaching and learning in education settings. It is the study of how humans learn in educational settings, the effectiveness of educational interventions, the psychology of teaching, and the social psychology of schools as organizations.

Educational Psychology is concerned with the study of learners, learning and teaching. Its principle focus is on the processes by which information, skills, values and attitudes are transmitted from teachers to pupils in the classroom situation. Educational psychology is concerned with how students learn and develop, often focusing on subgroups such as gifted children and those subject to specific disabilities. In short, it focuses on the applications of principles of psychology to the practice of teaching and learning.

Educational Psychology discusses in details, the characteristics of learners and how to apply psychological principles in making the learners and learning process effective. This branch of psychology involves not just the learning process of early childhood and adolescence, but includes the social, emotional and cognitive processes that are involved in learning throughout the entire lifespan. The field of educational psychology incorporates a number of other disciplines, including developmental psychology, behavioral psychology and cognitive psychology.

2.5 Nature of Educational Psychology

Educational psychology is an offshoot and a part and parcel of psychology, so its nature cannot be different from the main subject. The following points further confirm the nature of educational psychology as scientific.

1. Educational psychology possesses a well-organized systematic body of facts which is supported by the psychological laws and principles.
2. It is constantly in the search of the truth, which is studying the behavior of the learner in relation to his educational environment. The results of any study in educational psychology can be challenged and are modified or altered in terms of the latest explanations and findings.
3. Educational psychology does not accept hearsay and does not take anything for granted. It emphasized that essentially there is some definite cause linked with a behavior. And the causes of this behavior are not related to super natural phenomenon.

4. Educational psychology is mostly concerned with the “what” and “why” of happenings in the present instead of caring for the past. Therefore, in its study it focuses attention on problems like the present behavior of the learner, the causes of such behavior, and the repercussion if it were to continue unchanged.
5. The generalizations arrived as conclusions reach through the study of educational psychology are sufficiently reliable and thus like the sciences these can be used for predictions of behavior in similar situations. R.B.Cattell the modern psychologist believed so much in the predictable quality of these studies that he persisted in defining personality as well attribute which permits the prediction of what a person will do in a given situation.

This discussion shows that educational psychology is sufficiently scientific in fact it is an applied behavioral science, which deals with the behavior of learner in the educational environment. Since the learner’s behavior is dynamic and unpredictable and the methods of its study are also not absolute and objective, educational psychology cannot claim the status of a developed positive science like other natural or applied sciences. Although we accept its nature as quiet scientific yet we cannot term it as a developed positive science and have to satisfy ourselves with saying that it is a developing positive science of the learner’s behavior.

2.6 Functions of Educational Psychology

It is rightly said that a teacher is likely to be handicapped without a solid foundation of educational psychology. He may use psychological knowledge to improve his professional practice. In particular the knowledge of educational psychology helps him in the following way:

1. **Helps teacher in understanding the child.** Educational psychology gives an insight to the teacher about the psychological make-up of the child. A teacher cannot teach the child unless he knows the child.
2. **Helps in framing the child-centered curriculum.** Now-a-days child is considered to be the pivot around which every activity of the school has to revolve. Curriculum

is the pathway of these activities. Psychology helps the teacher how to devise such a curriculum.

3. **Helps in planning education for the child.** A sound system of education is characterized by proper planning for education. Proper planning can be made after assessing the capacity of the child.
4. **Helps in locating individual differences among children.** It is a basic assumption of psychology that each individual is different from every other individual in his psychological make-up. The teacher has to start teaching keeping in view the fact that the classroom is heterogeneous in nature. Educational psychology helps him here.
5. **Helps in becoming a good teacher.** Educational psychology enables him to know the qualities required for a successful teacher.
6. **Helps in understanding the importance of co-curricular activities.** Teacher's concern is not only with the academic side of the curriculum but with non-academic side too. Educational psychology tells him that these two parts are not to be treated in isolation. They are complementary to each other.
7. **Helps in changing the outlook of the teacher towards his students.** The knowledge of educational psychology will change the outlook and attitude of the teacher towards children.
8. **Helps making teaching interesting.** It enables the teacher to make his teaching interesting for the child so that the child feels motivated in the lesson. He can do so by using modern methods of teaching, audio-visual aids and psychological maxims.

From the above discussion, it can be said that educational psychology includes topics that span human development, individual differences, measurement, learning, and motivation and is both a data-driven and a theory-driven discipline. Thus, our definition of educational psychology is the application of psychology and psychological methods to the study of development, learning, motivation, instruction, assessment, and related issues that influence the interaction of teaching and learning. This definition is broad because the potential applications of educational psychology to the learning process are immense.

Today educational psychology is a vital discipline that is contributing to the education of teachers and learners.

2.7 Implications of Educational Psychology to Classroom Situations

1. Educational Psychology allows the teacher to know the tone of his/her classroom. It assists the teacher to understand the behaviour of every member of his/her classroom.
2. It affords the teacher the opportunity to know the factors that can enhance or impede teaching-learning activities.
3. It helps the teacher to appreciate the importance of motivation, and how and when to motivate the students in the classroom.
4. It equips the teacher to know or be able to predict what might likely happen to a learner in terms of his/her personality, developmental stages and psychological problem.
5. It gives the teacher the opportunity of varying his/her instructional strategies based on the behaviour of the students in the classroom. It is a known fact that no particular instructional method is regarded as the best. The viability of any instructional method is based on learners' characteristics as well as the instructions to be delivered at a particular time.
6. Educational Psychology enables the teacher to understand the interest of the learners and how to follow this in planning the curriculum or learning contents.
7. It aids/guides the teacher in grading or placing the learners into a particular class. Feedback is an important aspect in the learning situation, a constant evaluation of students' performance will serve as a yardstick of measuring or assessing whether the students are responding positively to learning situation or there is a need for the teacher to adjust his/her teaching style.

8. Behavioural problem is an integral part of learning process. It is an undesirable act in the classroom. However, a teacher who is well trained will be able to explain why students behave irrationally at a particular time and how the teacher can tackle such problems without much harm to the classroom teaching/learning activities.
9. It also assists the teacher to assess his/her effectiveness. It is believed that teacher's effectiveness is measured based on the learners' performance in the classroom, hence, a teacher with good foundation in psychology will be able to judge his/her own efficiency and competency.

2.8 Scope of Educational Psychology

Educational Psychology is the science of education which mainly deals with the problems of teaching and learning and helps the teacher in his task of modifying the learner's behaviour and bringing about an all-round development of his personality. Therefore, while in psychology the scope of study and the field of operation are extended to cover the behaviour of all living organisms related to all their life activities, in Educational Psychology, the scope of such behavioural study has to be limited within the confines of the teaching-learning process, i.e. studying the behaviour of the learners in relation to their educational environment, specifically for the satisfaction of their educational needs and the all-round development of their personality. Specifically, thus, the subject matter of Educational Psychology must be centered on the process of teaching and learning for enabling the teacher and learners to do their jobs as satisfactorily as possible.

Let us first see the different issues that may be involved in an ongoing teaching-learning process. For improving the processes and products of the system related to teaching and learning, we will have to improve all the ingredients of this phenomenon. For this purpose, the basic questions involved in the teaching-learning process must be satisfactorily attended to: Who is being taught or educated? By whom is he to be taught or educated? Why is education to be provided to the child or what are the values or

objectives that are to be aimed at through the teaching-learning process? What is to be taught or what learning experience is to be imparted to the learner for achieving the desired educational objectives? How, when and where should these learning experiences be satisfactorily provided to the learner for achieving the desired educational objectives? Educational Psychology seeks to provide satisfactory solutions and answers to all the questions raised above except the why of education as this is purely the concern of Educational Philosophy, a matter to be decided by society or the government. Therefore, all texts of educational psychology are loaded with material related to the basic questions. Let us try to clarify and answer them.

The following factors will indicate the scope of educational psychology:

1. **The Learner.** The subject-matter of educational psychology is knitted around the learner. Therefore, the need of knowing the learner and the techniques of knowing him well. The topics include – the innate abilities and capacities of the individuals, individual differences and their measurements, the overt, covert, conscious as well as unconscious behaviour of the learner, the characteristics of his growth and development and each stage beginning from childhood to adulthood.
2. **The Learning Experiences.** Educational Psychology helps in deciding what learning experiences are desirable, at what stage of the growth and development of the learner, so that these experiences can be acquired with a greater ease and satisfaction.
3. **Learning process:** After knowing the learner and deciding what learning experiences are to be provided, Educational Psychology moves on to the laws, principles and theories of learning. Other items in the learning process are remembering and forgetting, perceiving, concept formation, thinking and reasoning, problem solving, transfer of learning, ways and means of effective learning etc.
4. **Learning Situation or Environment.** Here we deal with the environmental factors and learning situations which come midway between the learner and the

teacher. Topics like classroom climate, group dynamics, techniques and aids that facilitate learning and evaluation, techniques and practices of guidance and counseling etc are discussed for the smooth functioning of the teaching-learning process.

5. **The Teacher:** The teacher is a potent force in any scheme of teaching and learning process. It discusses the role of the teacher. It emphasizes the need of '**knowing thyself**' for a teacher to play his role properly in the process of education. His conflicts, motivation, Anxiety, adjustment, level of aspiration etc. It throws light on the essential personality traits, interests, aptitudes, the characteristics of effective teaching etc so as to inspire him for becoming a successful teacher. Though the entire scope of Educational Psychology is included in the above mentioned five key-factors, it may be further expanded by adding the following:
6. **Human Behaviour:** Educational psychology studies human behaviour in educational situations. Psychology is the study of behaviour, and education deals with the modification of behaviour; hence, educational psychology pervades the whole field of education.
7. **Growth and Development:** Educational psychology studies the growth and development of the child. How a child passes through the various stages of growth and what are the characteristics of each stage are included in the study of educational psychology.
8. To what extent **Heredity and Environment** contribute towards the growth of the individual, and how this knowledge can be made use of for bringing about the optimum development of the child; form a salient feature of the scope of educational psychology.
9. Educational psychology deals with the **Nature and Development of the Personality** of an individual. In fact, education has been defined as the all-round development of the personality of an individual; personality development also implies a well-adjusted personality.

- 10. Individual Difference:** Educational psychology studies individual differences. Every individual differs from every other individual. It is one of the fundamental facts of human nature which have been brought to light by educational psychology. This one fact has revolutionalized the concept and process of education.
- 11.** It studies the nature of **Intelligence and its Measurement**. This is of utmost importance for a teacher.
- 12.** It Provides **Guidance and Counseling**: Education is nothing but providing guidance to the growing child.

To be very brief and precise, it can be said that educational psychology deals with the behaviour of human beings in educational situations. Its main concern is to identify various psychological factors affecting teaching and learning process. It describes and explains the learning according to scientifically determined principles and facts concerning human behaviour. Educational psychology addresses the questions – “why do some individual learn more than others" and "what can be done to improve that learning." Therefore, its subject matter is revolved around teaching and learning process and educational psychologists attempt to discover:

- The extent to which the factors of heredity and environment contribute to learning.
- The nature of the learning process.
- The educational significance of individual differences in rate and limit of learning.
- The inner change that occur during learning.
- The relation of teaching procedures to leaning outcomes.
- The most effective techniques for evaluating progress in learning.
- The relative effect upon an individual of formal learning as compared with incidental or informal learning experiences.
- To value the scientific attitude towards education.
- The psychological impact upon learner’s attitude of sociological conditions.

2.9 Systems or Schools of Psychology and Their Bearing on Education

As we have already seen psychology owes its origin to philosophy. However, as time elapsed psychologists attempted to discard the approaches and methods based on speculation and provided a scientific base to the subject for the study of behavior. These efforts gave birth to a number of schools or systems of psychology such as structuralism, functionalism behaviorism, psychoanalysis, individual psychology analytical psychology, humanist psychology, transpersonal psychology and cognitive psychology etc. The emergence of these systems or schools of thought not only influenced the development of various trends and approaches for assessment of behavior but also affected the processes and products of education. In the present chapter we aim to briefly trace the history of evolution of the different systems of psychology to show their impact or bearing on education.

Structuralism

Wilhelm Wundt (1832-1920), a German Professor, was mainly responsible for the evolution of this school of psychology. He opened the world's first psychological laboratory in Leipzig in 1879 with the sole purpose of the systematic study of the mind. For this he focused his experiments on conscious experience involving one's thoughts, feelings, sensations, perceptions and ideas. As he focused his attention on the analysis of the components of consciousness (the supposed structure of the mind), his approach to psychology is called as structuralism. Wundt and his students conducted experiments in the laboratory by using the art of introspection or self-observation. The subjects were usually asked to report exactly what they were experiencing at the moment when they were exposed to stimuli such as light, color, sound or the feel of an object. The psychologists performing the experiments also acted as subjects for the observations and recording of their own perceptions and feelings and then presenting their analyses of the activities of the mind.

The Leipzig laboratory produced most of the leading psychologists. One of its well-known products was Edward Bradford Titchener (1867-1927), a British by birth,

who became professor of psychology at Cornell University. According to him, psychology may be regarded as the science of consciousness or the study of experience. Consciousness or experience can be broken or analyzed into three basic elements: physical sensations, feelings and images such as memories and dreams. For example, when we report the perception experiences of a banana, we try to combine visual sensation (what we see) with feelings (our like or dislike for the banana) and with images (past experiences with other bananas). Through his studies Titchener concluded that the structure of the human mind was made up of more than 30,000 separate sensations, feelings, and images, and nothing else.

In this way, Wundt and his followers like Titchener, known as structuralists tried to provide a systematic study of the mind through the study of its structure (identifying the basic units of consciousness or experience along with the combinations in which they occur) by adopting introspection as the main technique.

Criticism of Structuralism

Structuralism is criticized on the following grounds:

As a system of psychology, structuralism is regarded as a very limited system which is unable to cover all aspects of human behavior. The isolation of such important topics as motivation, individual differences and abnormal behavior etc., clearly reveals the limited scope of this system. According to this system function involves structures, and structures of the mind can be explained through its parts, not its process. Such explanation involving the division of the human mind into individual elements, as Paplia and Olds (1987) have observed, may appear quite unnatural and untenable. For example, it is difficult for a structuralist to say “this is an apple” because (a) such a statement fails to analyze the apple into its various elements—that it is small, round, green or red in color, smooth-skinned, etc.; and (b) because referring to the object simply as an apple rather than in terms of the elements that an observer could see would be interpreting the object not describing it.

The introspection method used by the structuralists for studying behavior can neither be regarded as objective, reliable nor valid since each introspectionist may be

found to describe his own sensory experiences in his own subjective way. This was the reason why Titchener, the structuralist, doubted if psychology could ever be a science of behavior and according to him biology alone could be a Science of behavior.

Merits of Structuralism and Its Contribution to Education

Structuralism helped in establishing psychology as an independent and organized discipline by separating it from philosophy and metaphysics. It provided introspection as a method of studying behavior. Despite wide-spread criticism, introspection is still regarded as one of the important methods for studying behavior. What goes on inside one's mind during the course of a mental act can be experienced or explained only by the individual himself, and introspection is the only suitable technique that can be employed in extracting such reports. Consequently, studies in Educational Psychology can benefit from the use of this method.

Structuralism is credited with having taken the initiative in establishing the first psychological laboratory and employing the technique of systematic observation of the activities of the mind. It has resulted in making psychology a subject of scientific study and experimentation. What we find today in the field of psychology and Educational Psychology in terms of laboratory as well as field experiments can then safely be claimed as a positive contribution of the school of structuralism.

Functionalism

William James (1842-1910) the father of psychology in USA, is regarded as one of the pioneers of the functional school of psychology. Strongly influenced by the Darwinian theory and his own interest in anatomy, physiology and medicine. He adopted a biological approach to the study of the mind and led the field away from structuralism. He declared that something was definitely wrong in Wundt's and Titchener's approach. He claimed that consciousness or experience cannot be broken up into elements, and there is no way to separate ideas, thoughts, sensations or perceptions. Structuralism does not reveal anything about what the mind really does or how it goes about doing it. Knowing the composition or structure of the mind is not as important as understanding its activities or functions. Therefore, William James through his doctrine of functionalism advocated

the theory of mental life and behavior. He considered the mind to be a recent development in the evolutionary process, the function of which was to aid man's adjustment to his environment. The consciousness or mental life according to him is a continuous and flowing unity, a stream that cranes the organism in its adaptation to the environment. Our minds are constantly forging associations, revising experiences, starting, stopping, jumping back and forth in time for adding to our functional abilities to adapt to our environment. Elaborating his viewpoint, he further concluded that habits are nothing but functions of the nervous system. When we repeat an activity a number of times, our nervous systems are altered so that the next time we engage in it we do so automatically without much conscious thought.

During the subsequent years in the 19th and 20th century, ideas propagated by William James were consolidated on a more scientific footing by functionalists like John Dewey (1859-1952), James Rowland Angell (1869-1949), J.M. Cattell, Edward L. Thorndike (1874-1949) and R.S- Woodworth (1869-1962).

Merits of Functionalism and its Contribution to Education

Functionalism, regarded as a more scientific and more practical system of psychology than structuralism helped in making the system of education as practicable and useful as possible by the following contributions:

It laid emphasis on functionability of the contents of the curriculum by advocating that only those things should be taught to the children which they could apply in everyday life. The methods and techniques of learning were made more functionable through the ideas propagated by this system. Functionalists like Dewey felt that the emphasis of education and teaching methods should not be on the subject matter but on the needs of the students. Such learner-centered approaches in the methods of teaching opened the way for the discovery of new methods and devices in the teaching learning process.

This system widened the scope of psychology and educational psychology by developing a variety of new methods beyond introspection for studying behavior mainly based on scientific enquiry, systematic data collection and objective interpretation and by including in its sphere the study of many useful topics not covered by structuralism.

The field of measurement and evaluation related to psychology and education has also been enriched by functionalism with the introduction of certain valuable techniques and devices like the questionnaire, inventory, mental tests, and various other means for the objective description of behavior.

Functionalism opened the way for the study of psychology in terms of the adjustment of the organism to its environment. The study and problems of the individual, normal as well as abnormal were incorporated in the subject matter of psychology and educational psychology.

Functionalism paved the way for applied research in response to the application of psychology to the practical problems, particularly in the field of educational psychology. John Dewey, a strong advocate of functionalism, proved the relevance of the psychology of learning and motivation etc., by establishing his own school and integrating theory with practice. Such practical attempts combined with the theoretical ideas have been responsible for revolutionizing the modern system of education to a great extent.

Behaviorism

John B. Watson (1878-1950) put forward an entirely new doctrine named behaviorism which was quite contrary to structuralism and functionalism. He concluded that the whole idea of consciousness is absurd. Consciousness cannot be proved by any scientific test, for consciousness cannot be seen, touched, or exhibited in a test tube. Even if it exists it cannot be studied scientifically, because admittedly it is subjected only to private inspection. Therefore, if we intend to make psychology a science of behavior, we should concentrate only on the observable and measurable behavior. We have to discard altogether not only the concept of consciousness but also all mentalistic notions like soul, mind, mental life, images and ideas, etc.

Consequently behaviorism as a method of studying behavior focused its attention totally on the overt or observable behavior. For this purpose, it tried to reduce all of man's activity, including his thinking, feeling and volition to the level of that behavior which could be observed and objectively recorded. Thus, a behaviorist is not interested in the feeling of fear (because it is not measurable) but pays attention to the changes in heart

rate and blood pressure which are the effects of fear and can be objectively measured. The theory of behaviorism as propagated by Watson was in fact based on the findings of the Russian psychologist Ivan Pavlov (1849-1936), the propagator of the theory of classical conditioning.

In his classic experiment, Pavlov conditioned a dog to salivate at the sound of a bell by substituting that sound for the sight and smell of meat and concluded that all behavior is a response to some stimulus in the environment. Watson tried to apply this approach in the field of human behavior. In the famous experiment with an 11 month old baby named Albert, he conditioned the baby's behavior to fear a rat by substituting the rat with a sudden loud noise. He concluded that behavior is merely the response to some environmental stimulus. How we behave and why we behave in a particular way can be successfully demonstrated and explained through habit formation or conditioning. Thus conditioning through environmental influences and not hereditary endowments or innate differences is responsible for shaping the behavior of a child.

Behaviorism, thus, tried to project human beings as little more than rather complex machines which respond in a particular fashion to a particular kind of stimulus. The behavior of an individual may thus, be supposed to be controlled by environmental forces, and not by hereditary endowments or innate differences.

His strong convictions about the stimulus response automatization and environmental influences made Watson assert boldly in 1926: Give me a dozen healthy infants well informed and my own specified world to bring them up in and I will guarantee to take anyone at random and train him to become any type of specialist I might select – doctor, lawyer artist, merchant chief and yes, even beggar-man and thief, regardless of his talents, tendencies, abilities, vocations and race of his ancestors.

The doctrine of behaviorism propounded by Watson and his disciples, thus, ushered a new era in the field of psychology by making it somewhat materialistic, mechanistic, deterministic and objective like most of the physical and natural sciences. However, it suffered from a number of drawback, limitations and shortcomings. For this reason it has been subjected to criticism and has been modified and refined in a number of

ways by contemporary psychologists like Lashley, Tolman, Hull and Skinner. While Lashley devoted himself to neurophysiology and Tolman believed in purposive behaviorism, B.F. Skinner, a leading American behaviorist of the present age emphasized a system of learning known as operant conditioning, quite different from the type of conditioning advocated by Pavlov and Watson. The task of behavior modification he advocated and the teaching machines he popularized by using the principles of reward, wield significant influence in the field of psychology, education and medicine.

Merits of Behaviorism and its Contribution to Education

Behaviorists in the study of behavior rejected the notions of structuralists for figuring out what people were feeling or seeing or the functionalists' notion of how and why they were thinking. Instead, they focused on what was actually being done by the people and observed by the observer or investigator. In this way, they introduced the scientific method for studying behavior, which is essentially based on the objective observation of the behavior and the events. Behaviorism thus helped in replacing introspective measures with the scientific and objective measures. Behaviorists, while giving second place to hereditary characteristics highlighted the role of environment in shaping and modifying the behavior of children. It helped in revolutionizing all the programmes and methods related to education training and rehabilitation by emphasizing a greater need to provide the best possible learning situations and environment for better growth and development of the child.

The approach to dealing with abnormal and mentally sick persons as well as delinquent, maladjusted, backward and problem children was also drastically changed on account of the experimental findings of the behaviorists. In particular the techniques of shaping behavior and the behavior modification programmes advocated by the behaviorists ushered a new era into this field.

Since behaviorists did not believe in entities like the 'mind' and the mind-body problem, the mental approach to human behavior was altogether discarded. As a result, all concepts related to the doctrine of mentalism like sensation, emotion perception were dropped from psychology and education texts giving way to new concepts like stimulus

response, habits, learning, and conditioning. Behaviorism helped in extending the scope of educational psychology to include the study of animals as a way to learn more about human nature.

Behaviorism advocated the use of reinforcement and rewards (in place of punishment and unpleasant experiences) as inducement for the acquisition of desirable behavior and for giving up the undesirable.

Behaviorism highlighted the role of motivation and definition of the aims and purposes in learning and shaping of behavior.

Behaviorism gave rise to new ideas and innovations in the field of learning and instruction like programmed learning and individualized self instructional programmes involving teaching machine and computer-assisted instruction.

Gestalt Psychology

The reaction against structuralism and functionalism was not confined to the USA. In Germany it gave birth to a new school called Gestalt psychology, quite distinct from behaviorism. The most prominent members of this school were Max Wertheimer (1880-1943), Kurt Koffka (1886-1941), Wolfgang Kohler (1887-1967), and Kurt Lewin (1890-1947).

‘Gestalt’ is a German word, the nearest English translation of which is configuration or, more simply, an organized whole in contrast to a collection of parts. Therefore, Gestalt psychology is opposed to the atomistic and molecular approach to behavior. According to it, an individual perceives the thing as a whole and not as a mere collection of its constituents or elements. To a Gestalt psychologist, the meaning of sensation or perception is always related to the total situation, and perception always involves a problem of organization. A thing is perceived as a relationship within a field which includes that thing, the viewer, and a complete background incorporating the viewer’s purpose and previous experiences. Gestaltists also rejected the mechanistic approach to behavior as advocated by the behaviorists through a simple stimulus-response connection. They asserted that a sort of organization definitely exists between the stimulus and response which holds in forming a new gestalt or an organized whole. For

example, when one looks at a tree what one sees is a tree. Even though a tree consists of color, brightness and a form but when perceived by the mind all these components become a pattern, or a gestalt. The Gestaltists further claim that when the components of a thing are brought together by the mind, something new (even more valuable and comprehensive than the original components) may emerge, reinforcing the statement: “the whole is different from the sum of its parts”. As a result, human behavior is characterized as an intelligent behavior rather than a simple stimulus-response mechanism. An individual perceives the situation as a whole and after seeing and evaluating the different relationships in relation to the available environment, takes the proper decision in an intelligent way although quite often he does so impulsively. Gestalt psychology used the term ‘insight’ to describe this type of human behavior and summarized the behavioral process as consisting of the following three steps:

- Perception of the situation as a whole.
- Seeing and judging the relationships between various factors involved in the situation.
- Taking an immediate decision and behaving accordingly.

Gestalt psychology, in this way, stood in strong opposition to traditional psychology comprising structuralism, functionalism and behaviorism. Specifically, it deplored the brick and mortar concept of structuralism i.e. elements, or ‘bricks’ bound by association or ‘mortar’ and were equally dissatisfied with the stimulus-response conditioning or machine-like explanation of human behavior.

Merits of Gestalt psychology and its Contribution to Education

Gestaltists maintained that the whole is always greater than its constituent or parts. This proposition influenced the field of education in many aspects as we now discuss.

- i. In the construction and organization of the curricula and syllabi, due consideration is being given to the Gestalt principle. The concerned subject matter of a particular subject is always organized as a whole and the curriculum comprising different subjects and activities is so framed as to reflect unity and cohesiveness among them.

- ii. Stress is being laid on an inter-disciplinary approach in education.
- iii. The Gestalt approach has been duly acknowledged in methodology and techniques of teaching and learning. This has resulted in presenting the learning material in a Gestalt form (as an organized whole) and then proceeding to the parts.
- iv. Due stress on the Gestalt (organized and combined) efforts on the part of teachers, administrators, parents and other members of society is being laid in the education and welfare of children.

Gestaltists laid great emphasis on the role of motivation, and definite goals and purposes in any type of learning. This has resulted in providing a central role to motivation in any scheme of learning and education. The emphasis on setting clear-cut objectives, defining them in definite behavioral terms and linking education with the needs and motives of the learner may be said to be some of the great contributions of Gestalt psychology.

Gestaltism has a notable feature that it makes the task of perception, learning and problem solving an intelligent task rather than a piecemeal molecular function or a mere stimulus-response mechanical process. It has provided a scientific and progressive method of problem solving based on the cognitive abilities of the learners.

Gestaltism has necessitated research in the field of organizational climate, institutional planning, group dynamics etc., for organizing the factors in the environment of the learner into a meaningful whole so as to put in the best efforts for managing the affairs of education and welfare of the individuals.

School of Psychoanalysis

Psychoanalysis as a system or school of psychology was the brain-child of Sigmund Freud (1856-1939), a Viennese physician. This movement put forward views quite contrary to structuralism, functionalism, behaviorism or gestaltism for explaining human behavior. Freud, the father of this movement presented a new dimension in the field of psychology. The influence of psychoanalysis in terms of the totality of human behavior including the conscious sub-conscious and unconscious behavior, structure of the psyche, the concept of repression catharsis in the form of revealing the unconscious,

the psycho-sexual development and giving sex its rightful place in the realm of human behavior will always remain praise-worthy and memorable.

In course of later developments in the psychoanalytical movement an association for the development of psychoanalysis was formed in 1902. The personalities associated with this school became famous either by virtue of their efforts in advocating Freud's point of view or because of the establishment of their own psychoanalytic systems based upon their own views. Two systems namely individual psychology established by Alfred Adler (1870-1937) and analytical psychology established by Carl Jung (1875-1961) are worthy of note. In these systems, an effort was made to provide some general urge as a substitute for sex which, in their opinion, was given excessive importance by Freud.

Adler provided a substitute in the form of the self-assertion or the power-seeking motive and laid emphasis on the individuality of the subject by advocating the proposition of the life-style. Jung, on the other hand replaced the sex urge with the more comprehensive term 'libido' or the life urge'. We shall discuss these systems in detail later. The other notable neo-Freudians or rather, neo-Adlerians of the modern age have been Freud's daughter Anna, Karen Horney, Harry Stack Sullivan, Erich Fromm, Erik Erickson and Heinz Hartmann, etc. The efforts of these researchers have led to modifications in the traditional psychoanalytical approach, particularly in terms of playing down of the role of sex and stressing the role of society

2.10 Let Us Sum Up

In this unit learners have become acquainted with the meaning of educational psychology, its importance as well as the concept of psychology of learning. The motive behind this is to ensure that the learners have foundation knowledge of educational psychology and learning before actually advancing in other concepts. Educational Psychology is an applied psychology which seeks to find and provide necessary solutions to problems confronting the teacher and his/her students in the classroom. The importance of educational psychology cannot be over emphasized. Examples of its

relevance are: to equip the teacher on how to tackle students disciplinary problems in the classroom, guide the teacher in the selection of the learning contents according to the students' cognitive capability, and to provide useful information about the differences among learners and how these can be taken care of so that every member of the class can benefit in the classroom activities. Psychology of Learning provides necessary theoretical and empirical data regarding the learning process.

2.11 Check your Progress

1. State the historical development of Educational Psychology?
 2. Who were the key thinkers in the history of Educational Psychology and what were their main ideas?
 3. Define Educational Psychology? Discuss in detail the functions and scope of Educational Psychology?
 4. Explain briefly the scope of Educational Psychology?
 5. What do you consider as the main objectives of Educational Psychology?
 6. What is the relevance of Psychology to the learning process?
 7. Give a detailed account about the Schools of Psychology and their bearing on education?
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2.12 Suggested Readings

1. Ayeni, O. (1991). Psychology of Human Learning for Teachers. Ilesa: College of Education
 2. Burns, R. (1995). The Adult Learner at Work Sydney: Business and Professional Publishing Ltd.
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LESSON NO 03: Understanding Learner's Growth & Development

Lesson Structure

- 3.0 Introduction**
- 3.1 Objectives**
- 3.2 Meaning of Growth & Development**
- 3.3 Stages of Growth & Development**
- 3.4 General Principle of Growth & Development**
- 3.5 Aspects of Development**
- 3.6 Physical Development Process**
- 3.7 Mental Development**
- 3.8 Cognitive Development**
- 3.9 The Crux of Cognitive Development**
- 3.10 Piaget's Theory**
- 3.11 Process of Cognitive Development**
- 3.12 Stages of Cognitive Development**
- 3.13 Problems during Various Stages**
- 3.14 Implication for Classroom Learning**
- 3.15 Emotional Development**
- 3.16 Social Development**
- 3.17 Educational Implication of Studying Growth & Development**

3.18 Let Us Sum Up

3.19 Check Your Progress

3.20 Suggested Readings

3.0 Introduction

Of all living beings, human beings require the longest period of maturation and learning before they are self-sufficient. A longer time period is required to reach maturity so far as complex organism's nervous systems (as in human beings) are concerned. All the developmental psychology is concerned with how and why different aspects of human functioning develop and change across the life span. These include different types of development as physical, social, emotional, intellectual, language, conceptual etc. Developmental psychologists study the development because they are interested in discovering the repertory of activities with which he begins life and the ways in which his behaviour changes and matures with age. Is it "human nature" for young children to be cruel to animals? Do kindness and consideration develop as a result of training? Does mental development proceed regularly? Do girls grow up earlier than boys so far as mental, social, physical etc. development is concerned? Is the adolescent period really a crucial? All these questions are concern of developmental psychologists. Role of heredity and environment in growth and development has been the matter of debate for centuries.

3.1 Objectives

Dear students after reading this lesson, you should be able to:

- Explain the meaning of growth and development;
- State the difference between growth and development;
- Outline the principles involved in the process of growth and development.

3.2 Meaning of Growth & Development

The words growth and development are usually treated as synonymous, as they both indicated for increase, but there are differences between these two so far as psychology is concerned. In order to understand the meaning of Growth and Development, one will have to understand the differences between them. Growth is related with cellular multiplication while Development is related with overall performance; however growth is implicit in development. Development is wider than growth. The changes in shape, size, length, weight etc in different body parts from infancy to childhood, from childhood to adolescence, from adolescence to adulthood comes under the umbrella of Growth. Thus Growth can be measured and observed directly. While on the other hand, these changes in human beings are working appropriately is the concern of Development. In some of the cases we can easily observe that Growth is there but as per Growth that particular individual is not able to perform. Thus, development is concerned with synthesis of body structures and body functions. According to Hurlock, “Development is not limited to growing larger. Instead, it consists of a progressive series of changes towards the goal of maturity. Development results in new characteristics and new abilities on the part of the individual”.

3.3 Stages of Growth & Development

Although each individual grows at his own unique pace and forms his own style of life, all normal human beings pass through several fairly well defined stages of growth during the life cycle:

- **The prenatal stage:** from conception to birth- nine months.
- **The neonate-infancy, early childhood stage:** neonate, the first week or two of life; infancy, the first two years; early childhood, the years of the nursery school and the kindergarten, approximately ages two to five inclusive.

- **Childhood:** the six years of the elementary school, approximately ages six to eleven inclusive.
- **The stage of adolescence:** approximately the ages of eleven or twelve to eighteen, thereby including the years from the beginning of the junior high school to the end of senior high school.
- **The stage of youth:** generally inclusive of the years from eighteen to twenty-four years- thus encompassing the four years of the undergraduate college and perhaps the first year of the graduate school or of professional training and apprenticeship; these are the years characterized by the current interest in “The Youth Problem”.
- **The stage of early and later maturity:** the years of manhood and womanhood, from perhaps twenty-five to sixty five years.
- **The stage of senescence:** “old age”, varying with the individual, beginning perhaps with some persons in the period of sixty-five to seventy, with others at seventy to eighty; the stage of decline, forgetfulness, etc.

3.4 General Principle of Growth & Development

Several studies have been done by the psychologists for Growth & Development. It has been proved now that changes as a result of Growth and Development follow certain principles. Some of the important principles are as follows-

1. **Principle of Continuity:** According to this principle, the process of Growth and Development is continuous; however speed varies as per the stage.
2. **Principle of Individuality:** According to this principle, the process of Growth and Development varies from person to person.
3. **Principle of Modifiability:** According to this principle, the modification is possible in the speed of direction of Growth and Development.

4. **Principle of Definite and Predictable Pattern:** According to this principle, the process of Growth and Development is uniform in some extent. Majority of human beings follow that pattern.
5. **Principle of Integration:** According to this principle, there is integration in process of Growth and Development.
6. **Principle of Interaction between Heredity and Environment:** According to this principle, the process of Growth and Development is the result of interaction between heredity and environment.

3.5 Aspects of Development

On the basis of changes in human being, Development can be classified as follows-

1. Physical Development
2. Mental Development
3. Social Development
4. Emotional Development

3.6 Physical Development

The term “physical growth” refers to becoming larger and heavier and indicates increases and changes that are both additive and augmentative. Physical growth can be measured quantitatively in inches, pounds or other units. The heart becomes bigger, the bones become longer, thicker and heavier. In general, the body grows by adding more inches in height and circumference and more pounds in weight.

“Physical development”, on the other hand, indicates progressive change and advancement toward maturity. Development connotes a process of maturity and functional improvement which takes place because of qualitative as well as quantitative changes in structure and form. Development indicates more specifically than growth the changes in character that takes place. Bones grow larger, but they also develop as a

result of changes in their material composition and structural form. After birth, the brain cells of an individual do not change in number, but they do grow larger, undergo chemical change, form medullary sheaths and become more complex individually. Most physical development, of course, is dependent on physical growth; and because of this basic relationship, the terms growth and development are used in close association.

H.V. Meredith has listed five ways in which growth and development are manifested. The simplest and most evident is change in size; e.g. the whole organism changes from just a speck to the adult male or female. A second index of growth and development is change in number; e.g. from the union of two cells- sperm and ovum- comes an adult body of 20 trillion cells. Another aspect of growth and development is change in kind; simply illustrated by the change of cartilage to bone- a specific change the progress of which, incidentally, is a good index of physical maturation. A change in position takes place as the heart, intestines and limbs change angles and location. Also there is a change in relative size; e.g. the head becomes relatively smaller and the legs relatively longer.

3.7 Physical Development Process

Life begins with the union of two germ cells. The germ cell of the father fertilizes the germ cell of the mother, and a new life is on its way- from the union of two cellular specks a hitherto nonexistent human being begins his growth and development in the body of his mother. The growth and development that occur during the 9 months of prenatal life are astounding, especially when one considers that the prenatal period constitutes only about one percent of a person's life span. Following conception, the embryo grows very rapidly, but it is so minute originally that it is not until the second half of pregnancy that the unborn child experiences a rapid measureable gain in weight. About six times weight growth takes place during the second half of gestation as takes place during the first half of pregnancy. At birth the infant has reached a relatively advanced stage of development. He possesses all the

organic parts he will ever have. The teeth, which started to form about two months after conception, begin to make their appearance several months after birth. At birth all the sense organs- eyes, ears, nose, skin and mouth- are ready to function and actually do so shortly after birth.

The child grows most rapidly the first year, at a declining rate the second year, and then at a slower but steady pace for about a decade. When childhood merges into adolescence, there is again a period of faster growth. Adolescence slowly becomes adulthood and the prime of life; then follow progressive deterioration, old age and death.

The second or adolescence growth spurt is the period of maximum growth of the skeletal and muscular systems, which in large part is responsible for the accompanying substantial increase in height and weight. The stomach, heart, liver and other visceral organs grow faster than they did previously, as they do to the thyroid, adrenal and pituitary glands and the islands of Langerhans. The genital pattern of growth is almost the exact opposite of the pattern of growth of the brain. When the brain is growing most rapidly, the genitals are growing least rapidly; when the brain is growing least rapidly, there is a rapid growth of the genitals. The age when both the general and the genital growth spurts start, that is, the beginning of adolescence, is called puberty and occurs at the age of twelve or thirteen, on the average. But individuals within each sex vary here, and girls are generally earlier than boys. Puberty is sometimes referred to as marking the beginning of a stage of development when boys and girls are capable of reproduction.

Body Proportion & Changes

During growth from infancy to adulthood all body parts become bigger; but proportionately the head is only one-half as large in adulthood as in infancy, the torso remains about the same, and the legs increase in proportion from about three-eighths the total body height in infancy to about one-half the total height in adulthood. The arms become proportionately a little longer in adulthood. Girls have achieved a higher

percentage of their adult height and weight at earlier age than have boys. Girls and boys at birth are about 20 and 21 inches long and weigh about 7 and 7.5 pounds respectively. Boys and girls differ very little in height and weight until after the middle teens, when the boys grow more rapidly and become on the average about four inches taller and twenty five pounds heavier than the girls. From about age eleven to almost fourteen the girls are actually taller and heavier on the average than the boys. On the basis of three height categories- short, average and tall four out of five children will be in the same categories when they become adults. One out of five will change from his childhood category to one higher or lower, but rarely is there a jump or drop of two categories, such as from tall to short or vice-versa. Most children and teen-agers do not deviate excessively from the weight and height averages of their ages. Those who are very large or small for their ages need to be studied to ascertain the reasons for and the emotional effects of their large deviations from their norms. Growth, development and experience that accompany growing older give a child the maturity level and the readiness for acquiring needed motor skills.

3.8 Mental Development

From conception to adulthood, as the body grows and develops, the mind grows and develops. This mental change is indeed partially dependent upon physical change. The growth of brain and the rest of the nervous system provide the structural basis for the process of mental maturing. At birth, a child is able to make vocal noises in the form of babbling and crying. Soon the sounds begin to differentiate between persons and things. By the age of one year or a little later a simple word or two may be spoken. After this happens, the vocabulary increases rapidly. Of course, the vocabulary growth rate is different for each person; usually the brighter child, the more vocabulary he acquires per year.

Memory is the basic ingredient of intelligence and learning, without it there could hardly be either. At birth, there is little memory; it grows from birth to adulthood.

For instance, there is an increase in memory span from year to year during childhood. The ability to think also develops with increasing age, passing through three general stages: (1) enumeration (2) description (3) interpretation. These three general stages of thought have important implications for teachings, even with children in the lower grades, who, though not very mature mentally, can be guided into elementary habits of interpreting. History, Geography, Sociology, Arithmetic, Language, Grammar- indeed, almost every subject- can be taught at any or all of the three levels. Mental development is also evidenced by the increasing capacity to solve problems. Originality, creativeness, imaginative thinking etc. indicate one of the highest levels of mental activity. Just as there is an age when a person stops growing taller and stronger, so there is an age when person's mental capacity also stops increasing.

3.9 Cognitive Development

Cognition, creativity, intelligence and language development are the decisive processes as far as learning in a child is concerned. For a teacher it is curious and crucial to identify the process how a student becomes gradually a sophisticated thinker from the stage of a wanton boy. Cognitive development is a wide term to denote all the mental procedures towards sophisticated thinking and serious learning outside or inside classroom. Piaget and Bruner are the pioneers in explaining prominent processes of cognitive development in a child. 'Piaget's study tries to explain the relationship between biological organization and intellectual structures as it enquires, basically into the mental process. Piaget revaluated the entire arena of child Psychology with his specific terms as 'Schema', 'Assimilation', and 'Accommodation' to explain the process of cognitive development in a child from infancy to adolescent period.

Bruner, on the other hand, was much inspired by the Piaget's theory but his theory is different in many ways however fundamental ideas seem to be shaped by Piaget's concepts and some by Gestalt Psychologists. His concept of cognitive development is based on 'to discover' the 'structure' of the subject material as to

Bruner learning is an ‘Active Process of Discovery’ which is largely influenced by the previous knowledge and existing ability to learn.

For Classroom teaching it is beneficial to know the specific role and features of language development through stages and characteristics of various mental structures and their problems at cognitive levels. This unit provides an important aspect of child Psychology especially useful for teaching at secondary school levels and equally fruitful for parents in order to peep into the world of child for its intellectual growth and development.

3.10 The Crux of Cognitive Development

Human brain has enormous capabilities of acquiring, assimilating, adapting and processing knowledge. Various mental powers are reflected in the forms of imagination, memory, retention, thinking, decision-making and so on. Human being is surrounded by a rich social environment including culture and heritage. A child’s brain is open to assimilate the vast world surrounding itself. In turn child has a lot of curiosity to explore and experience the objects and situations. This enhances learning in child. Cognition thus is the primary process in child to know, to understand the meaning according to the ability of mental structure, to perceive in different symbolic or simple ways or common comprehension of objects as they are visible to the child.

Cognitive development is the gradual growth in the capability of comprehension with growing physical stages. Every child is special having its own unique way of observation and analysis of its perception. So the Process of Cognitive Development, in spite of having some similarities, differs many times from child to child. To Piaget cognitive development passes through four broad stages from infancy to adolescence while Bruner concludes that there should be three modes of cognitive development; *Enactive, Iconic and Symbolic*. Cognitive development can be explained in terms of maturity and physical growth as Piaget relates it to the changing mental structure with the transformation of stages.

3.11 Piaget's Theory

Piaget's theory is concerned with the child's capability of receiving the knowledge and understanding it over time with increasing maturity and interaction with the environment. The theory tries to explain:

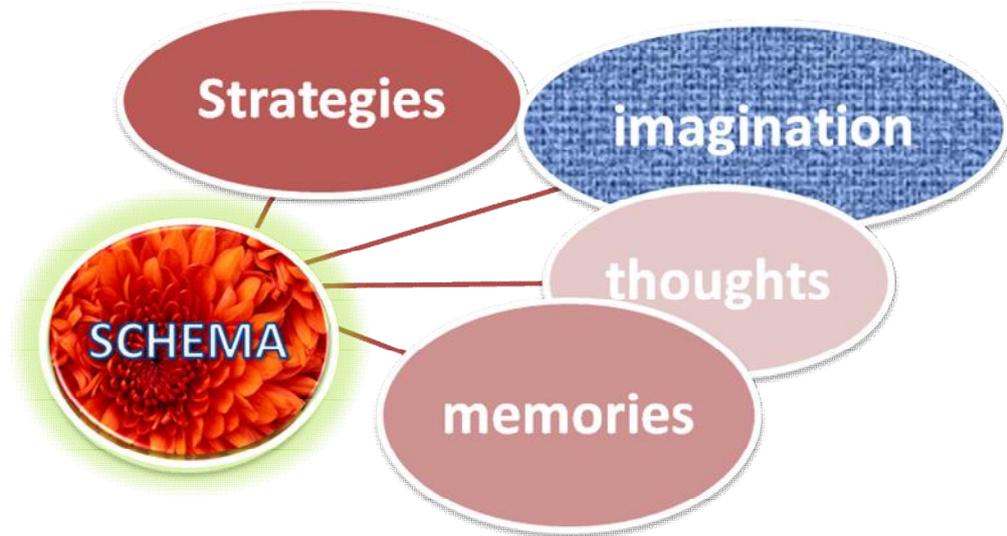
- ❖ How a child adapts objects and events in his own unique way and interprets them according to its own mental ability.
- ❖ How he learns to distinguish between the characteristics of different objects.
- ❖ How he comes to know the causes of change in behaviour and pattern of objects.
- ❖ How children come across the environment & events and understand them.
- ❖ Specific attributes of children while they learn with developmental stages.

Cognitive Development theory of Piaget is also called 'genetic epistemology' because it defines and discloses the meaning of various core concepts and coins new terminology which helps to explain the relationship between biological composition and intellectual structures. It takes into consideration the role of environment as driving factor to the process of cognitive development.

Core Concepts Used in the Theory

Piaget uses various concepts as ways to the process of cognitive development in a child: The diagrammatic representation is given in coming pages.

- ❖ **Schemata:** It is the group of qualitatively different mental activities and ways of organizing and responding to experiences.



SCHEMETA (singular: Schema): A Group of Various Mental Activities

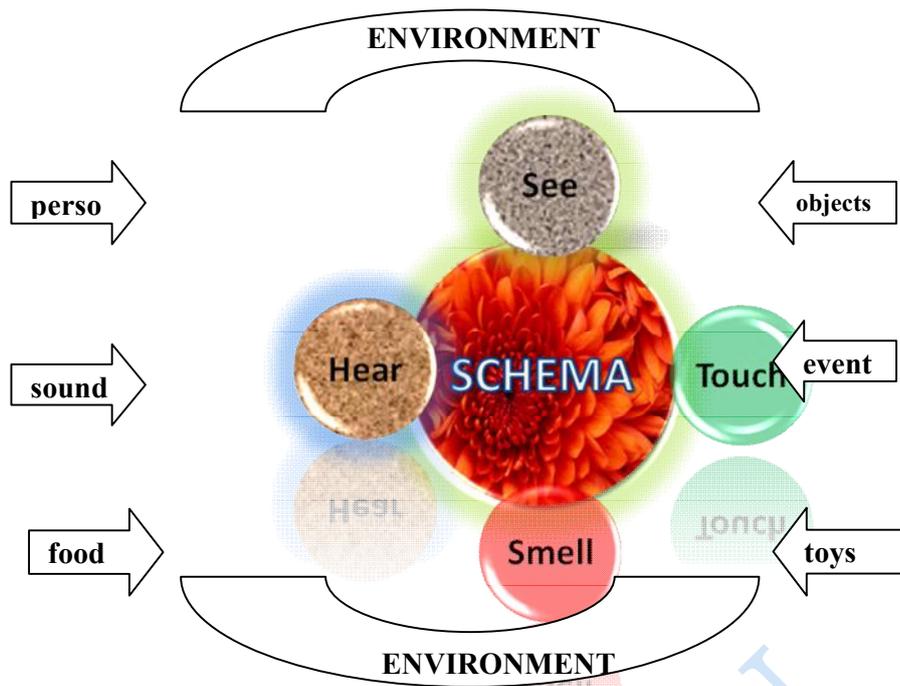
For Piaget, behavioural parallel of structure in biology is the Schema (Piaget, 1950). Schema (singular) has various types relating to different activities as ‘sucking schema’, ‘grasping schema’, ‘riding stairs’ etc. Fig 1 shows symbolic representation of the mental activities.

- ❖ **Assimilation:** To receive the information from the environment in the form of a picture, word as symbol, sound, figure or event. He ‘takes the information in’ to his mental structure.
- ❖ **Accommodation:** It is the complementary process to ‘assimilation’. The child accommodates and organizes the ‘assimilated’ information through existing cognitive structure to environmental demand.
- ❖ **Constructivism:** The child creates its own concept and works on the objects. It is the interaction between child and objects.

- ❖ **Stages:** Piaget divides the various processes into four stages viz. Sensory motor, Pre-operational, Concrete operation and Formal operation.

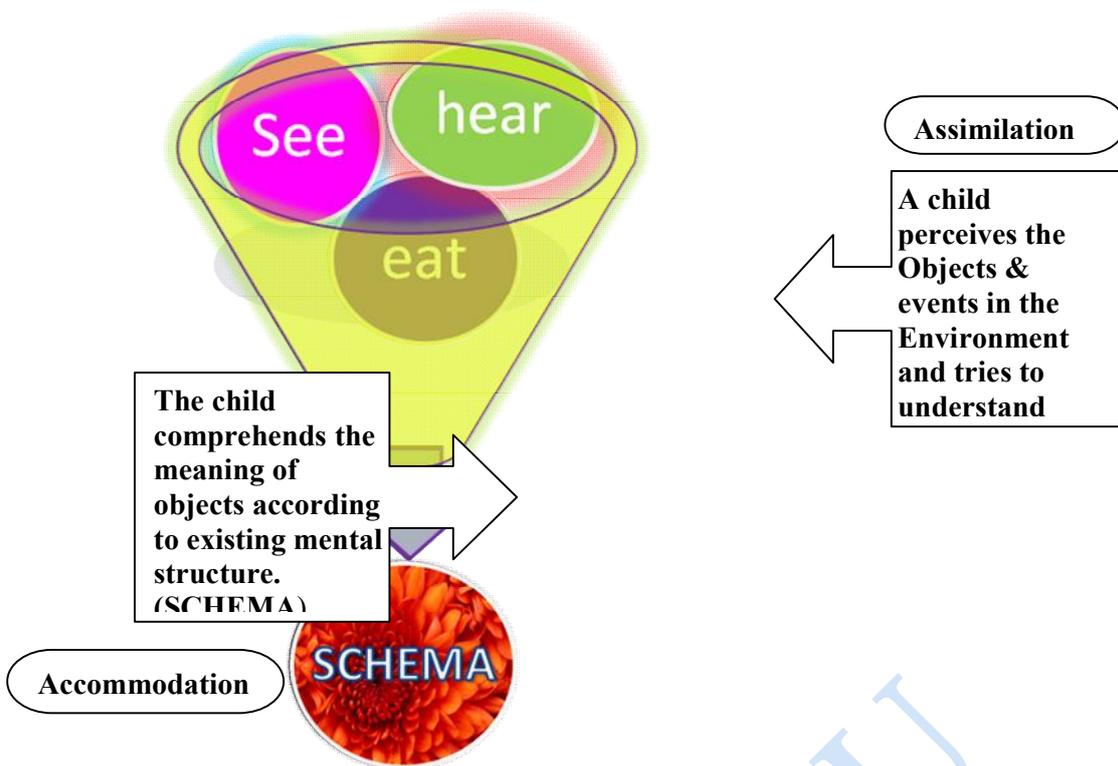
3.12 Process of Cognitive Development

The 'Schemata' which are acquired in infancy are exercised and changed in later life. The process of change constantly encounters with the psychological processes of assimilation and accommodation and finally reaching 'equilibrium' in forming the concept. At the sensor motor (0-2 yrs) level the infant picks up things and grasps them. This is called 'assimilation'. If grasping schema is inadequate, the object is too small; it must change to manage the new situation. This is 'accommodation' at work. The play activities of infants are the examples of assimilation. The infant takes a stick and assimilates it to his available 'schema'. Making it a horse, cow or train. Imitations are also the examples of accommodation. The diagrammatic representation is given in next page.



Assimilation of Information to Schema (symbolic representation)

Through the process of assimilation and accommodation the 'schema' or mental organism attempts to maintain balance between itself and changing environment, called as equilibrium. Assimilation takes place through sense organs as ear, hands, eyes etc. The process of accommodation is like a liquid which accommodates its shape according to the container. Symbolically child's schema behaves like a broad pipe through which 'perceptions' pass accommodating them to environmental demand as is represented in fig.3.



Accommodation According to Capability of Schema

3.13 Stages of Cognitive Development

The stages of cognitive development are related internally as they represent forms of adaption but qualitatively these forms vary. It means that adaptive functions also transform as child transforms from one stage to another. Piaget grouped the entire process in to four stages.

- * Stage First: The Period of Sensorimotor Adaptation 0-2 years
- * Stage Second: Pre-operational Period 2-7 years
 - *Pre-Conceptual* 2-4 years
 - *Intuitive Phase* 4-7 years
- * Stage Third: Concrete Operational Period 7-11 years

* Stage Fourth: Period of Formal Operation:

11

years onwards

Each stage has its own characteristics which may also be influenced by place and Environment of the child as they are not static to the age boundaries as Piaget suggests. Some specific features of child's cognitive development in terms of activity and ability are:

Stage First:

- From reflexive to a reflective organism
- Focus on immediate sensory and motor experience
- Primitive understanding of time and space by weeping, fearing and feeling loneliness.
- Attainment of the permanency of objects by fixing eyes at one place.

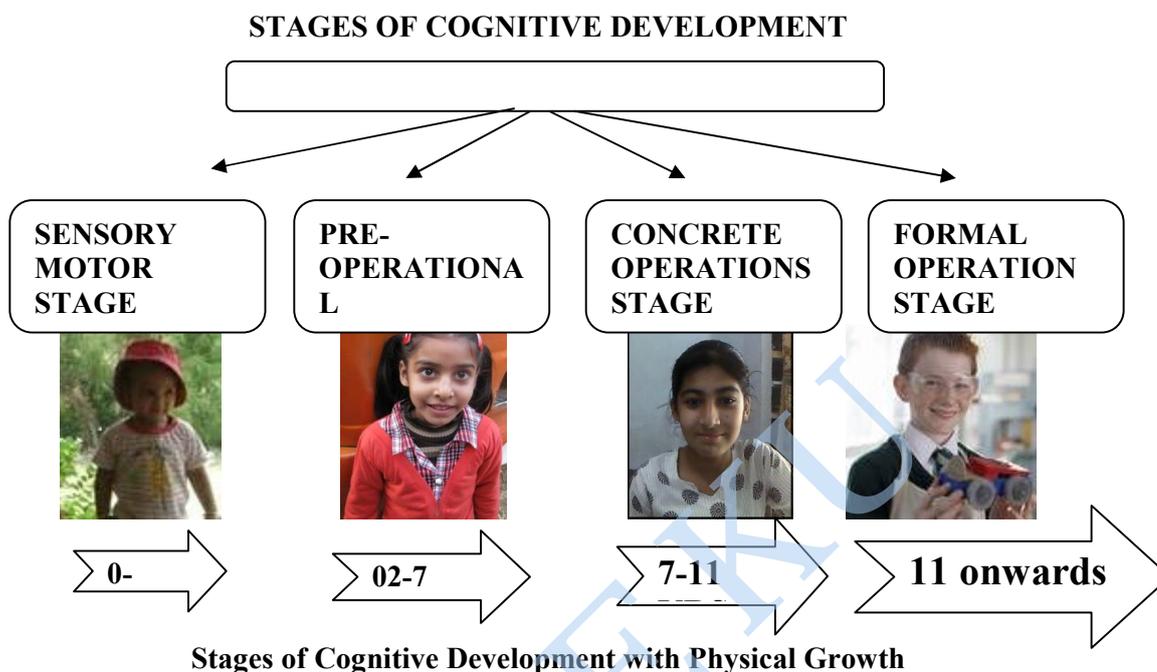
Stage Second:

- Development of symbolic functions
- Intuitive problem solving
- Symbolic use of language
- Imitation of others starts.
- Various problems arose relating to conservation, irreversibility and reasoning based solution.

Stage Third:

- Dramatic change in thinking process
- Logic and objectivity increase gradually
- Conservation and irreversibility problems do not hamper cognition process
- Grouping and classifying objects on certain bases, becomes easy.
- Use of fantasies, symbolization and ego-centric statements in explaining the situations.
- Still confined to concrete world, lack of abstract ideas to solve the problem.

- Stage Fourth:
- Application of logical rules to ideas
- Use of Cause-effect relationship in finding out the reasons for various events
- Ability to conclude using alternative- hypothetical consequences
- Abstract concepts of science, fiction and literature can be understood as jokes, irony, relativity, tragedy, death and life etc.



3.14 Problems During Various Stages

Most complicated obstacles are experienced during the Pre-operational period in which the infancy is converted in to childhood passing through two equally important stages; Pre-conceptual period and Intuitive period. A child faces following problems regarding cognition:

1. **Problem of Conservation:** Child feels difficulty at four levels during 4-7 yrs-
 - * Conservation of size
 - * Conservation of weight

* Conservation of volume

* Conservation of number

2. **Problem of Irreversibility:** A child cannot reverse the situation to the original point of starting. There is lack of transformation. Piaget gives a fine experience to explain this difficulty level.

A four year old subject is asked;

“Do you have a brother”?

He says, “Yes”

“What is his name?”

“John” he replied.

“Does john have a brother?”

“No” the child says. (Lack of reversibility)

3.15 Implication for Classroom Learning

Now you must have learned major points and concepts of cognitive development theories. You should learn how to apply this learning by you in your classroom. Some points may help you in this regard:

- Be sure about your approach in the classroom. It should be positive, enthusiastic and encouraging the students to learn.
- Behaviour of the teacher also enhances learning if it is supporting and sympathetic.
- Content Knowledge, psychology of the learner and pedagogical skills are the keys to success.
- Socialization of students should be promoted through conducting debates, free conversation, excursion, discussion and group activities.
- Teacher must ensure the support of learner in the process of learning because learning is not possible with a passive learner.

- Teacher should avoid just cramming activities and promote developmental activities.
- Piaget's and Bruner's views in classroom learning may be applied for effective learning as: Piaget's theory helps the teacher to plan and organize the material according to the level of mental structure for different age groups so that assimilation may be effectively processed.
- Learning material should not be as easy as to be grasped and assimilated at one time. In that condition further development of new mental structures will hamper.
- The process of cognitive development is not rigid to age boundaries rather one stage is mixed with next stage so teacher should understand the gradually increasing complications of mental structures and treat the students accordingly.
- Different stages also help to choose teaching methods for different age groups according to the psychological and cognitive characteristics of the students.
- Bruner's learning theory emphasises 'simple to complex' approach in classroom. He says that learning should be inductive.
- A teacher must help students in building coding system in order to comprehend the concepts.
- Teacher should arrange the learning material in spiral curriculum away from simple to complex form' according to the cognitive level of student.
- Teacher should let the students find out the solutions of different situational problems and give them opportunity to apply new learning to many situations.

3.16 Emotional Development

The learner's emotions are involved in all his activities at school. Emotions are also constantly involved in the learner's and teacher's relations with people at school. Feeling towards others may range from spontaneous friendliness to deep dislike. There may be an undercurrent of anxiety and resentment in the learner's attitude toward

pupils with whom he competes. Emotions ranging from love hatred may characterize his attitude toward his teacher. The feelings and impulses that constitute the emotional life of the child are interwoven with all his thoughts and actions. At birth the child does not show readily distinguishable signs of fear, anger, joy or grief. With the passage of time more clearly differentiated patterns emerge. With the further passage of time, the child increasingly acquires the ability to moderate his display of emotions so that it becomes more and more difficult for the adult to know whether the child is angry, afraid or depressed.

As the child becomes older, he also becomes better able to disguise his feelings or express them in ways that do not clearly reveal what is that disturbs him. For this reason, adults who would understand the child must try to look beneath the surface signs of emotion. To do so they must, as far as possible, understand their own emotions. A person's understanding of others is not likely to exceed his understanding of himself.

As a child matures, as his activities and interests expand, and as he gains in understanding of the world about him, the circumstances that arouse his emotions change. The young child, relatively helpless and lacking in understanding, is frightened or angered by events that he can later handle quite casually. On the other hand, he is unaffected by many events that disturb him at a later level of maturity, when he is better able to perceive what is at stake. In like manner, he may be delighted by happenings that will later bore him, and be impervious to happenings and opportunities that will later give him a thrill. At all ages a person's ability to learn, his freedom to venture, to try himself out, to use his capacities will be influenced by his emotions.

In early infancy the child's physical and emotional well being and his freedom to express himself and learn depend heavily upon the care and affection he receives from others. From an early age he is also capable of showing affection for others. As he matures, the assurance that he can count on the affection of his elders continues to be

an important factor in his life. As he grows older, also, it becomes increasingly important for him to be accepted by his peers.

Throughout the period of development, children have an impulse to exercise their growing capacities. A major source of satisfaction comes from opportunities to put their abilities to use. Boredom, resentment and sometimes fear will arise if they are made to sit idly in school or to go through the same familiar emotions again and again or if they are assigned to tasks beyond their abilities.

To deal with a child who is angry or afraid, one needs to look not only for specific conditions that thwart or frighten him but also for conditions in the general background of his everyday experience and personality development that influence his tendency to be angry or afraid. To understand the child who is anxious, and to look beneath the many disguises of anxiety, it is important for the teacher to try to face his own anxieties.

3.17 Social Development

Socialization is on its way when the infant begins to distinguish between individuals. With increasing age the child becomes more outgoing and engages in cooperative activities and egocentricity diminishes. We all realize that man's life is, among other things, a constantly unfolding pattern of social learning and change. Social maturity is evidenced by an individual's capacity for making and keeping friends. To be effective in social relations, a person needs to acquire the social skills. Promoting the processes of socialization and adjustment to the environment is being recognized as an ever more important function of the school, in which valuable experiences are derived from group activities and where effective boy-girl relationship can develop. Personal responsibility and intelligent self-interest are evidences of social maturity and should not be confused with extreme self-centeredness and selfishness. Some individuals who spend much time in solitary activities pursuing their personal interests are nevertheless socially adequate.

Socialization is a significant process only when its basic factors are comprehended. It is not possible to state with certainty about the fundamental elements in socialization, but we do know that, as Kluckhohn and Murray point out: *Beginning in the nursery, the process of socialization continues through-out life. Among other things, what must be learned is: the power to inhibit, or to moderate, the expression of unacceptable needs; the ability to transfer cathexis from a prohibited goal-object to an acceptable substitute; the habitual and automatic use of a large number of approved action patterns (methods, manners and emotional attitudes); and the ability to adapt to schedules (to do things at the proper time, keep appointments, etc.). it is assumed that, having acquired these abilities, the average person will be capable of establishing satisfactory interpersonal relations within the legal and conventional framework of society. When the child begins to behave in a predictable, expectable manner it is well on the road to being socialized.*"

McGuire and Havighurst develop their conception of socialization as, *"Socialization is the process of presenting alternate channels for individual behaviour together with positive and negative sanctions which will lead to acceptance of some and rejection of others. It emphasizes the influence of social groups, formal and informal, upon the personality of the individual."*

A human being gradually evolves from the extreme individualism of the infant and accompanying dependency on a few persons, to outgoing membership in an adult social group and dependency on its many members. When nearly a year old, the infant starts paying attention to others of the same age; he will then reach out and take hold of another child's body parts. From this time until they start school, children play together, but the play remains largely individualistic. When children enter school, they enter an environment of play and work activities that tend to socialize them. They are now members of a defined group, having experiences that cause them to become group minded. During infancy and the following preschool years and in the primary grades there is not much consciousness of sex. Shortly before puberty, boys become more

conscious of girls but look down on them. Girls at the same stage of physical development have a corresponding interest in boys but are apt to hide it by considering them 'perfectly stupid'. Then, during early adolescence, girls are for a time physically larger than boys of their own age and are more mature socially because they reach puberty earlier. Early maturing boys and girls tend to be advanced socially. The social cultural climate of the home equips the children with social behaviour that either prepares or fails to prepare them to get along well in school.

Both children and adults are gregarious, but adulthood usually brings less social isolation than exists at any earlier time of life. In short, in the process of growing up, we become more and more social, finding many advantages and inner rewards in being together in a variety of ways.

3.18 Educational Implication of Studying Growth & Development

Consideration of physical growth and development has many advantages. Change in physique has an integral relation to the growth and development. The magnitude of the individual differences found at a given age, especially in the early teens, in the maturation of interests and emotionality, cannot be fully appreciated until the differences in physique are considered. Moreover, the crude facts of the great differences in size and strength and physique, especially between child and adult and between early and late maturers, present psychological problems often little understood by the individual. To the child, physical changes may be awkward and puzzling and often anxiety causing. Both teacher and parent may not make adequate allowances for the small child's physical limitations, and may fail to realize how much their greater size and strength affects both his attitudes and their own. They may have no appreciation of the almost all-pervading influence which early or late physical maturing may have on a youngster's activities and status and self-regard. Finally all this presents or is related to a variety of educational issues.

- Expectation from an individual- knowledge of what and when

- Knowledge of the appropriate process of growth and development
 - Appropriate behaviour according to the child's stage
 - Giving right kind of guidance & counselling
 - Better understanding of individual differences
-

3.19 Let Us Sum Up

In this lesson, you have studied the concept of human growth and development. The stages of development and the characteristics of each stage have also been discussed. The principles of development, their importance and need to study them scientifically have been discussed. We have learned that certain characteristics are typical of certain ages, but these are only guides and not set rules. Each child grows in his own way. One child may progress "slower" than another and still he is perfectly healthy and within the range of development appropriate for his age.

3.20 Check Your Progress

1. Distinguish between Growth and Development?
 2. Explain the principles involved in the process of Growth and Development?
 3. Write a short note on:
 - Physical Development;
 - Cognitive Development;
 - Emotional Development and
 - Social Development.
 4. State the educational implications of studying the process of Growth and Development?
-

3.21 Suggested Readings

1. Craig J Grace (1983): *Human Development, Prentice Hall, INC*, Englewood Cliffs, New Jersey.
2. Levinson, D.J., Darrow, C.N., Klein, E.B., Levinson, M.H. & Mckee, B. (1978) : *The Seasons of a Man's Lijk*, New York, Knopg.
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5. Sprinthall, C., Richard and Sprinthall A. Norman (1990): *Educational Psychology, A Dvelopmental Approach*. McGraw Hill Publishing Company, New York.
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LESSON NO 04:

STAGES OF DEVELOPMENT

Lesson Structure

4.0 Introduction

4.1 Objectives

4.2 Stages of Development - An Introduction

4.3 Infancy

4.4 Early Childhood

4.5 Later Childhood

4.6 Adolescence

4.7 Developmental Tasks of Adolescence

4.8 Problems of Adolescence

4.9 Guidance and Counseling for Adolescents

4.10 Let Us Sum Up

4.11 Check Your Progress

4.12 Suggested Readings

4.0 Introduction

Each individual, with his unique heredity and the way he is nurtured, determines the way he traverses the broad highway of his life at his rate of progress. He will attain the desire, shape, capacities and developmental status in a way which is peculiar to him at each stage of life. Growth is sometimes used to designate all the quantitative changes

brought about in the structure and functions of the human anatomy and physiology. The term development means a progressive series of qualitative changes that occur as a result of maturity and experience. Thus at each stage certain developmental processes bring changes in the individual in different aspects of life: physical, social, psychological and emotional. The speed of change varies from one individual to another but it follows a definite and predictable pattern. Every individual has to go through the various stages of childhood, adolescence, adulthood, and old age. Both growth and development, at every stage, follow certain principles. This is the first unit of this course. In this unit we shall discuss the concept and principles of human growth and development, why their systematic study is needed and how the teacher can facilitate growth and development during adolescence. We shall also discuss, in brief, various stages of development. You will also study the role of the teacher in facilitating the growth and development of school-going children. You can observe the growth of your students over a period of a few years.

4.1 Objectives

Dear students after reading this lesson, you should be able to:

- State the different stages of Growth and development;
- Write a short note on:
 - Infancy
 - Early Child Hood
 - Late Child Hood
 - Adolescence

4.2 Stages of Development - An Introduction

Any developmental process proceeds through some stages and each developmental stage differs from the other. Each stage of development has its characteristic. Psychologists, for the sake of convenience, have separated human life

span into stages or periods and identified specific changes that may be expected during each stage. The transition from one stage to next is gradual rather than sudden. Each stage of development is characterized by a set of unique, coherent and distinguishing features.

Each period in life has its own problems of adjustment. Throughout the life span people, develop techniques of handling each of their difficulties. Some of these techniques are suitable and others are not. Similarly, a method may be suitable for one age period and not for another.

4.3 Infancy

Development is an ongoing process. It starts from the birth of the child and goes up to death. At birth, the proportions of the body are very different from those of the adult. Infants, during the first two weeks, are called **neonates**. They usually have wrinkled, blotchy red skin and a large head. They sleep for about 18 to 22 hours a day, wake up when hungry and sleep again as soon as they are fed. Crying neonates can be made comfortable with humming in low tones and rocking-gently. Within a few days they begin recognizing their mother's voice. They develop a relationship with parents. As the neonates move towards infancy, their need for affection develops. Accepted and loved babies develop a sense of trust too. They investigate their environment. The ninth and tenth months see jealousy aroused in the baby and between the tenth and twelfth months, anger, love, sympathy and friendliness are distinguishable. From three months onwards, they start babbling.

By the sixth month the slow and awkward grasping of early months gives way to well-coordinated movements. The baby begins centering its attention on its own body. By the age of nine months a normal baby can creep. When they begin to crawl their curiosity becomes heightened.

Motor ability develops from the head down to the toes. The neonate's head is closer to eventual adult size than is the rest of the body. Also, the infant has more motor

control of the head than of the muscles lower down the body. The progression of motor control follows this pattern, first the head, then shoulders, arms and abdomen and finally the legs and feet. The growth and motor ability develop from the central axis of the body outwards. Trunk and shoulder movements occur earlier than separate arm movements. Control over the hands and fingers come last. The baby's first actions are: global and undifferentiated. Slowly, the infant's ability to make specific responses emerges. Refined activity of the fingers and thumb usually doesn't occur until the baby is about a year old. Motor development is thus heavily influenced by biological maturity. Practice is certainly necessary for full development of the biological potential. In activities like walking, early practice is a key ingredient in maintenance and further development.

Newborn babies have been shown to be capable of discriminating between sweet and sour tastes. Taste is the most highly developed of all the senses at birth. A response to different smells has been observed within two hours of birth. Some babies respond to sound almost immediately after birth, whereas others may take a few days to gain this sense. This difference is a result of the time it may take for the amniotic fluid to drain out the newborn's hearing mechanism. However, neonates not only show the ability to respond to sound, but can even discriminate among certain sounds. Even when three days old, neonates show a marked preference for the mother's voice over the voices of others. Vision develops more slowly than many of the other senses. Responses to light and darkness are functional. Within two days of birth and by the time they are ten days old infants can follow moving objects with their eyes.

Neonates can focus their eyes to a distance of eight to ten inches. The nursing newborn can certainly see the mother's face. By six months of age infants can discriminate between colours, between such shapes as circles and triangles and between the faces of parents and strangers. Some infants as young as one month old can distinguish between familiar and unfamiliar faces. Six-month-old infants have the ability to perceive depth and thus to avoid situations in which they might fall. An innate

link between the visual and motor systems tends to emerge when the infant is about six months of age.

By about one year of age, babies can associate the sounds they make with specific objects and thus they begin to utter their first words such as dada, mama or bye-bye. The baby at 12 months is able to produce approximately 30 to 50 words and by 18 months is typically producing at least 400 words.

During the first two years babies play alone. They explore their surroundings, handle toys and start uttering some word combinations. From birth, infants demonstrate their uniqueness and their variability. They have differences in their personalities and temperament. However, the basis of newborn individuality is not entirely understood. Researchers agree generally that babies have different personality styles and these differences increase over the first few months of life. Parents have a profound influence in shaping their children's personality.

The child's development of manual skills proceeds through a series of orderly stages from the centre of the body towards the periphery. On the whole large-muscle control precedes fine-muscle control. Right or left-handedness develops gradually rather than appearing in an immediate manner. Over the first year of life infants typically undergo a patterned sequence of changes in their method of focusing on or organizing visual events.

4.4 Early Childhood

Early childhood is generally referred to as the preschool period. During the period between two and six years, children enlarge the scope of their behaviour. They refine their previously learned skills and evolve new ones for relating themselves with other people. Thus the child progressively develops as a social being in his own right.

By the time a child is three years old, positive emotions like love and affection are shown.

Mimicking social practices while playing games are also displayed. Their love for dolls and stuffed animals and showering affection on them is common. Their emotions get an outlet through play. Their need for socialization grows.

In the pre-school period mental/intellectual development is characterized by the rapid expansion of cognitive abilities. Children become more curious and eager to seek information, keep it in order and use it. Whereas sensory motor processes largely dominate development during infancy, a significant transition occurs (after two years of age) towards more abstract processes of reasoning, drawing inferences and problem-solving. By the time children are six years old they have developed a set of cognitive skills.

Language development takes place during this period. Language development begins with howling, babbling and iteration. According to Piaget, language emerges only at the end of the sensory motor period of intellectual development. Chomsky believes that the language acquisition device is an inborn mental structure that enables children to induce grammatical rules and to form their own language from those rules. The inborn language acquisition device directs the children's ability to learn.

A major development task for a child during the first six years of life is to acquire gender identification. Besides biological factors, social factors also influence the gender behaviour of children. The environment is the most powerful factor in shaping the gender identity among children. The cognitive development theory claims that children first come to categorize themselves as male or female and then attempt to acquire those patterns of behaviour that fit their gender category.

4.5 Later Childhood

During this period (6-12 years of age), physical growth is initially slow. There is vast intellectual, moral and social development. Around seven years of age major advances in intellectual development take place. During the later childhood period, the memory and the problem-solving ability improves and children become aware of their

achievements. They become capable of comparing themselves with others with respect to intellectual, athletic and ' social skills. They generally select playmates of their own sex and play together in groups. This period is often referred to as gang-age. By the time the children reach puberty, they restrict their friendship to a few friends one or two close companions. They develop an understanding of the meaning of rules. Their moral development takes place as they accept the rules and standards of their friends and teachers.

This is the primary school stage. An important feature of this stage is the children's ability to learn about themselves and their environment. They develop their intellectual capabilities through information processing. Piaget calls it the period of concrete operations. He refers to it as concrete because children are bound by immediate physical reality-they develop the power to reason simultaneously by the whole and by the part at this stage. Children acquire the ability to order objects in a series according to some abstract dimension, such as size, weight, brightness or smell.

The primary school years are a time of rapid growth in children's knowledge of the social world and of the requirements for social interaction. They assess the status of the people they encounter from their behaviour (walking, eating, reading, playing), their emotional state (happy, sad, angry), their roles (teacher, parents) and their social context (religious place, school, home). In other words, children form a perception of and about people. They describe people largely in terms of external, readily available characteristics.

Children continue to grow in the strength, speed and coordination needed for motor skills. They climb trees, walls, etc. They develop precision in athletic ability. Being active and participating in games helps them to develop a concept of themselves. They get feedback regarding their desirability, worth and status from other people.

The function and role of schools become important for children's growth and development: physical, intellectual and motor. Schools teach specific cognitive skills, primarily the 3 Rs and general skills associated with effective participation in the

classroom setting. Peer group interaction plays an important role in shaping the children's personality. At this stage, they enter the school context peer group interaction. They compare themselves and play dominant or submissive roles in the group.

4.6 Adolescence

Adolescence from Latin *adolescere* meaning “to grow up” is a transitional stage of physical and mental human development generally occurring between puberty and legal adulthood (age of majority), but largely characterized as beginning and ending with the teenage stage. According to Erik Erikson's stages of human development, for example, a young adult is generally a person between the ages of 20 and 40, whereas an adolescent is a person between the ages of 13 and 19. Historically, puberty has been heavily associated with teenagers and the onset of adolescent development. However, the start of puberty has had somewhat of an increase in preadolescence (particularly females, as seen with early and precocious puberty), and adolescence has had an occasional extension beyond the teenage years (typically males) compared to previous generations. These changes have made it more difficult to rigidly define the time frame in which adolescence occurs.

The end of adolescence and the beginning of adulthood varies by country and by function, and furthermore even within a single nation-state or culture there can be different ages at which an individual is considered to be (chronologically and legally) mature enough to be entrusted by society with certain tasks. Such milestones include, but are not limited to, driving a vehicle, having legal sexual relations, serving in the armed forces or on a jury, purchasing and drinking alcohol, voting, entering into contracts, completing certain levels of education, and marrying. Adolescence is usually accompanied by an increased independence allowed by the parents or legal guardians and less supervision, contrary to the preadolescence stage.

World Health Organisation (WHO) defines adolescence both in terms of age (spanning the ages between 10 and 19 years) and in terms of a phase of life marked by special attributes. These attributes include:

1. Rapid physical growth and development
2. Physical, social and psychological maturity but not all at the same time
3. Sexual maturity and the sexual activity
4. Experimentation
5. Development of adult mental processes and adult identity
6. Transition from total socio-economic dependence to relative independence

Briefly speaking, Adolescence is very crucial stage of development. All types of changes biological, physical, social, cognitive, etc., take place during the adolescence stage. The major changes that take place at this stage of development are discussed below.

1. Physical development: The physical changes an adolescent undergoes are as follows:

- ✿ **Growth spurt:** During the early adolescent years, most children experience the adolescent growth spurt, a rapid increase in height and weight. Usually, this spurt occurs in girls two years earlier than in boys. The spurt usually lasts about two years and during this is time girls gain 6 to 7 inches and boys 8 to 9 inches in height. By the age of seventeen in girls and eighteen in boys, the majority of them have reached 98 per cent of their final height.
- ✿ **Puberty:** During adolescence changes in growth and development are truly revolutionary. After a life time of inferiority, they suddenly catch up with adults in physical size and strength. Accompanying these changes is the rapid development of the reproductive organs that signals sexual maturity. Sexual and reproductive maturity becomes evident at this stage of development. Adolescents are often extremely sensitive and perceptive about their own physical appearance and that of their friends. The

discrepancies between their less than perfect self-images and the glossy ideals that they are supposed to emulate can be a real source of anxiety.

- ✿ **Sexual identity and relationships:** Directly related to biological changes is sexual identity. This includes the expression of sexual needs and feelings and the acceptance or rejection of sex roles. With the attainment of puberty and adolescence, all the biological changes of physical maturity bring a new interest in sexuality. This accentuates the problem of integrating the sexual drive with other aspects of the personality. Early adolescents don't usually have to deal with problems of sexual intimacy at a very sophisticated level. Early adolescents need to be liked and have a sense of self-esteem. They feel strong pressures to conform to the peer group.

In early adolescence, most relationships with the opposite sex take place in groups. It is known as the trial period for adolescents to collect the ideas and experiences with which to form the basic attitudes about sex roles and sexual behaviour. They can examine their own and others stereotyped images of the opposite sex. Adolescents tend to select friends who are from a similar social class, interests, moral values and social maturity. Identity is composed of the weight an individual gives to the question “who am I?”

Identity is a person's sense of placement within the world, the meaning that one attaches to oneself in the broader context of life. In their everyday lives individuals interact with one another not so much on the basis of what they actually are as of what conceptions they have of themselves and of others. Accordingly, their identity leaves its signature on everything they do. Identities are not fixed. They undergo continual shaping and reshaping over the course of the life span. Adolescence poses identity tasks that seem to play an important part in successful transition to adulthood.

- 2. Cognitive development:** Important cognitive developments occur during this time. An expansion in capacity and style of thought broadens adolescents awareness, imagination, judgement and insight. These enhanced abilities also

lead to a rapid accumulation of knowledge that opens up a range of issues and problems that can complicate and enrich the adolescent's life. Adolescents also show an increasing ability to plan and think ahead. Cognitive skills continue to expand throughout the adolescence period. The development of thinking ability also takes place during adolescence. Adolescents learn to examine objects, events or phenomena and consciously develop their thinking ability. For example, they may silently warn themselves not to jump to conclusions without convincing proof, they also become extremely introspective and self-absorbed. At the same time, they begin to challenge everything, to reject old boundaries and categories. In so doing, they question old attitudes and become more creative thinkers.

4.7 The Developmental Tasks of Adolescence

The developmental tasks during adolescence are listed below:

1. Accepting one's physique or body as it is:-
2. Achieving new and more mature relationships with age mates.
3. Achieving social roles i.e. becoming responsible members of society
4. Achieving values.
5. Preparing for economic career.
6. Preparing for marriage and family life.

4.8 Problems of Adolescence

The physical and psychological characteristics of adolescents and the nature of developmental tasks which they are expected to perform often pose certain challenges and problems for adjustment. Basically adolescents face problems related to their home, school and society. They are presented in Table that follow:

Self Related	Home Related	School Related	Society Related
Body image	Authoritative parenting	Strict teachers	Gender bias, caste related problems
Pimples	Poor rapport with parents	Partial treatment	Generation gap
Complexion	Lack of communication	Closed school atmosphere	Orthodox practices
Eating disorders	Low socio-economic background	Not acceptable classmates	Repressive atmosphere
Body changes	Non conducive atmosphere	Poor marks	Over expectations
Moodiness	Space constraint	Too much home-work	Lack of friends
Touchiness	Comparison with others	No co-curricular participation.	
Anger		Long school hours	
Hypersensitivity			
Feeling of rebel			
Crushes			
Infatuation			
Day dreams			
Personality			

Common Problems during Adolescence

The problems listed in the above table are a few representative common problems which adolescents face. The more serious problems include drug addiction, alcoholism, smoking, truancy, sexual obsessions, etc. They may not appear in everybody. There are variations in the experience of these problems across people.

4.9 Guidance and Counseling for Adolescents

So far you have studied about how adolescence works as a major transition period for a person. Whenever we go to a new place we want to know about the details of that place. In that case a guide can help us to move smoothly around that place and help us in solving our problems. Adolescence is a phase which makes a person enter into the adult world. Growing into an adult a child makes us experience the problems in various domains such as:

- Personal
- Social
- Educational

- Vocational and career related

Through guidance and counseling services adolescents can be helped to solve these problems. With the help of career counseling and vocational guidance they can be helped with insights into the various career opportunities and educational choices that are available. Personal and social counseling can help them in resolving their problems.

4.10 Let Us Sum Up

In this lesson, you have studied the concept of human growth and development. The stages of development and the characteristics of each stage have also been discussed. The principles of development, their importance and need to study them scientifically have been discussed. As you have seen, adolescence is a period of transition between childhood and adulthood. It has a number of problems. During this period, adolescents are considered neither as children nor as adults. Their status remains ambiguous. They are prone to rebel against authority. What bearing these characteristics of adolescents have upon the instructional process and for dealing with their particular problems have also been discussed. What you, as a teacher, can do to attend to these problems and how you can help the development of a balanced personality of your students have also been dealt with in order to create a better understanding of students' needs and problems.

4.11 Check Your Progress

1. Trace those events from your own childhood and adolescence stages that reflect the characteristics of these periods?
2. Write a short note on:
 - Infancy;
 - Early Childhood; Late Childhood and
 - Adolescence.

3. “Adolescence is a period of storm and stress”. Discuss with convincing arguments?
 4. Teachers can do a lot to help adolescents develops a balanced personality. How? Discuss your experiences in this regard?
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4.12 Suggested Readings

1. Craig J Grace (1983) : *Human Development, Prentice Hall, INC*, Englewood Cliffs, New Jersey.
2. Levinson, D.J., Darrow, C.N., Klein, E.B., Levinson, M.H. & Mckee, B. (1978) : *The Seasons of a Man's Lijk*, New York, Knopg.
3. Sanden Vander W. James (1989) : *Human Development, Refred A Knopg, INC*. New York.
4. Sheehy, G. (1974): *Parsages: Predictable Crisis of Adult Life*, New York, Dutton.
5. Sprinthall, C., Richard and Sprinthall A. Norman (1990) : *Educational Psychology, A Developmental Approach*. McGraw Hill Publishing Company, New York.
6. Wolrnan, B.B. (Ed), (1982): *Handbook of Developmental Psychology*, Prentice Hall: Englewood, Cliffs, N.J.